Market Assessment Report for 2nd Quarter of 2024

26 March to 25 June 2024

SEPTEMBER 2024

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

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QUARTERLY MARKET ASSESSMENT REPORT

This quarterly report assesses the results of the WESM operations for the Second Billing Quarter of 2024, covering the period 26 March to 25 June 2024, and how the market performed compared with the previous quarter/s of the year.

I. Capacity Profile

A. Registered Capacity

As of the end of the second billing quarter in 2024, the total registered capacity in the WESM reached 28,304.4 megawatts (MW). This represents a 2.67% increase, or an additional of 737.5 MW compared to the 27,566.9 MW recorded on 25 March 2024. The primary contributors to this growth were the recent additions of the following power plants:

Table 1. New Generation Facility for 2nd Quarter 2024

Region	Plant Type	Registered Capacity (MW)	Facility Name
Luzon	Natural Gas	440	Excellent Energy Resources Inc.
Luzon	Solar	59.8	Calabanga Renewable Energy (CARE), Inc.
Luzon	Solar	55	Powersource First Bulacan Solar Inc.
Luzon	Battery	50	SMGP BESS Power Inc.
Luzon	Battery	40	SMGP BESS Power Inc.
Luzon	Geothermal	16.7	AP Renewables Inc.
Visayas	Wind	13.2	PetroWind Energy Inc.
Visayas	Biofuel	7	Central Azucarera de San Antonio
Visayas	Geothermal	4.7	Energy Development Corporation
Mindanao	Battery	20	Fort Pilar Energy, Inc.
Mindanao	Hydro	14.5	Siguil Hydro Power Corporation
Mindanao	Oil-Based	4.6	Strategic Energy Development Inc.
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Additionally, changes in the registered capacities of two (2) hydro power plants, one (1) coal plant, one (1) natural gas plant, and one (1) oil-based plant resulted in a combined net total registered capacity of 16.6 MW for this quarter. Figure 1 further illustrates the total registered capacity per technology.

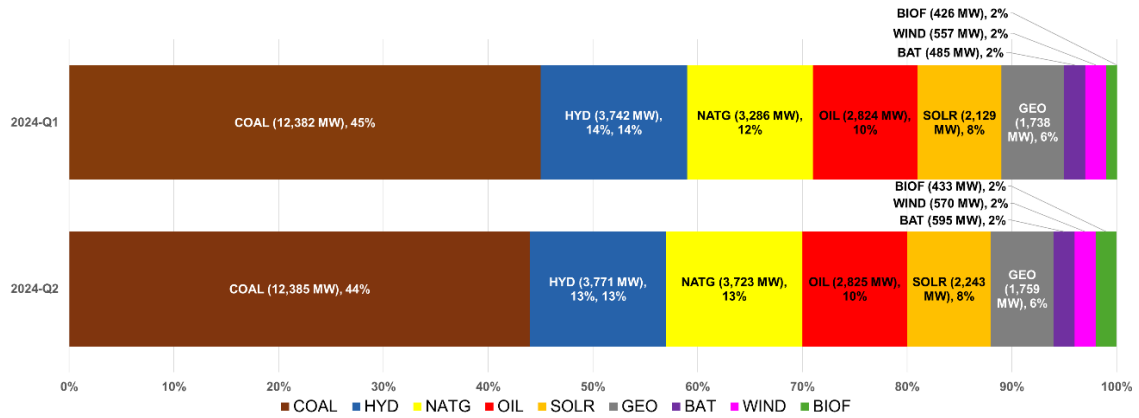

Figure 1. Registered Capacity, 1st and 2nd Quarter 2024

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 that averaged at 3,088 MW or 11% of the total registered capacity and capacities which were ***not*** offered/nominated in the market[1], averaging at 4,472 MW or 16% of the total registered capacity mainly attributable to the deration of power plants caused by, among other things, technical limitations.

Tables 1 and 2 present the breakdown of quarterly and monthly capacity profiles for the specified period while Figure 1 illustrates the breakdown of the total registered capacities.

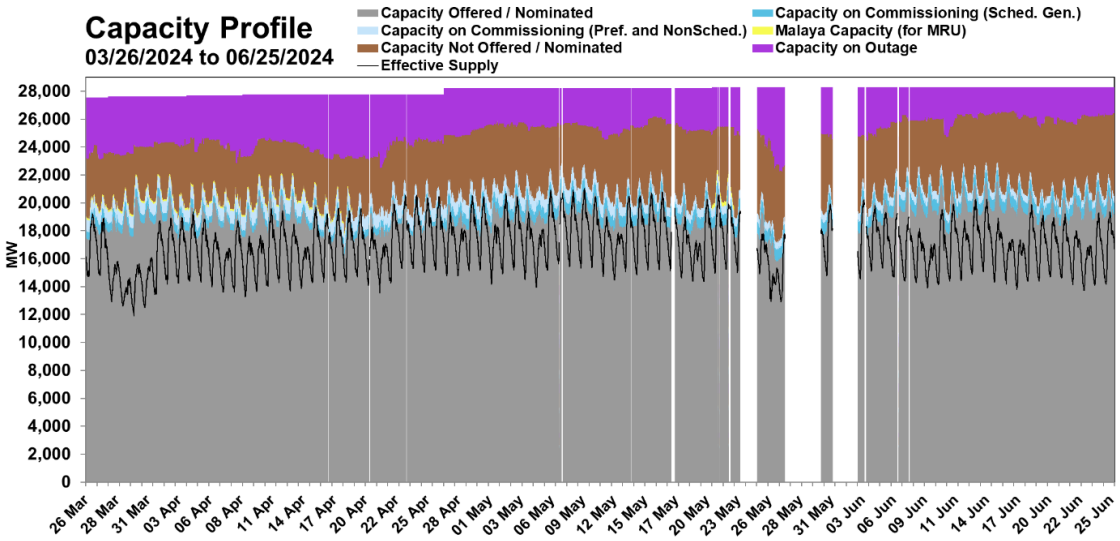

Figure 2. Capacity Profile, 2nd Quarter 2024

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

Table 2. Capacity Profile, 1st and 2nd Quarter 2024

	1st Quarter 2024 (25 Dec 2023 to 25 Mar 2024)		2nd Quarter 2024 (25 Mar to 25 Jun 2024)		% Average Change
	Average (in MW)	% of RegCap	Average (in MW)	% of RegCap	
Capacity on Outage	3,525	13%	3,088	11%	-12%
Capacity Not Offered / Nominated	4,373	16%	4,472	16%	2%
Capacity on Commissioning	1,553	6%	1,345	5%	-13%
Malaya Capacity (for MRU)	136	0.5%	215	1%	58%
Capacity Offered / Nominated	17,751	65%	19,002	68%	7%

Table 3. Monthly Capacity Profile, 2nd Quarter 2024

	April 2024 (26 March to 25 April 2024)		May 2024 (26 April to 25 May 2024)		June 2024 (26 May to 25 June 2024)	
	Average (in MW)	% of RegCap	Average (in MW)	% of RegCap	Average (in MW)	% of RegCap
Capacity on Outage	3,807	14%	2,892	10%	2,565	9%
Capacity Not Offered / Nominated	3,763	14%	4,655	16%	4,997	18%
Capacity on Commissioning	1,437	5%	1,483	5%	1,114	4%
Malaya Capacity (for MRU)	130	0.5%	300	1%		-
Capacity Offered / Nominated	18,604	67%	19,044	67%	19,358	68%
Registered Capacity (end of the billing Month)	27,777	100%	28,281	100%	28,304	100%

[1] Subject to compliance monitoring or investigation for possible non-compliance with the submission of offers under the WESM Rules

II. Power Plant Outages[2]

A. Capacities on Outage by Plant Type

In terms of capacities on outage by plant type, on an average, there was an observed improvement coming from the first quarter of 2024. Coal and hydro power plants had the highest share in the total capacities on outage, while it was also noted that come the billing period of April, hydro power plants posted a significant increase on their outage level, noting that this type of plant is exempted from the prohibition to go on outage during summer months[3]. On another note, coal and natural gas power plants had significant improvements in the levels of capacities on outage. Majority of coal plant's capacity on outages during this quarter were due to unplanned shutdowns. Several of these power plants, as listed in the Table 4, remained offline until the end of the review period:

Table 4. Coal Power Plants on Outage

Resource Name	Capacity (in MW)	Date Out
08PALM_G01	135	31 March 2024
10PPEI_U01	20	02 June 2024
14SARANG_U01	122	25 June 2024

The reduced capacity of hydro power plants during this period was a result of both planned and unplanned outages. However, majority of these outages were attributed to insufficient water supply, as a consequence of the El Niño phenomenon.

The outages in oil-based power plants were primarily caused by forced shutdowns resulting from technical constraints within the units. On the other hand, natural gas power plants accounted for a relatively small portion of the total outages, with majority of their outages attributed to fuel or gas supply restrictions.

The overall level of plant outages was observed to have gradually decreased towards the end of the quarter in line with the aforementioned Department of Energy (DOE) directives on prohibition for generators in going on outage during the summer months to ensure the stability of supply.

When examining the data on a month-on-month basis as shown in Table 6, April 2024 recorded the highest monthly average outage level at 3,738 MW, which was nearly identical to the level observed in March 2024.

Meanwhile, Figure 3 below shows the actual capacities on outage per trading interval where it was observed that the peak outages occurred on 27 May 2024 when the Luzon grid placed under Red Alert due to generation deficiency involving major coal and natural gas power plants which contributed to the lack of supply to the grid and the high demand during the day.

[2] Provided in Appendix A is the list of major plant outages

[3] DOE-DC2020-02-0004: Providing guidelines on the planned outage schedules of power plants and transmission facilities and the public posting of the grid operating and maintenance program.

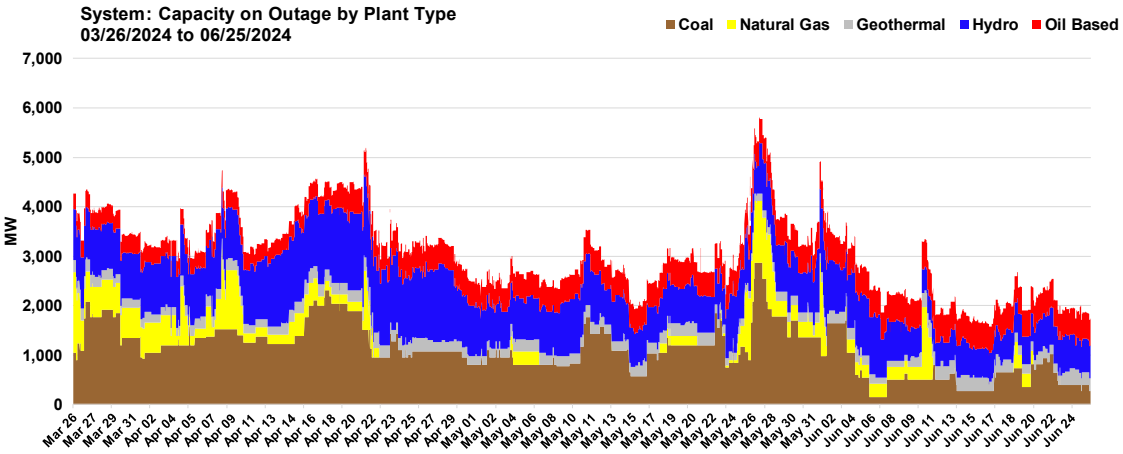

Figure 3. Plant Outage Capacity (by Plant Type), 2nd Quarter 2024

Table 5. Outage Summary, 1st and 2nd Quarter of 2024

	1st Quarter 2024 (26 Dec 2023 to 25 Mar 2024)				
	Min		**Max**		**Average**
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Coal	1,731	01/22/2024 23:20	3,433	01/06/2024 17:25	2,295
Natural Gas	190	12/30/2023 8:00	1,456	01/03/2024 6:40	511
Geothermal	73	01/26/2024 0:05	311	01/21/2024 15:20	147
Hydro	199	01/12/2024 20:40	818	01/25/2024 0:15	324
Oil-based	306	12/26/2023 0:10	593	01/07/2024 8:20	351

	2nd 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)	
Coal	155	06/05/2024 22:55	2,870	05/26/2024 13:45	1,109	-52%
Natural Gas	46	05/23/2024 12:00	1,620	03/26/2024 0:05	454	-11%
Geothermal	60	06/15/2024 10:45	396	06/04/2024 15:00	218	48%
Hydro	406	06/09/2024 9:10	1,696	04/21/2024 11:00	975	201%
Oil-based	312	04/04/2024 14:50	805	06/02/2024 2:00	474	35%

Table 6. Monthly Outage Summary, 2nd Quarter 2024

	April 2024 (26 Mar to 25 Apr 2024)				
	Min		**Max**		**Average**
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Coal	901	03/26/2024 6:45	2,304	04/17/2024 18:35	1,438
Natural Gas	190	04/03/2024 20:05	1,620	03/26/2024 0:05	490
Geothermal	103	04/03/2024 8:35	343	04/22/2024 14:20	219
Hydro	864	03/28/2024 16:35	1,696	04/21/2024 11:00	1,209
Oil-based	312	04/04/2024 14:50	630	04/23/2024 15:50	381

	May 2024 (26 Apr to 25 May 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Coal	570	05/15/2024 9:50	1,842	05/22/2024 23:55	1,035
Natural Gas	46	05/23/2024 12:00	1,246	05/25/2024 17:15	242
Geothermal	149	05/23/2024 23:05	363	05/16/2024 14:20	214
Hydro	575	05/17/2024 9:35	1,591	04/28/2024 1:00	942
Oil-based	467	05/21/2024 17:15	611	05/18/2024 5:40	496

	June 2024 (26 May 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	851
Natural Gas	46	05/23/2024 12:00	1,511	05/27/2024 17:45	502
Geothermal	60	06/15/2024 10:45	396	06/04/2024 15:00	219
Hydro	406	06/09/2024 9:10	1,366	06/02/2024 4:50	773
Oil-based	491	05/26/2024 22:05	805	06/02/2024 2:00	545

B. Capacities on Outage by Category

Despite the noted substantial increase in forced outages by 139% when compared to the previous quarter, the overall outages still recorded a net decrease of 8% during the second quarter of 2024. This decline was primarily attributed to a significant reduction in both planned and maintenance outages in line with the aforementioned directives of the DOE. Planned and maintenance outages averaged at 595MW and 159MW, a decrease of 63% and 81% from the previous quarter, respectively.

In line with the observed outages during the Red Alert declaration in May, it was likewise noted that these were categorized under forced outages caused by a multitude of reasons involving technical issues from the power plants brought about by the scorching heat.

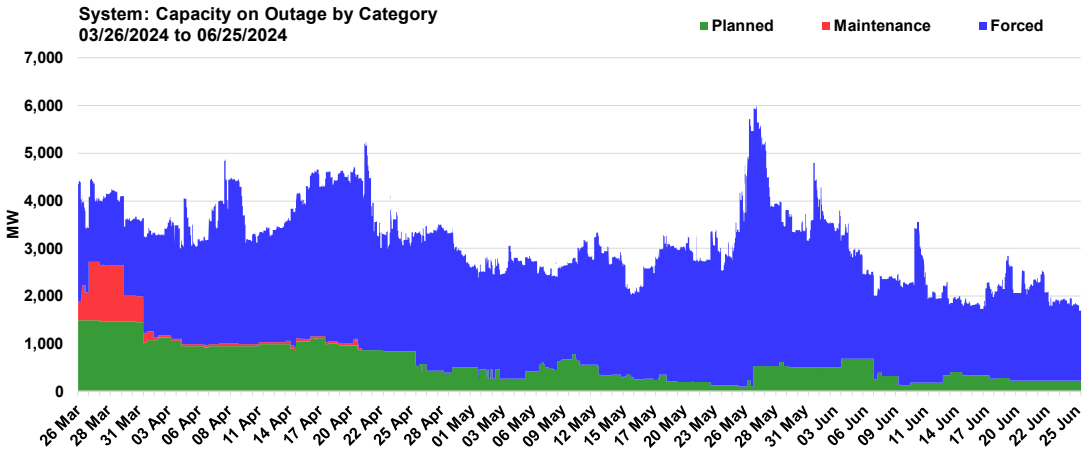

Figure 4. Plant Outage Capacity (by Outage Category), 2nd Quarter 2024

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, 1st and 2nd Quarter 2024

	1st Quarter 2024 (26 Jan to 25 Mar 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Planned Outage	798	02/01/2024 0:15	2,989	03/05/2024 9:05	1,624
Maintenance Outage	5	01/26/2024 1:40	3,497	01/03/2024 6:40	842
Forced Outage	5	01/25/2024 0:10	2,951	03/01/2024 19:55	1,037

	2nd 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)	
Planned Outage	39	05/26/2024 4:50	1,545	03/26/2024 0:05	595	-63%
Maintenance Outage	2	04/06/2024 11:55	1,235	03/27/2024 0:00	159	-81%
Forced Outage	1,261	03/27/2024 19:35	5,488	05/26/2024 15:35	2,475	139%

Table 8. Monthly Outage Summary, by Outage Category, 2nd Quarter 2024

	April 2024 (26 Mar to 25 Apr 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Planned Outage	831	04/23/2024 0:15	1,545	03/26/2024 0:05	1,061
Maintenance Outage	2	04/06/2024 11:55	1,235	03/27/2024 0:00	220
Forced Outage	1,261	03/27/2024 19:35	4,373	04/21/2024 11:00	2,528

	May 2024 (26 Apr to 25 May 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
Planned Outage	89	05/25/2024 13:50	781	05/10/2024 8:05	361
Maintenance Outage	16	04/28/2024 15:45	513	05/11/2024 3:05	90
Forced Outage	1,738	05/15/2024 20:20	4,216	05/25/2024 22:50	2,480

	June 2024 (26 May to 25 Jun 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	678	06/05/2024 0:15	355
Maintenance Outage	4	06/05/2024 9:45	256	06/01/2024 1:00	103
Forced Outage	1,339	06/16/2024 18:40	5,488	05/26/2024 15:35	2,418

III. Demand and Supply Situation

The overall demand for electricity on the system increased by an average of 15% during this period. This rise was expected given the impact of the El Niño phenomenon, which was discussed in the previous sections. El Niño often leads to hotter weather and increased energy consumption, brought about by among other things, the increase use of cooling systems contributing to higher overall demand. Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA) has been closely monitoring the situation. Per PAGASA's notice[4], El Niño persisted during the months of March to May 2024, after which there is a likelihood of transitioning to La Niña conditions.

[4] PAGASA El Niño Advisory no. 08

Due to the Energy Regulatory Commission's (ERC's) Order[5] temporarily suspending the reserve market settlement payments, reserve schedules experienced a significant decrease of approximately 26%.

Following the increase in total registered capacity and a significant portion of the increase being categorized as preferential/must dispatch power plants, the effective supply[6] for 2024-Q2 likewise increased by 10% from 15,282 MW to an average of 16,913 MW.

Due to the interplay between effective supply and system demand, the average quarterly supply margin[7] experienced a significant decline of 28%, dropping from an average of 916 MW in the first quarter of 2024 to 716 MW in the second quarter. Moreover, the lowest supply margin recorded during this period occurred on 03 June 2024 coinciding with the issuance of a Yellow Alert in Luzon.

On 24 April 2024 at 1430h trading interval, the system experienced its highest recorded demand requirement at 19,229 MW. This significant increase in the demand prompted the System Operator (SO) to declare a Red and Yellow Alert for both the Luzon and Visayas grids which indicates that the available reserves were below the required level.

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. The dip during the last week of March 2024 was attributable to the observance of the Holy Week in the country.

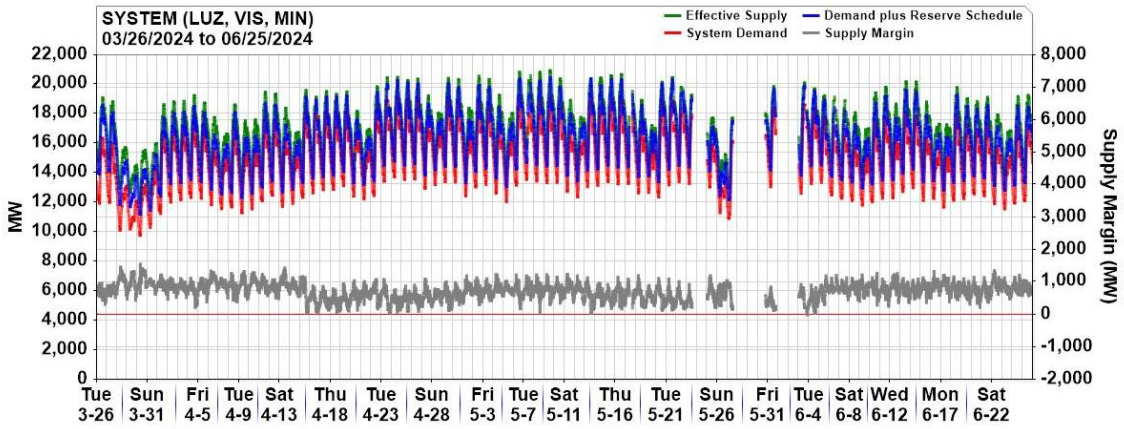

Figure 5. Demand, Supply, Demand plus Reserve Schedule and Supply Margin, 2nd Quarter 2024

Meanwhile, Tables 8 and 9 present a breakdown on statistics on the demand, effective supply, and supply margin.

[5] ERC Order dated 25 March 2024, ERC Case No. 2023-002 RC, In the Matter of the Application for the Issuance of Rules on the Price Determination Methodology for the Implementation of the Co-Optimized Energy and Reserve Market in the Wholesale Electricity Spot Market (WESM), Philippine Electricity Market Corporation (PEMC) and the Independent Electricity Market Operator of the Philippines, Inc. (IEMOP), Applicants

[6] The system effective supply is equal to the offered capacity of all scheduled generator resources, nominated loading level of non-scheduled generating units and projected output of preferential dispatch generating units adjusted for any security limit and ramp rates. Scheduled output of power plants on testing and commissioning, through the imposition of security limit by SO, are accounted for in the effected supply. Likewise included is the scheduled output of Malaya plant when it is called to run as Must Run Unit (MRU).

[7] The supply margin is equal to the effective supply less system demand requirement plus reserve schedule.

Table 9. Demand and Supply Summary, 1st and 2nd Quarter 2024

	1st Quarter 2024 (26 Jan to 25 Mar 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
System Demand	9,008	01/01/2024 7:30	16,294	03/07/2024 14:50	12,753
Reserve Schedule	1,038	12/26/2023 3:05	2,204	03/20/2024 14:05	1,613
Demand plus Reserve Schedule	10,148	12/26/2023 4:00	18,416	03/06/2024 14:40	14,366
Effective Supply	11,342	12/26/2023 5:05	19,008	03/19/2024 14:30	15,282
Supply Margin	34	03/06/2024 21:05	1,935	01/01/2024 10:05	916

	2nd 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	9,678	03/30/2024 6:05	19,229	04/24/2024 14:30	15,007	15%
Reserve Schedule	458	04/18/2024 16:05	2,230	03/26/2024 13:05	1,191	-35%
Demand plus Reserve Schedule	11,105	03/30/2024 7:05	20,556	05/09/2024 14:30	16,197	11%
Effective Supply	11,902	03/30/2024 7:00	21,031	05/09/2024 14:00	16,913	10%
Supply Margin	- 51	06/03/2024 21:25	1,593	03/30/2024 7:05	716	-28%

Table 10. Monthly Demand and Supply Summary, 2nd Quarter 2024

	April 2024 (26 Mar to 25 Apr 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	14,531
Reserve Schedule	458	04/18/2024 16:05	2,230	03/26/2024 13:05	1,147
Demand plus Reserve Schedule	11,105	03/30/2024 7:05	20,328	04/24/2024 14:30	15,677
Effective Supply	11,902	03/30/2024 7:00	20,568	04/24/2024 14:00	16,436
Supply Margin	- 18	04/16/2024 18:25	1,593	03/30/2024 7:05	759

	May 2024 (26 Apr to 25 May 2024)				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
System Demand	11,967	05/05/2024 7:00	19,214	05/13/2024 14:40	15,767
Reserve Schedule	723	05/13/2024 15:25	1,669	05/11/2024 1:15	1,174
Demand plus Reserve Schedule	12,987	05/05/2024 7:05	20,556	05/09/2024 14:30	16,941
Effective Supply	13,944	05/05/2024 7:05	21,031	05/09/2024 14:00	17,574
Supply Margin	- 1	05/13/2024 14:25	1,275	05/11/2024 7:05	633

	June 2024 (26 May to 25 Jun 2024				
	Min		Max		Average
	(in MW)	Date and Time Interval	(in MW)	Date and Time Interval	(in MW)
System Demand	10,830	05/27/2024 4:00	18,708	06/03/2024 14:25	14,750
Reserve Schedule	467	06/03/2024 21:05	1,628	06/14/2024 13:25	1,263
Demand plus Reserve Schedule	12,082	05/27/2024 4:05	19,993	06/03/2024 14:00	16,013
Effective Supply	12,914	05/27/2024 4:05	20,269	06/13/2024 13:50	16,767
Supply Margin	- 51	06/03/2024 21:25	1,397	06/22/2024 6:05	754

IV. Market Price Outcome

A. Market Prices

The overall increase in market prices in the second quarter of 2024, compared to the previous quarter, was mainly due to lower levels of supply margin, which translated to consistently high market prices throughout the quarter under review.

The monthly average prices exhibited fluctuating patterns, primarily influenced by the interplay between supply and demand in the system. Throughout the second quarter of 2024, there were noticeable price spikes during off-peak hours, primarily attributed to reduced offers from hydro power plants and the pumping operations of Kalayaan Power Plant, which resulted in an increased load necessitating higher-priced generators.

During peak hours on March 15, 2024, the market experienced its highest price for the second quarter of 2024 at PHP41,617/MWh. This peak price coincided with a critically thin supply margin of 4.3 MW, and total outages reached 4,015.02 MW

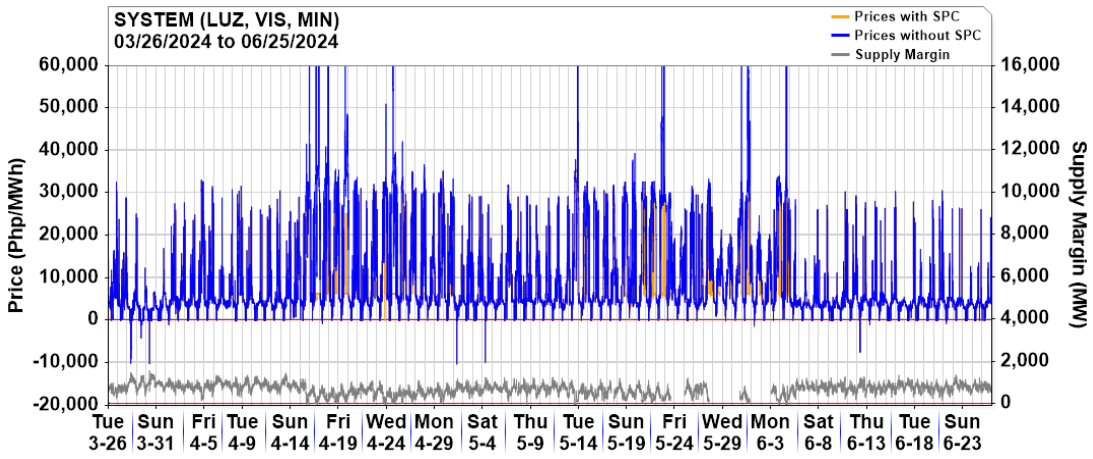

Figure 6. Market Price Trend vs. Supply Margin, 2nd Quarter 2024

Table 11. Market Price Summary, 1st and 2nd Quarter 2024

	1st Quarter 2024 (26 Jan to 25 Mar 2024) (in PHP/MWh)			2nd Quarter 2024 (26 Mar to 25 Jun 2024) (in PHP/MWh)			% Average Change
	Max	Min	Average	Max	Min	Average	
System	56,728.48	- 7,138.23	4,855.87	41,617.33	- 10,208.41	7,466.57	54%

Table 12. Monthly Market Price Summary, 2nd Quarter 2024

	April 2024 (Mar Jan to 25 Apr 2024) (in PHP/MWh)			May 2024 (Apr Jan to 25 May 2024) (in PHP/MWh)			June 2024 (May to 25 Jun 2024) (in PHP/MWh)		
	Max	Min	Average	Max	Min	Average	Max	Min	Average
System	41,617.33	- 10,189.31	7,363.63	37,966.74	- 10,208.41	8,599.03	33,748.43	- 7,488.97	6,398.98

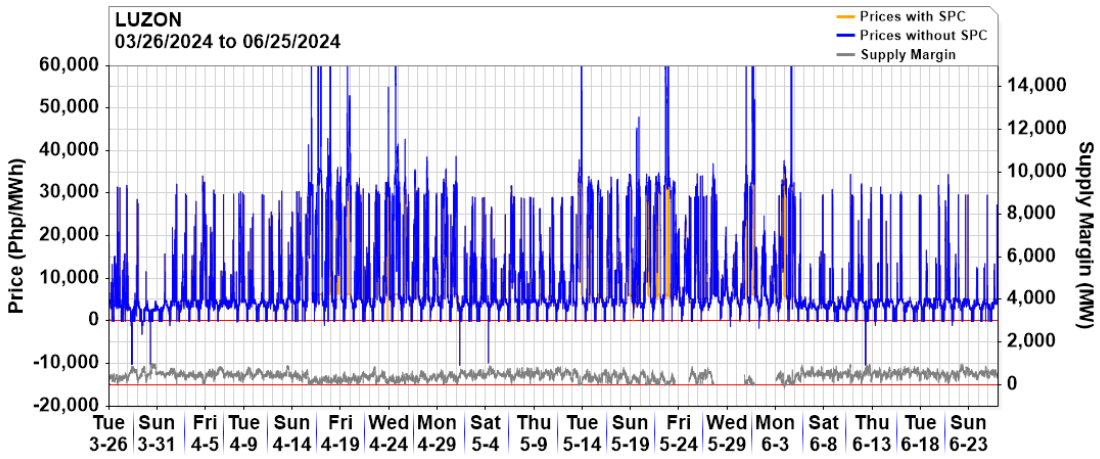

Figure 7. Market Price Trend - Luzon, 2nd Quarter 2024

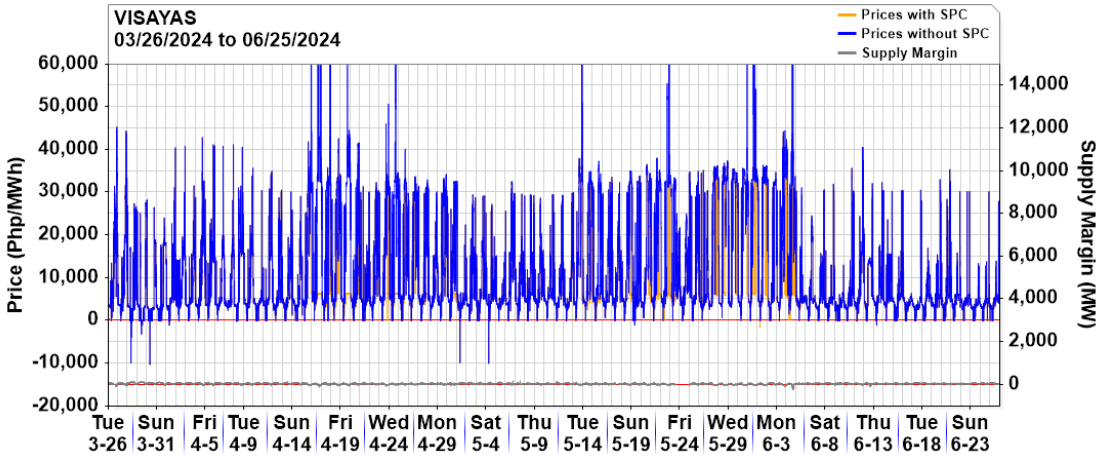

Figure 8. Market Price Trend - Visayas, 2nd Quarter 2024

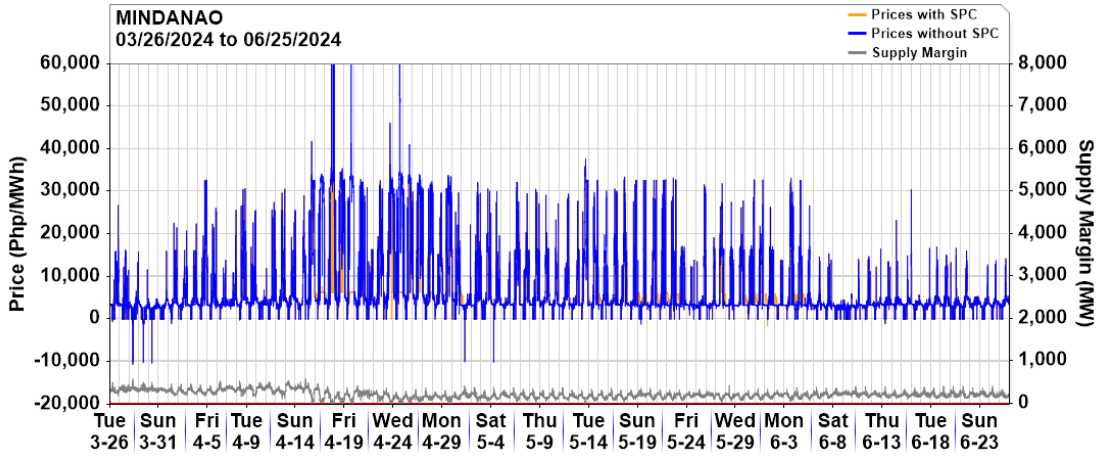

Figure 9. Market Price Trend - Mindanao, 2nd Quarter 2024

Table 13. Monthly Regional Price Summary, 2nd Quarter 2024

	April 2024 (Mar Jan to 25 Apr 2024) (in PHP/MWh)			May 2024 (Apr Jan to 25 May 2024) (in PHP/MWh)			June 2024 (May to 25 Jun 2024) (in PHP/MWh)		
	Max	Min	Average	Max	Min	Average	Max	Min	Average
Luzon	41,521.22	- 10,156.11	7,089.23	38,021.28	- 10,369.61	8,632.81	36,623.65	- 10,266.54	6,173.58
Visayas	46,075.58	- 10,258.46	9,248.71	37,667.07	- 10,118.87	7,734.02	44,270.49	- 1,604.00	9,187.83
Mindanao	46,117.94	- 10,574.02	6,921.10	37,975.85	- 9,991.24	9,272.80	33,144.53	- 1,604.00	4,848.81

B. Price Distribution

As depicted in Figure 10, a significant portion of the market prices, averaging between 68% to 80% of the total observations for the quarter, fell within the range of PHP5,000/MWh to PHP10,000/MWh. This pattern was primarily influenced by the interplay of supply and demand factors.

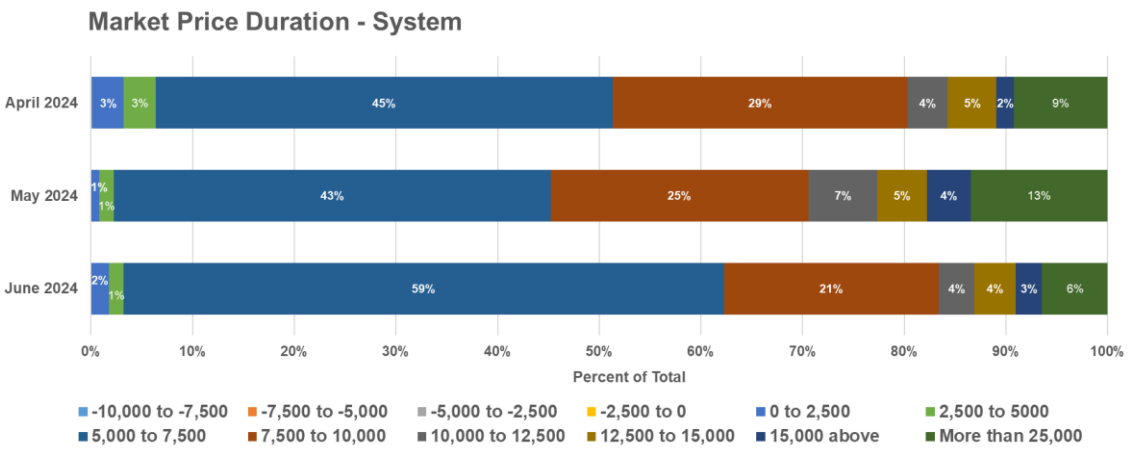

Figure 10. Price Distribution, 2nd Quarter 2024

Table 14 presents the tabular distribution of offer prices for the billing months covered in this quarter.

Table 14. Monthly Price Distribution, 2nd Quarter 2024

Price Range (Php/MWh)	% Distribution		
	April 2024	May 2024	June 2024
0 to 2,500	3%	1%	2%
2,500 to 5000	3%	1%	1%
5,000 to 7,500	45%	43%	59%
7,500 to 10,000	29%	25%	21%
10,000 to 12,500	4%	7%	4%
12,500 to 15,000	5%	5%	4%
15,000 above	2%	4%	3%
More than 25,000	9%	13%	6%

C. Congested Equipment

Equipment congestion in the grid can restrict the delivery available and cheaper power supply. When supply is limited due to congestion, prices typically rise as demand exceeds availability. Conversely, alleviating congestion and boosting the supply availability may lead to price stabilization or even reductions. In the second quarter of 2024, it was observed that two backbone lines, Maasin-Ubay and Samboan-Amlan, experienced congestion for over 3,000 trading intervals, or 12% of the total observations during the quarter, with congestion rates of 34% and 12%, respectively. Appendix B provides the complete list of congested equipment for the second quarter of 2024.

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.

As illustrated in Figure 11, the offer patterns of coal power plants remained relatively unchanged compared to the previous quarter. Majority of offers by coal power plants were concentrated within two price bands at the lowest end of the spectrum ranging from negative PHP10,000 to negative PHP7,000, which highly suggests that a substantial portion of their capacity is covered by bilateral contracts. Moreover, 34% of the capacity was offered within the 0 to 5,000 PHP/MWh range, representing the coal power plants serving as mid-merit power plants.

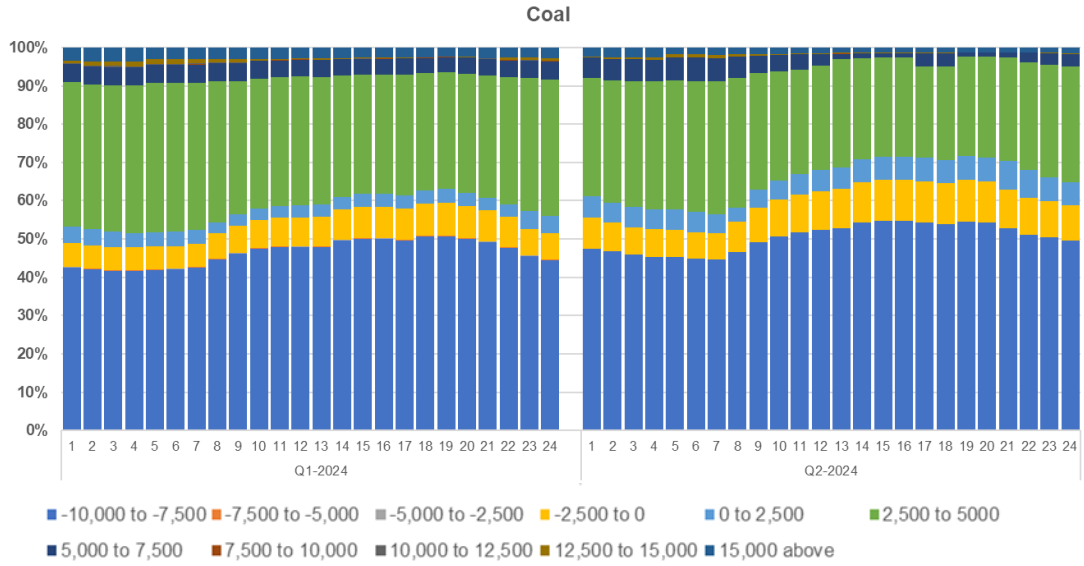

Figure 11. Coal Power Plants Offer Pattern – 1st and 2nd Quarter 2024

Similar to coal power plants, a significant portion of natural gas power plant offers was clustered within two specific price ranges from negative PHP10,000 to negative PHP7,000 at the lower end of the spectrum. This also highly suggests, similar with coal power plants, that a substantial portion of their capacity is likely covered by bilateral contracts wherein sellers have entered into long-term agreements with specific buyers, guaranteeing a fixed price for their electricity. However, compared to the previous quarter, natural gas power plants tended to offer their capacity at slightly higher prices this quarter, as illustrated in Figure 12.

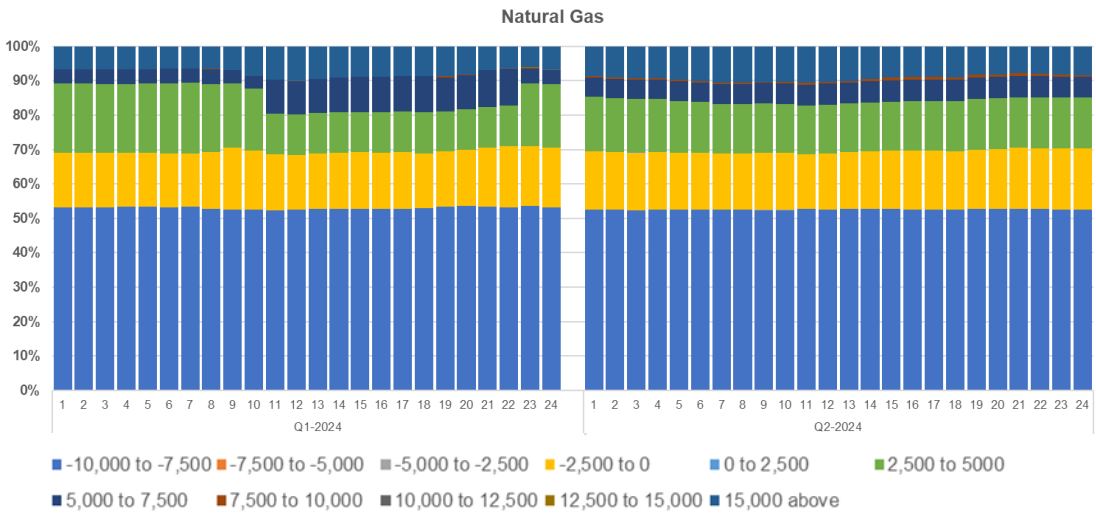

Figure 12. Natural Gas Power Plants Offer Pattern – 1st and 2nd Quarter 2024

The offer behavior of hydro power plants, as presented in Figure 13, underwent noticeable changes during the second quarter of 2024.

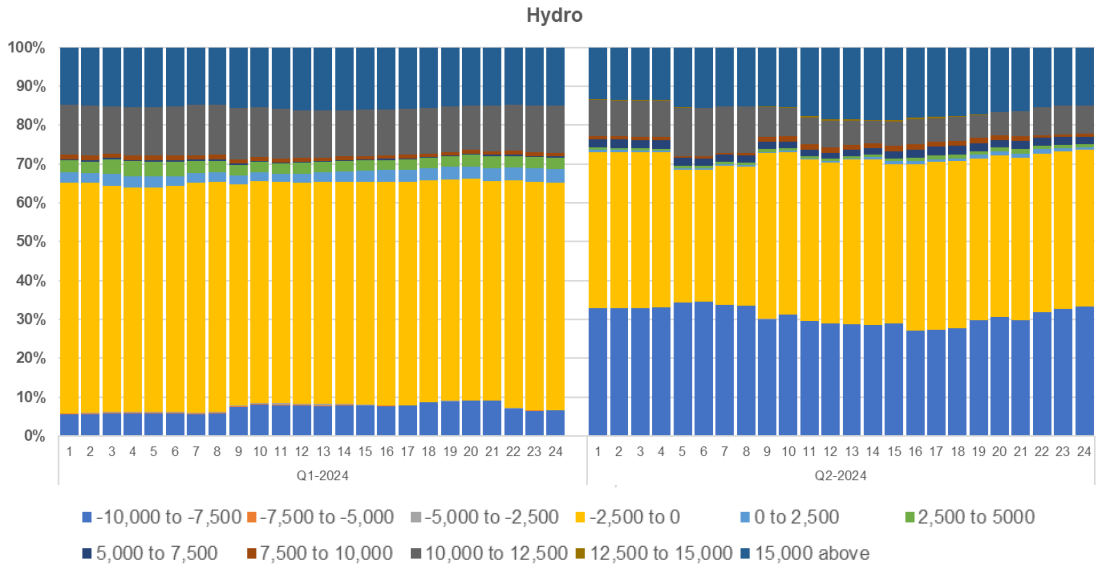

Figure 13. Hydro Power Plants Offer Pattern – 1st and 2nd Quarter 2024

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, which are often associated with the use of oil as a fuel. 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.

While the majority of offers from oil-based power plants were concentrated at the higher end of the price spectrum, Figure 14 indicates that around 5% of their offers fell within the -2,500 to 0 PHP/MWh range. This suggests that a small portion of these power plants' capacity was offered at negative despite of high fuel cost. Upon verification, these power plants manage their minimum initial loading (Pmin) in order to avoid being on outage. This could be brought about by the higher costs associated with shutting down and restarting the plants than the negative revenue from selling electricity.

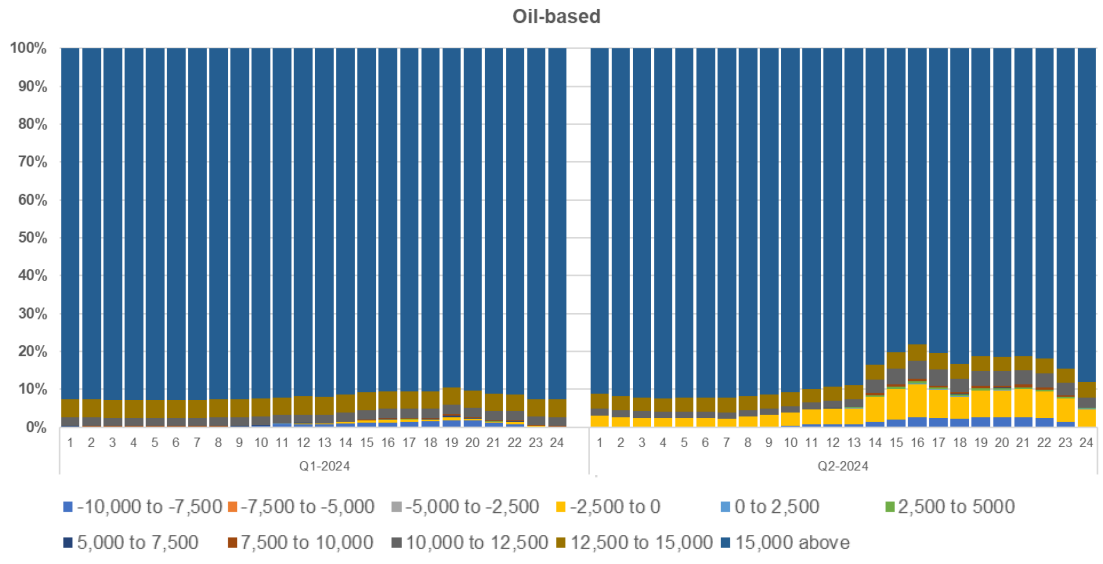

Figure 14. Oil-based Power Plants Offer Pattern – 1st and 2nd Quarter 2024

VI. Market Pricing Conditions

During the second quarter of 2024, the WESM was under normal pricing condition for 16,565 intervals or at 63% of the time. However, other intervals were placed under various market pricing conditions as follows:

A. Pricing Error Notice (PEN) [8]

There were observed system-wide and regional PEN issuances during the second quarter which were related to inappropriate input data that subsequently affected the market outcomes. The pricing errors during the subject billing quarter affected all regions for a total of 2,096 trading intervals. Regionally, the errors impacted 1 interval in Luzon, 1 in Mindanao, and 343 in Visayas-Mindanao regions.

B. Price Substitution Methodology[9]

Due to extreme cases of congestion in the electricity transmission network, PSM was implemented on a system-wide basis, affecting a total of 1,338 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 connecting the main regions experienced congestion thereby resulting in isolation and price separations. Regional PSM was noted to have been imposed in Luzon, impacting 138 trading intervals with the congestion or maximization of the Luzon-Visayas HVDC link. It was likewise noted that during the period, the link was scheduled on outage for the test and commissioning of deluge fire protection system at converter transformer phases A, B, and C that resulted in the isolation of the Luzon region. Moreover, Luzon and Mindanao regions were affected by the PSM for a total of 30 trading intervals coinciding with the MI in the Visayas region.

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 emergency conditions and force majeure affecting 260 trading intervals. This represents a significant 72% 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.

On 30 April 2024 the ERC has issued its Order under ERC Case No. 2024-017 MC which mandated that WESM shall be suspended in cases when there is a declaration of Red Alert by the National Grid Corporation of the Philippines. As a result, Market Suspension (MS) was declared in Luzon on 23-25, 27-30 May and 31 May to 03 June, affecting a total of 2,579 trading intervals while for Visayas on 23-24 May affecting 420 intervals.

[8] 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.

[9] 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.

D. Secondary Price Cap (SPC)[10]

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 3,921 trading intervals while regional impositions affected 6 trading intervals in Luzon, 11 trading intervals in Mindanao, and a total of 521 trading intervals in Visayas-Mindanao regions. The application of SPC tends to mitigate high market prices and caps the settlement price at PHP6,245/MWh but with provisions allowing the affected generators to file for additional compensation.

Table 15. PEN, PSM, MI, and Sec Cap Summary, 2nd Quarter 2024

	Luzon						Visayas						Mindanao					
	April 2024		May 2024		June 2024		April 2024		May 2024		June 2024		April 2024		May 2024		June 2024	
	Freq.	% of Time	Freq.	% of Time	Freq.	% of Time	Freq.	% of Time	Freq.	% of Time	Freq.	% of Time	Freq.	% of Time	Freq.	% of Time	Freq.	% of Time
PEN	1,738	19%	258	3%	128	1%	1,750	20%	236	3%	453	5%	1,750	20%	258	3%	459	5%
PSM	743	8%	407	5%	356	4%	607	7%	378	4%	353	4%	607	7%	405	5%	356	4%
SEC	1,709	19%	1,671	19%	589	7%	1,757	20%	1,675	19%	1,010	11%	1,757	20%	1,725	20%	1,013	11%
AP	41	0%	439	5%	1,569	18%	10	0%	598	7%	124	1%	10	0%	9	0%	2	0%

VII. Residual Supply

The figure below shows the hourly trend of the Market Residual Supply Index (Market RSI)[11] plotted against the corresponding number of pivotal supplier/s in the market.

During the period in review, the market resulted in RSIs ranging from 91.42% to 106.64%, averaging at 96.40%. The average market prices for intervals with RSI below 100% was PHP7,230/MWh, while those with RSIs above 100% was at PHP2,419/MWh. Moreover, it is also worth noting that when the maximum RSI was at 106.64%, the price was at negative PHP10,189/MWh while when the RSI is at its minimum of 91.42%, the price was at PHP29,499/MWh, underscoring the correlation between the supply and prices.

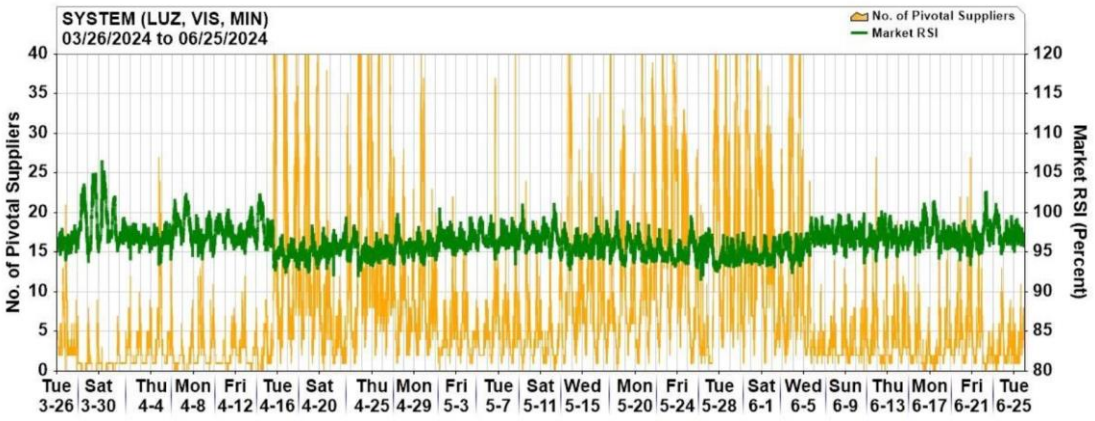

Figure 15. Market RSI vs. Pivotal Suppliers, 2nd Quarter 2024

[10] 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

[11] 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[12]

Provided in Figure 16 are the top pivotal suppliers in the market during the billing quarter in review, which was led by GNP Dinginin CFTPP, Ilijan NGPP, Sual CFTPP, and Sta. Rita NGPP for being pivotal suppliers for more than 50% of time. In line with the RSI discussion above, the presence of pivotal suppliers was observed this quarter for 25,444 generator-trading intervals which is significantly higher than the previous quarter of around 31%.

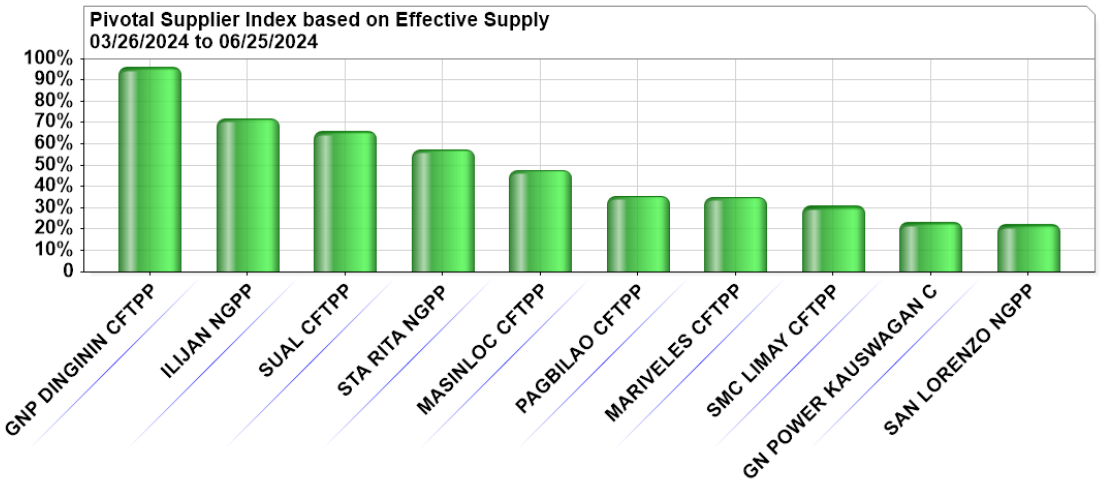

Figure 16. Top Pivotal Suppliers, 2nd Quarter 2024

IX. Capacity Factor

Examining the Capacity Factor which is used to measure the generating plant is utilized in each dispatch interval using its metered quantities, it was observed during the period in review that the capacity factor averaged at around 60%.

Looking on a per resource type basis, baseload power plants had the highest utilization rates for being dispatched in the WESM more frequently. Among the baseload power plants, coal power plants exhibited the highest utilization rates during the quarter. This is a shift from the previous quarters, where geothermal power plants typically held the top position in terms of utilization.

The capacity factor for the entire second quarter of 2024 reached 87.5%, representing a significant increase of 29% compared to the previous quarter. Notably, a 30% increase in the volume of offers from coal power plants scheduled for dispatch in the system during the second quarter of 2024 was observed, resulting in a capacity factor of 88%. This is highly attributed to the aforementioned prohibition of the DOE for planned outages to be scheduled during the summer months which are all covered in this period being reviewed.

It was observed that for previous top performers, the capacity factor of geothermal power plants had a 25% increase from the first half of the year until the second quarter of 2024, reaching 83.5%. Natural gas power plants consistently held the third position in terms of

[12] 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.

capacity factor during the second quarter of 2024, reaching 69.4%. This represents a significant increase of 21% compared to the previous quarter.

As discussed in the previous section, hydro power plants experienced a significant decrease in utilization during the second quarter of 2024, reaching only 22.5%. This decline was primarily attributed to the scheduled planned outages and forced outages resulting from low water supply caused by the El Niño phenomenon.

Unlike hydro power plants, oil-based power plants experienced a 7% increase in utilization, reaching 9.8% this quarter. However, it is important to note that during the review period, red and yellow alerts were declared, leading to their dispatch despite high-priced offers and the inherent characteristics of these power plants, such as having high operational costs.

Lastly, solar power plants are expected to see a significant rise in their capacity factors during the summer season. This is primarily due to the increased availability of sunlight during this period, which allows solar panels to generate more electricity. The recorded capacity factor of 24.3% for the second quarter of 2024 represents a 4.7% increase compared to the previous quarter and 3.5% higher compared to the year 2023[13], highlighting the growing contribution of solar power to the energy mix.

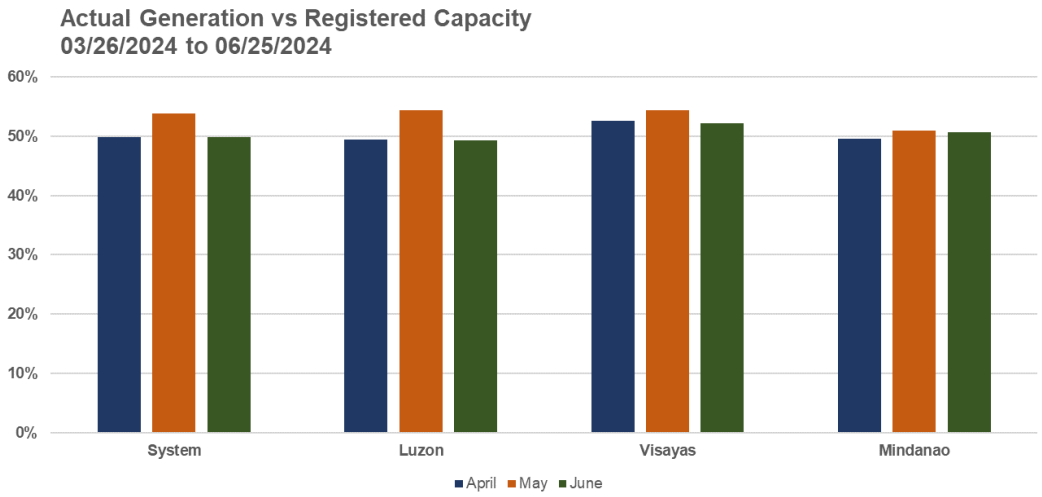

Figure 17. System Capacity Factor (Registered Capacity vs Actual Generation) – 2nd Quarter 2024

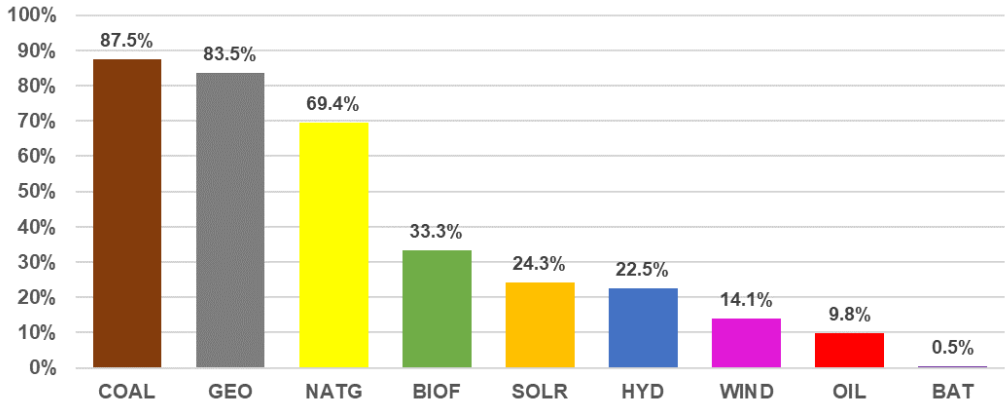

Figure 18. System Capacity Factor Per Resource Type (Registered Capacity vs Actual Generation) – 2nd Quarter 2024

[13] Annual Market Assessment Report for 2023

X. Generation Mix

Despite the issuance of a moratorium by the DOE on the installation of new coal power plants in the country, the share of this plant type increased from 51% in 2020 to 61% in the first half of 2024. Coal power plants still contributed to the largest portion of electricity generation across all monthly billing periods. It accounted for more than half of the total generation mix, underscoring the country's heavy reliance on this type of resource.

During the quarter under review, the average generation mix for all renewable energy (RE) resources was 18.6%. This marks a decrease from 22.8% in the previous quarter which was primarily due to the reduced output from hydro power plants affected by the El Niño phenomenon. 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 statistics highlighted the challenges faced in transitioning to renewable energy sources, especially when traditional base load power plants, like coal and natural gas continue to dominate the energy landscape. The reliance on these non-renewable resources not only impacts the generation mix but also poses challenges for achieving sustainability and reducing carbon emissions aimed in the Philippine Energy Plan.

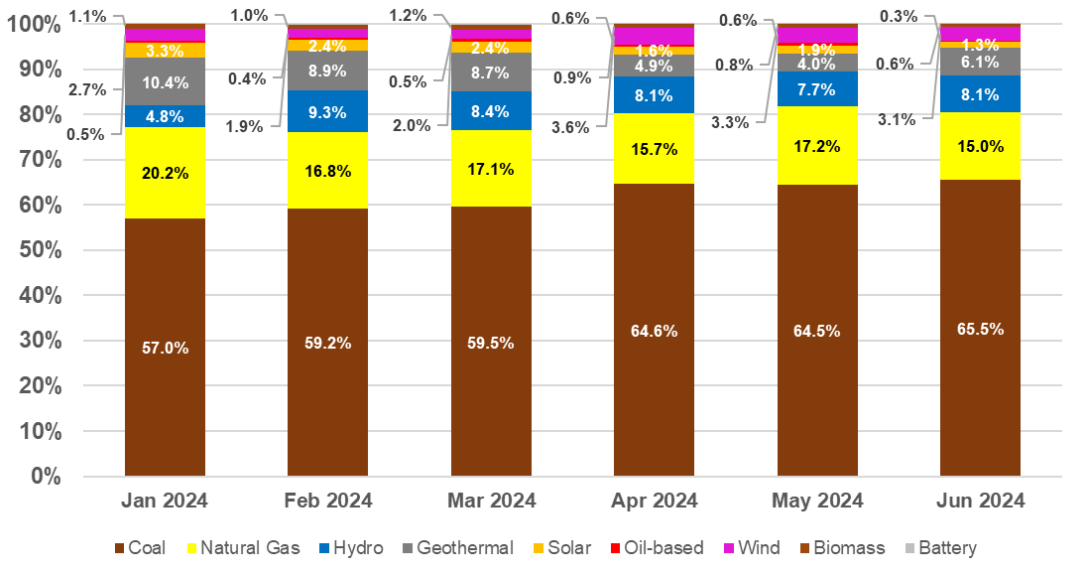

Figure 19. Generation Mix (Based on Metered Quantity) – 1st and 2nd Quarter 2024

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) holds the highest percentage share in registered capacity, indicating their dominant position in the market.

However, Aboitiz Power (AP) has consistently maintained a higher percentage in terms of offered capacity. This suggests that AP's power plants have been more readily

available and operational during the first two quarters of the year. The higher offered capacity from AP indicates their ability to meet market demands more effectively during this period.

Noticeably, SMC managed to achieve a higher actual generation share during the period. This implies that SMC's power plants have been more frequently dispatched, likely due to their lower offer prices in the market. Additionally, SMC's higher actual generation share is supported by their bilateral contracts to ensure a steady demand for their generated power.

This dynamics highlight the competitive landscape of the integrated market, where different strategies and operational efficiencies play crucial roles in determining market share and generation output. The interplay between registered capacity, offered capacity, and actual generation underscores the complexities of managing and optimizing power resources across the three major regions.

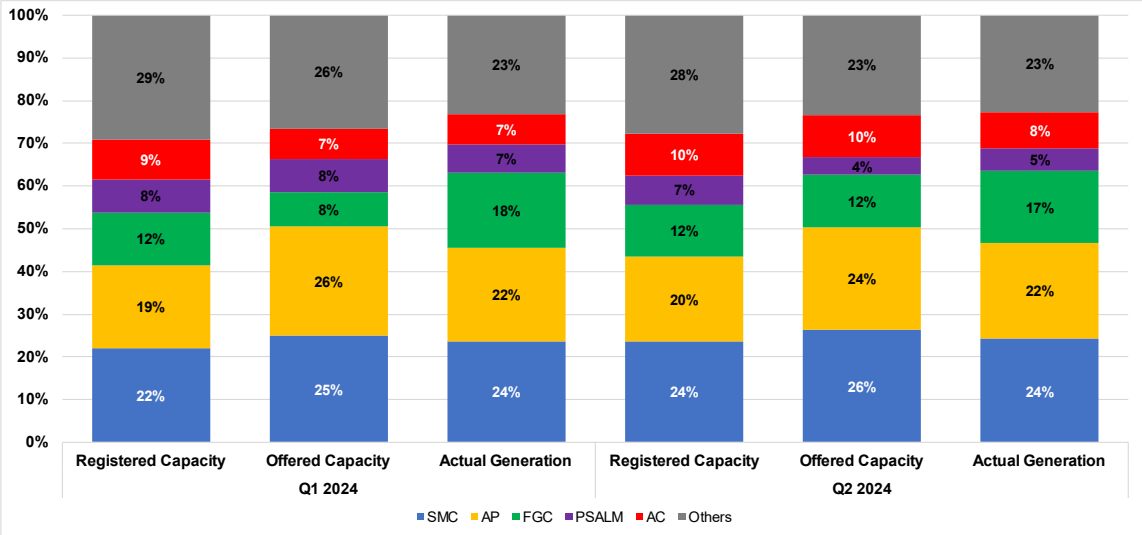

Figure 20. Market Share by Major Participant Group based on Registered Capacity, Offered Capacity, Actual Generation, 1st and 2nd Quarter of 2024

B. Herfindahl-Hirschman Index (HHI)

The Herfindahl-Hirschman Index (HHI)[14] by major participant grouping indicated a not concentrated market during the second quarter of 2024 in terms of registered capacity (net of outage). In terms of offered capacity, the market was moderately concentrated 37% of the time, brought about by the effects of changes in the availability of generators which subsequently affected the resulting market share. Meanwhile, based on metered quantity, the market is also moderately concentrated 54% of the time.

[14] 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.

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.

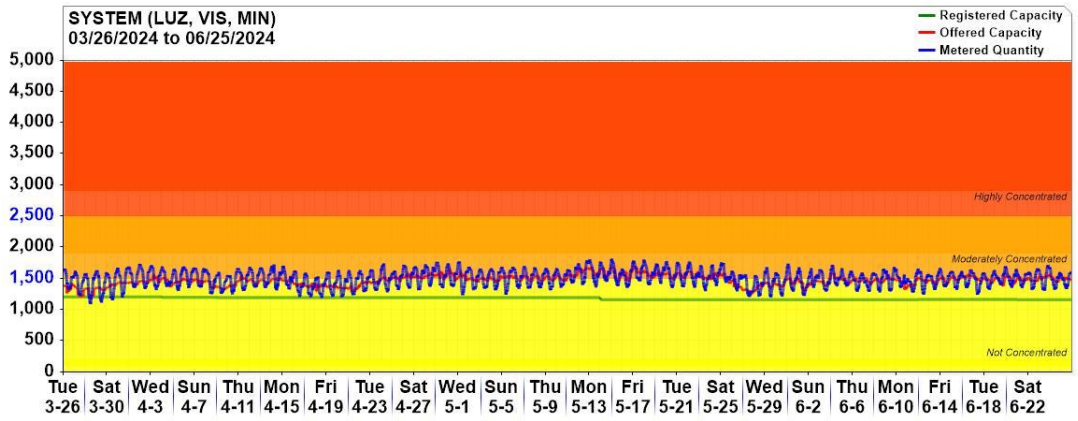

Figure 21. Hourly HHI based by Major Participant Grouping, 2nd Quarter 2024

XII. Spot Exposure

The generator-trading participants' spot market transactions increased significantly in the second quarter of 2024, ranging from approximately 21 to 32%, compared to only 19 to 25% in the previous quarter. However, most of the total energy injected into the grid was still covered by bilateral contracts. Moreover, the increase in spot exposure was mostly affected by the expired contracts of the generators with Distribution Utilities. Discussions with distribution utilities (DUs) with high spot exposures revealed that the increase was primarily attributed to the expiration of existing generator contracts. As a result, some DUs fulfilled their load requirements through the WESM. While DUs explored alternative contracting methods like the Competitive Selection Process (CSP), some were still compelled to enter into Emergency Power Supply Agreements (EPSAs) or continue purchasing electricity from the WESM. Figure 22 shows the daily spot exposure for generator-trading participants.

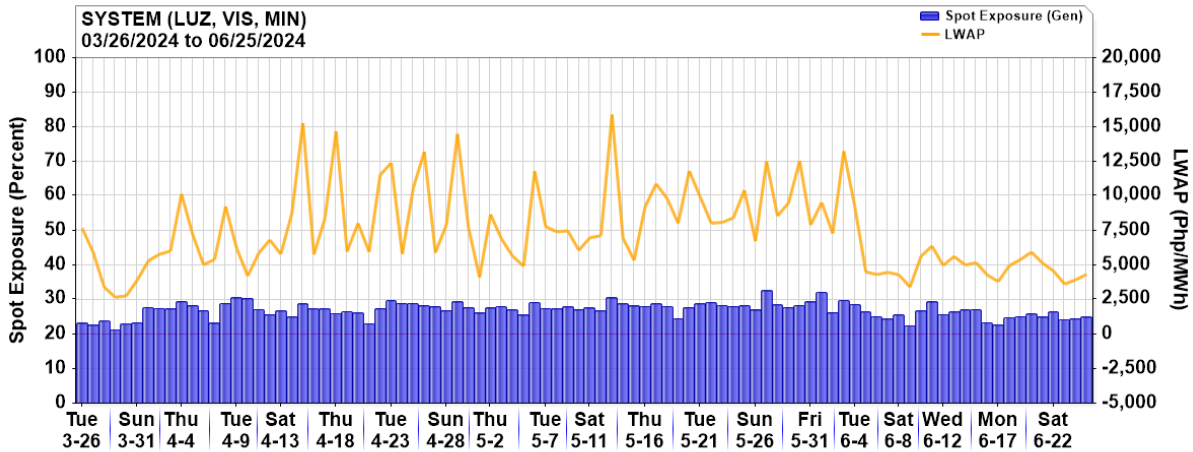

Figure 22. Daily Profile of Spot Market Exposure, 2nd Quarter 2024

Table 16 demonstrates a direct relationship between the spot exposure of generator-trading participants and the load-weighted average price. As the spot exposure of these participants increases, the average price also rises, and vice versa.

Table 16. Spot Exposure (Gen) vs LWAP, Day Type, 2nd Quarter 2024

Day Type	Average of Spot Exposure (Gen) (% of Time)	Average LWAP (in PHP/MWh)
Holidays	25.41	4,098.87
Weekdays	27.54	8,279.43
Weekends	26.03	6,392.38

Figure 23 provides a visual representation of the hourly fluctuations in spot exposure and the corresponding average hourly prices. It revealed that the spot exposure tends to be higher during peak hours, particularly from 1300h to 1700h and 1900h to 2200h, when market prices are high. Exposure to these prices can be addressed by efficient contracting strategy by the Distribution Utilities by availing the streamlined process of 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.

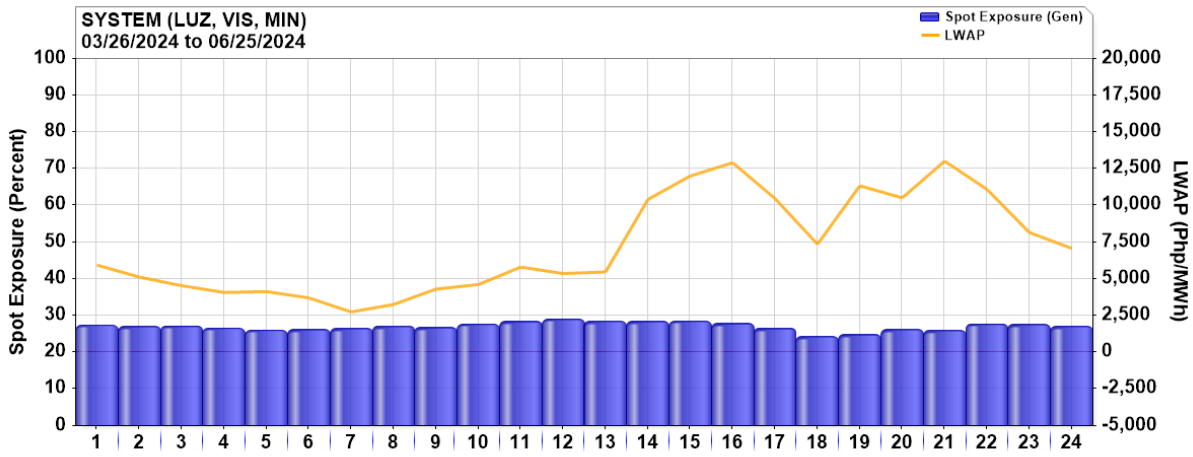

Figure 23. Hourly Profile of Spot Market Exposure, 2nd Quarter 2024

Appendix A. Major Plant Outage

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Day/s)	Outage Type	Remarks
Luzon							
BAT	03ALMNOS_BAT1	20	02/18/2024 9:30			Forced Outage	Unit problem on investigation.
BAT	01MAGAT_BAT	24	05/07/2024 15:08	05/22/2024 19:31	15	Forced Outage	Reported intermetent meter reading.
BAT	01LIMAY_BAT	40	05/11/2024 5:01			Forced Outage	Affected by the planned outage of Limay 100MVA T02.
BAT	03ALMNOS_BAT2	20	05/20/2024 21:48	05/21/2024 7:47	1	Forced Outage	Affected by the unplanned outage of Bay 69kV Bus 1.
BIOF	01VSGRIP_G01	5.4	01/24/2024 19:01	04/23/2024 8:02	90	Forced Outage	Emergency shutdown due to air pre-heater repair.
BIOF	01CLEANG_G01	10.8	02/13/2024 0:00			Forced Outage	Unplanned shutdown due to insufficient fuel.
BIOF	01GIFT_G02	6	03/15/2024 0:03	04/15/2024 23:59	31	Planned Outage	Planned outage until April 15 2024.
BIOF	01HYPGRN_G01	10	03/23/2024 18:13	04/01/2024 7:58	9	Forced Outage	Emergency shutdown due to oil leak at motor conveyor chain
BIOF	01GFII_G01	15.8	03/28/2024 11:03	04/01/2024 12:28	4	Forced Outage	Unplanned outage due to insufficient fuel.
BIOF	01GFII_G01	15.8	04/07/2024 11:30	04/08/2024 16:12	1	Forced Outage	Insufficient fuel.
BIOF	01GIFT_G02	6	04/17/2024 17:08	04/20/2024 14:50	3	Forced Outage	Emergency shutdown.(RECLASSIFIED FROM FORCE / OMC OUTAGE)
BIOF	01GFII_G01	15.8	04/28/2024 13:26	04/29/2024 14:00	1	Maintenance Outage	Weekend maintenance.
BIOF	01GFII_G01	15.8	05/05/2024 2:36	05/06/2024 16:48	1	Forced Outage	The unit tripped due to steam accumulation.
BIOF	01GIFT_G01	12	05/06/2024 0:53	05/07/2024 7:42	1	Forced Outage	Tripped due to block safety outlet pressure.
BIOF	01GFII_G01	15.8	05/11/2024 16:14	05/12/2024 1:14	1	Forced Outage	Insufficient Fuel.
BIOF	01GFII_G01	15.8	05/12/2024 13:03	05/13/2024 17:53	1	Forced Outage	Insufficient fuel
BIOF	01GFII_G01	15.8	05/15/2024 1:16	05/16/2024 3:11	1	Forced Outage	Insufficient Fuel
BIOF	01IPOWER_G02	10.8	05/16/2024 19:01	05/21/2024 8:00	5	Forced Outage	Immediate repair of main steam line.
BIOF	01GFII_G01	15.8	05/16/2024 23:04	05/18/2024 0:48	2	Forced Outage	Insufficicent fuel
BIOF	01GFII_G01	15.8	05/18/2024 20:04			Forced Outage	Insufficient fuel
BIOF	01GIFT_G02	6	05/23/2024 0:05	05/24/2024 8:10	1	Forced Outage	Affected by the planned outage of Cabanatuan-Fatima 69kV line.
BIOF	03BBEC_G01	5	05/25/2024 22:40	06/03/2024 11:12	9	Forced Outage	Travelling grate trouble.
BIOF	01HYPGRN_G01	10	05/26/2024 0:03	05/30/2024 10:37	4	Forced Outage	Insufficient fuel
BIOF	01IPOWER_G02	10.8	06/05/2024 14:56	06/06/2024 0:51	1	Forced Outage	Affected by tripping of Cabanatuan-Fatima 69kV Line
BIOF	01HYPGRN_G01	10	06/12/2024 0:01	06/13/2024 11:52	1	Forced Outage	Insufficient rice husk
BIOF	01HYPGRN_G01	10	06/14/2024 14:01			Forced Outage	Lack of Fuel
BIOF	01VSGRIP_G01	5.4	06/17/2024 8:32	06/19/2024 10:02	2	Forced Outage	Manual trip due to trouble on gasket condensate
COAL	03CALACA_G02	300	03/06/2024 23:51	03/31/2024 23:59	25	Planned Outage	Planned outage until May 23 2024.
COAL	01MPGC_U02	150	03/10/2024 23:46	03/26/2024 16:48	16	Maintenance Outage	Post Test & Commissioning Shutdown
COAL	01MARVEL_G01	316	03/22/2024 15:15	03/27/2024 13:09	5	Forced Outage	Emergency shutdown due to boiler tube leak
COAL	01SMC_G02	150	03/24/2024 15:47	03/26/2024 6:32	2	Forced Outage	Turbine trip due to tripping of IDF
COAL	01MSINLO_G03	335	03/26/2024 8:34	03/29/2024 23:59	3	Maintenance Outage	Miantenance outage
COAL	01SUAL_G02	647	03/26/2024 23:41	03/30/2024 5:57	4	Maintenance Outage	Maintenance Outage until March 31 2024
COAL	01MSINLO_G01	344	03/27/2024 2:30	05/13/2024 15:54	47	Forced Outage	Tripped. Reason under investigation.
COAL	01MSINLO_G03	335	03/30/2024 0:00	04/01/2024 1:52	2	Forced Outage	Extended Maintenance Outage.
COAL	03SLPGC_G02	149.6	03/30/2024 8:58	04/16/2024 6:44	17	Forced Outage	Tripped due to low furnace bed temperature resulting to coking.
COAL	03CALACA_G02	300	04/01/2024 0:00	05/22/2024 21:04	51	Forced Outage	Extended maintenance outage until May 23 2024.
COAL	01APEC_G01	25	04/01/2024 7:01	04/22/2024 23:59	21	Planned Outage	Planned Outage until April 22 2024.
COAL	01SMC_G04	150	04/02/2024 22:19	04/12/2024 14:18	10	Forced Outage	Furnace pressure high-high activation due to boiler tube leak
COAL	01MPGC_U02	150	04/05/2024 23:37	04/18/2024 9:07	13	Forced Outage	Tripped due to manual isolation of main steam.
COAL	03PAGBIL_G02	382	04/15/2024 21:23	04/21/2024 17:23	6	Forced Outage	Emergency shutdown due to possible tube leak.
COAL	03PAGBIL_G01	382	04/16/2024 6:27	04/21/2024 3:03	5	Forced Outage	Unplanned outage due to boiler tube leak.
COAL	01APEC_G01	25	04/23/2024 0:00	05/08/2024 16:20	15	Forced Outage	Extended Maintenance Outage until May 9 2024.
COAL	01MARVEL_G01	316	04/23/2024 15:30	04/24/2024 8:22	1	Forced Outage	Tripped due to activation of Bataan SIPS.
COAL	01MSINLO_G03	335	05/10/2024 20:06	05/11/2024 17:20	1	Forced Outage	Tripped due to water collecting tank level high high resulting to master fuel trip.
COAL	03QPPL_G01	460	05/11/2024 3:00	05/12/2024 8:00	1	Maintenance Outage	Maintenance outage until 0800H of May 12 2024
COAL	03QPPL_G01	460	05/12/2024 8:00	05/15/2024 5:47	3	Forced Outage	Boiler tube leak
COAL	03SLPGC_G01	150	05/12/2024 14:56	05/13/2024 1:05	1	Forced Outage	Tripped due to loss of MV supply
COAL	01MPGC_U03	150	05/13/2024 1:25	05/15/2024 19:47	2	Forced Outage	Master Fuel tripped while on going combustion tuning. On Commissioning Test
COAL	03QPPL_G01	460	05/16/2024 20:00	06/04/2024 16:29	19	Forced Outage	Unplanned shutdown due to broken spring support of turbine combine reheat valve.
COAL	01MPGC_U01	150	05/17/2024 21:35	05/27/2024 18:42	10	Forced Outage	Tripped due to high vibration of IDF
COAL	01SMC_G03	150	05/18/2024 21:54	05/23/2024 13:10	5	Forced Outage	Manually tripped due to furnace bed material agglomeration.
COAL	03CALACA_G02	300	05/22/2024 21:12	05/23/2024 2:55	1	Forced Outage	Tripped due to activation of generator protection.
COAL	01SUAL_G01	647	05/22/2024 23:41	05/23/2024 23:57	1	Forced Outage	Tripped due to re-heat governor valve closed
COAL	03PAGBIL_G02	382	05/26/2024 4:36	06/05/2024 22:39	10	Forced Outage	The unit de-synchronized from the grid and turned to house load operation.The unit eventually tripped at 0449H while attempting to synchronize. Affected by the passage of TS Aghon .
COAL	03PAGBIL_G01	382	05/26/2024 5:18	06/01/2024 13:53	6	Forced Outage	The unit tripped while on load stabilization. Affected by the passage of TS Aghon .
COAL	03PAGBIL_G03	420	05/26/2024 9:26	05/29/2024 12:57	3	Forced Outage	Affected by tripping of Pagbilao EHV-Pagbilao 230kV L1 & L2 due to passing of Tropical Storm Aghon .
COAL	03SBPL_G01	455	05/26/2024 13:05	05/27/2024 16:10	1	Forced Outage	CWP A & B trip while lowering load to minimim.Affected by Tropical Storm Aghon .
COAL	01MSINLO_G03	335	05/26/2024 13:19	05/27/2024 7:05	1	Forced Outage	Low boiler feed water flow.
COAL	01MSINLO_G03	335	05/29/2024 20:34	05/30/2024 12:41	1	Forced Outage	Air heater rotor guide speed low low alarm.
COAL	01SUAL_G01	647	06/02/2024 3:05	06/03/2024 21:04	1	Forced Outage	Emergency shutdown for BCP 1A and 1C motor cavity temp repair/strainer cleaning
COAL	01MSINLO_G01	344	06/07/2024 13:27	06/13/2024 18:38	6	Forced Outage	Emergency shutdown due to boiler tube leak.
COAL	03PAGBIL_G01	382	06/17/2024 5:52	06/19/2024 17:40	2	Forced Outage	Emergency shutdown due to boiler tube leak.
COAL	03PAGBIL_G01	382	06/20/2024 13:11	06/22/2024 15:03	2	Forced Outage	Emergency shutdown due to boiler tube leak.
GEO	03TIWI_A	60	11/30/2021 18:32	06/17/2024 18:09	930	Forced Outage	Steam supply diverted to Unit 2.
GEO	03MKBN_D	20	03/05/2024 0:00	03/27/2024 23:59	22	Planned Outage	Planned Outage until March 27 2024.
GEO	03BACMAN_U03	20	03/08/2024 0:02	03/31/2024 8:44	23	Planned Outage	Planned outage until March 31 2024.
GEO	03MKBN_D	20	03/28/2024 0:00	03/29/2024 5:49	1	Forced Outage	Extended outage.
GEO	03MKBN_B	58	04/01/2024 7:01	04/02/2024 1:30	1	Forced Outage	To facilitate correction of the Governing Valve problem.
GEO	03PALAYAN_G01	31	04/21/2024 3:27	04/22/2024 15:41	1	Forced Outage	On-going Test and Commissioning for new plants.
GEO	03PALAYAN_G01	31	04/25/2024 9:39	04/28/2024 15:29	3	Maintenance Outage	On-going Test and Commissioning for new plants.
GEO	03MKBN_D	20	05/14/2024 5:02	05/15/2024 6:47	1	Planned Outage	Planned outage.
GEO	03BACMAN_U01	60	05/15/2024 1:43	05/16/2024 5:51	1	Forced Outage	False activation of main condenser triple high level switch.
GEO	03PALAYAN_G01	31	05/15/2024 18:44	05/16/2024 20:59	1	Forced Outage	Emergency shutdown due to lube oil leak. On Commissioning Test
GEO	03PALAYAN_G01	31	05/20/2024 8:29	05/23/2024 22:51	3	Maintenance Outage	Maintenance outage. On Testing and Commissioning until June 8 2024.
GEO	03ORMAT_G01	3	05/20/2024 22:00	05/21/2024 4:42	1	Forced Outage	Affected by the unplanned outage of Bay 69kV Bus 1.
GEO	03ORMAT_G01	3	05/20/2024 22:00	05/21/2024 3:53	1	Forced Outage	Affected by the unplanned outage of Bay 69kV Bus 1.
GEO	03MKBN_E	20	05/20/2024 22:01	05/21/2024 3:13	1	Forced Outage	Affected by the unplanned outage of Bay 69kV Bus 1.
GEO	03MKBN_E	20	05/20/2024 22:01	05/21/2024 3:13	1	Forced Outage	Affected by the unplanned outage of Bay 69kV Bus 1.
GEO	03PALAYAN_G01	31	06/03/2024 5:24	06/05/2024 0:31	2	Maintenance Outage	On commissioning test.
GEO	03BACMAN_U03	20	06/09/2024 17:50	06/10/2024 0:58	1	Forced Outage	Tripped due to high temperature of turbine bearing.
GEO	03BACMAN_U03	20	06/10/2024 13:20	06/11/2024 13:29	1	Forced Outage	Tripped due to high bearing metal temparature.
GEO	03ORMAT_G01	3	06/10/2024 22:42	06/11/2024 3:54	1	Forced Outage	Affected by planned outage of Bay 69kV bus.
GEO	03ORMAT_G01	3	06/10/2024 22:42	06/11/2024 3:54	1	Forced Outage	Affected by planned outage of Bay 69kV bus.
GEO	03MKBN_E	20	06/10/2024 22:43	06/11/2024 3:55	1	Forced Outage	Affected by planned outage of Bay 69kV bus.
GEO	03MKBN_E	20	06/10/2024 22:43	06/11/2024 3:55	1	Forced Outage	Affected by planned outage of Bay 69kV bus.
GEO	03MKBN_A	57	06/14/2024 5:30	06/15/2024 0:39	1	Forced Outage	Affected by the planned outge of Bay-Makban Plant A.
GEO	03TIWI_A	60	06/18/2024 0:11			Forced Outage	Steam supply diverted to Unit 2.
GEO	03MEC_G01	32.9	06/19/2024 6:00	06/24/2024 10:04	5	Maintenance Outage	Maintenance Outage until June 23 2024.
GEO	03BACMAN_U01	60	06/23/2024 9:42			Forced Outage	Exciter Problem.
GEO	03PALAYAN_G01	31	06/23/2024 15:28	06/24/2024 14:04	1	Forced Outage	The unit tripped due to low make up water at cooling tower.
HYD	01ANGAT_M	50	11/02/2021 8:15	04/30/2024 23:59	910	Forced Outage	Draw-out of Main Unit 3 generator breaker.
HYD	01ANGAT_M	50	02/14/2022 0:00			Planned Outage	Planned outage.
HYD	01NMHC_G03	1.2	11/04/2023 18:04			Forced Outage	Insufficient water supply.
HYD	01ANGAT_A	6	11/06/2023 8:01			Planned Outage	Total Plant shutdown (Planned Outage)
HYD	01NMHC_G01	3.9	12/03/2023 0:01	05/15/2024 20:59	164	Forced Outage	Insufficient water supply.
HYD	01NMHC_G03	1.2	12/03/2023 0:01	05/16/2024 10:00	165	Forced Outage	Insufficient water supply.
HYD	01SLANGN_G01	2.4	12/11/2023 19:57			Forced Outage	Unplanned outage due to insufficient water supply.

Appendix A. Major Plant Outage

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Day/s)	Outage Type	Remarks
Luzon							
HYD	01BINENG_G01	19.8	12/23/2023 17:07	05/14/2024 16:38	143	Forced Outage	Outage due to low water supply
HYD	03KAL_G03	184.6	02/16/2024 0:00	05/03/2024 18:00	77	Planned Outage	Planned outage until May 5 2024.
HYD	01NMHC_G03	1.2	02/16/2024 0:00			Forced Outage	Insufficient water supply.
HYD	01AMPHAW_G01	12.5	03/01/2024 9:03	03/31/2024 23:59	30	Planned Outage	Planned outage until March 31 2024.
HYD	01MAGAT_U04	97	03/03/2024 7:03	04/04/2024 12:45	32	Planned Outage	Planned Outage until April 4 2024.
HYD	01NIABAL_G01	6	03/11/2024 8:05	06/13/2024 10:24	94	Forced Outage	On shutdown due to low water elevation.
HYD	01MAGAT_U03	97	03/19/2024 0:01	04/17/2024 15:58	29	Planned Outage	Planned outage until April 17 2024.
HYD	01MAGAT_U02	97	03/21/2024 7:01	04/20/2024 16:39	30	Planned Outage	Planned outage until April 21 2024.
HYD	01MAGAT_U01	97	03/21/2024 7:01	04/14/2024 11:55	24	Planned Outage	Planned outage until April 14 2024.
HYD	01MARIS_U02	4.25	03/21/2024 7:01	04/04/2024 12:50	14	Planned Outage	Planned Outage until April 4 2024.
HYD	01MARIS_U01	4.25	03/21/2024 7:01	04/04/2024 12:50	14	Planned Outage	Planned Outage until April 4 2024.
HYD	01BAKUN_G01	37	03/22/2024 0:00	03/28/2024 10:59	6	Forced Outage	Insufficient water supply.
HYD	01BAKUN_G01	37	03/23/2024 0:00	05/15/2024 16:03	53	Forced Outage	Insufficient water supply.
HYD	01BUTAO_G01	1.3	03/23/2024 11:17			Forced Outage	Insufficient water supply
HYD	01MAGAT_U04	97	04/04/2024 12:45	04/08/2024 9:46	4	Forced Outage	No IDR from NIA
HYD	01MARIS_U02	4.25	04/04/2024 12:50	05/07/2024 9:24	33	Forced Outage	No IDR from NIA
HYD	01MARIS_U01	4.25	04/04/2024 12:50	05/07/2024 9:44	33	Forced Outage	No IDR from NIA
HYD	01PNTBNG_U02	60	04/07/2024 7:01	04/29/2024 8:14	22	Forced Outage	Low water level.
HYD	01PNTBNG_U01	60	04/07/2024 7:01	04/29/2024 8:14	22	Forced Outage	Low water level.
HYD	01AMBUK_U03	37.5	04/07/2024 7:01	04/08/2024 23:16	1	Forced Outage	Declared unavailable due to low water elevation.
HYD	01BINGA_U04	35	04/07/2024 11:01	04/11/2024 8:56	4	Forced Outage	Declared unavailable due to low water elevation.
HYD	01BINGA_U01	35	04/07/2024 11:01	04/08/2024 7:50	1	Forced Outage	Declared unavailable due to low water elevation.
HYD	01BAKUN_G01	37	04/08/2024 3:17	04/29/2024 16:00	21	Forced Outage	Insufficient water supply.
HYD	01AMBUK_U02	37.5	04/09/2024 0:01	04/11/2024 8:56	2	Forced Outage	Declared unavailable due to hydrological constraints.
HYD	01BINGA_U02	35	04/09/2024 0:04	04/11/2024 8:56	2	Forced Outage	Declared unavailable due to hydrological constraints.
HYD	01AMBUK_U01	37.5	04/10/2024 12:01	04/26/2024 16:56	16	Forced Outage	Declared unavailable due to hydrological constraints.
HYD	01AMBUK_U02	37.5	04/12/2024 1:00	05/01/2024 3:06	19	Forced Outage	Low water elevation.
HYD	01BINGA_U04	35	04/12/2024 6:01	05/02/2024 23:51	20	Forced Outage	Unavailable due to reduced reservoir water level.
HYD	01BINGA_U01	35	04/12/2024 6:01	05/02/2024 23:51	20	Forced Outage	Unavailable due to reduced reservoir water level.
HYD	01MAGAT_U04	97	04/12/2024 21:05	04/15/2024 9:49	3	Forced Outage	Due to no Allowable Water Release (AWR).
HYD	01SABANG_G01	14.2	04/14/2024 0:00	04/18/2024 23:59	4	Planned Outage	Planned Outage
HYD	01BINGA_U03	35	04/14/2024 22:32	04/15/2024 9:34	1	Forced Outage	Unavailable due to reduced reservoir water level.
HYD	01BINGA_U02	35	04/14/2024 22:32	04/15/2024 9:34	1	Forced Outage	Unavailable due to reduced reservoir water level.
HYD	01SROQUE_U01	145	04/15/2024 0:00	04/27/2024 0:00	12	Planned Outage	Planned Outage Annual Preventive Maintenance until April 26 2024
HYD	01MAGAT_U03	97	04/17/2024 15:58	05/05/2024 17:51	18	Forced Outage	No IDR from NIA
HYD	01MAGAT_U04	97	04/20/2024 0:00	04/29/2024 10:01	9	Forced Outage	No IDR from NIA
HYD	01MAGAT_U01	97	04/20/2024 0:01	04/24/2024 14:38	4	Forced Outage	No IDR from NIA
HYD	01MAGAT_U02	97	04/20/2024 16:39	04/23/2024 9:47	3	Forced Outage	No IDR from NIA
HYD	01AMBUK_U03	37.5	04/26/2024 8:01	05/08/2024 3:54	12	Planned Outage	Planned Outage until May 8 2024
HYD	01MAGAT_U02	97	04/26/2024 21:00	04/29/2024 10:02	3	Forced Outage	No AWR..
HYD	01MAGAT_U01	97	04/26/2024 21:00	04/29/2024 13:14	3	Forced Outage	No AWR (allowable water release)
HYD	01PNTBNG_U02	60	04/29/2024 8:15	05/10/2024 23:59	11	Planned Outage	Planned Outage until May 10 2024
HYD	01PNTBNG_U01	60	04/29/2024 8:15	05/10/2024 23:59	11	Planned Outage	Planned Outage until May 10 2024
HYD	01ANGAT_M	50	05/01/2024 0:00	06/10/2024 16:06	40	Forced Outage	Extended outage after the modernization activities on the unit.
HYD	01AMBUK_U01	37.5	05/01/2024 3:10	05/07/2024 8:00	6	Forced Outage	Declared unavailable due to hydrological constraints.
HYD	01SROQUE_U02	145	05/06/2024 0:01			Planned Outage	Planned outage until May 17 2024.
HYD	03CALIRY_G01	14	05/06/2024 8:00	05/11/2024 23:05	5	Maintenance Outage	Maintenance outage until 1700H of May 11 2024.
HYD	03CALIRY_G01	14	05/06/2024 8:00	05/11/2024 23:05	5	Maintenance Outage	Maintenance outage until 1700H of May 11 2024.
HYD	01BAKUN_G01	37	05/07/2024 6:17	05/08/2024 16:40	1	Forced Outage	The unit tripped due to loss of 48Vdc supply.
HYD	03KAL_G01	183	05/09/2024 0:00	05/12/2024 18:00	3	Planned Outage	Semi-Annual Preventive Maintenance
HYD	01AMBUK_U01	37.5	05/10/2024 8:01	05/15/2024 23:26	5	Planned Outage	Planned Outage
HYD	01PNTBNG_U02	60	05/11/2024 0:00	05/12/2024 14:43	1	Forced Outage	Extended Maintenance Outage
HYD	01PNTBNG_U01	60	05/11/2024 0:00	05/12/2024 14:43	1	Forced Outage	Extended Maintenance Outage
HYD	01AMBUK_U02	37.5	05/13/2024 6:00	05/14/2024 10:01	1	Forced Outage	Low water elevation.
HYD	03BOTOCA_G01	10	05/13/2024 8:00	05/17/2024 19:15	4	Planned Outage	Planned Outage until May 17 2024
HYD	03BOTOCA_G01	10	05/13/2024 8:00	05/17/2024 19:15	4	Planned Outage	Planned Outage until May 17 2024
HYD	01PNTBNG_U02	60	05/14/2024 0:00			Forced Outage	No IDR.
HYD	01PNTBNG_U01	60	05/14/2024 0:00			Forced Outage	No IDR.
HYD	01AMBUK_U01	37.5	05/15/2024 23:26	05/16/2024 8:00	1	Forced Outage	Low water elevation.
HYD	01AMBUK_U03	37.5	05/18/2024 8:01	05/22/2024 23:59	4	Planned Outage	Planned Outage until May 22 2024
HYD	01AMBUK_U02	37.5	05/18/2024 8:01	05/30/2024 4:32	12	Planned Outage	Planned Outage until May 30 2024
HYD	01AMBUK_U01	37.5	05/18/2024 8:01	05/22/2024 23:59	4	Planned Outage	Planned Outage until May 22 2024
HYD	01MATUNO_G01	8.7	05/18/2024 17:01	05/21/2024 14:06	3	Forced Outage	High Turbine bearing vibration.
HYD	01BINGA_U01	35	05/19/2024 18:01	05/26/2024 15:56	7	Forced Outage	Declared unavailable due to hydrological constraints.
HYD	01BINGA_U03	35	05/19/2024 21:01	05/21/2024 18:50	2	Forced Outage	Declared unavailable due to hydrological constraints.
HYD	03KAL_G02	183	05/20/2024 14:15	05/21/2024 1:51	1	Forced Outage	Failed to start due to excitattion problem.
HYD	01MASIWA_G01	12	05/21/2024 17:01			Forced Outage	No IDR
HYD	01BINGA_U02	35	05/21/2024 17:14	05/22/2024 4:38	1	Forced Outage	13.8kV overcurrent.
HYD	01MATUNO_G01	8.7	05/21/2024 17:14	05/22/2024 11:07	1	Forced Outage	Affected by the unplanned outage of Ambuklao-Binga 230kV lines 1 and 2.
HYD	01BINGA_U02	35	05/22/2024 4:39	05/25/2024 0:01	3	Forced Outage	Hydrological constraint.
HYD	01AMBUK_U03	37.5	05/23/2024 0:00	05/25/2024 6:53	2	Forced Outage	Extended Outage until May 25 2024.
HYD	01AMBUK_U01	37.5	05/23/2024 0:00	05/25/2024 6:53	2	Forced Outage	Extended Outage until May 25 2024.
HYD	01BINGA_U04	35	05/23/2024 22:01	05/26/2024 15:56	3	Forced Outage	Hydrological constraint
HYD	01BINGA_U03	35	05/23/2024 22:01	05/25/2024 0:01	2	Forced Outage	Hydrological constraint.
HYD	03KAL_G04	185	05/24/2024 0:01	05/26/2024 0:01	2	Forced Outage	Unavailable as generator due to low Caliraya Dam elevation.
HYD	03KAL_G01	183	05/24/2024 8:01			Forced Outage	Unavailable as generator due to low Caliraya Dam elevation.
HYD	01ANGAT_M	50	05/24/2024 11:38	05/30/2024 5:20	6	Forced Outage	No NIA IDR allocation.
HYD	01ANGAT_M	50	05/24/2024 11:38	05/30/2024 5:20	6	Forced Outage	No NIA IDR allocation.
HYD	03KAL_G02	183	05/25/2024 0:00	05/26/2024 0:00	1	Forced Outage	Unavailable as generator due to low Caliraya Dam elevation.
HYD	01MATUNO_G01	8.7	05/25/2024 16:08	05/26/2024 11:24	1	Forced Outage	On-going test and commissioning.(RECLASSIFIED FROM FORCE / OMC OUTAGE)(RECLASSIFIED FROM FORCE / OMC OUTAGE)
HYD	03TIBAG_G01	5.8	05/26/2024 16:25			Forced Outage	Affected by line tripping during the passage of TS Aghon. The generator is under test and commissioning.
HYD	01SROQUE_U03	145	05/27/2024 0:01	06/07/2024 0:00	11	Planned Outage	Planned Outage until June 10 2024
HYD	01SROQUE_U02	145	05/27/2024 0:01	06/07/2024 0:00	11	Planned Outage	Planned Outage until June 10 2024
HYD	01SROQUE_U01	145	05/27/2024 0:01	06/07/2024 0:00	11	Planned Outage	Planned Outage until June 10 2024.
HYD	01ANGAT_M	50	05/31/2024 17:00	06/03/2024 7:34	3	Forced Outage	Consumed 6cms NIA water allocation.
HYD	01ANGAT_M	50	05/31/2024 17:00	06/03/2024 7:34	3	Forced Outage	Consumed 6cms NIA water allocation.
HYD	01AMBUK_U02	37.5	06/01/2024 0:01	06/09/2024 0:01	8	Forced Outage	Hydrological constraint.
HYD	03KAL_G03	184.6	06/01/2024 3:18	06/02/2024 5:20	1	Forced Outage	Low Caliraya Dam Elevation.
HYD	03KAL_G01	183	06/01/2024 3:18	06/02/2024 5:20	1	Forced Outage	Low Caliraya Dam Elevation.
HYD	01BINENG_G01	19.8	06/02/2024 4:11	06/05/2024 14:56	3	Forced Outage	Insufficient water supply.
HYD	01MATUNO_G01	8.7	06/03/2024 19:24	06/04/2024 9:45	1	Forced Outage	On-going test and commissioning.
HYD	03KAL_G03	184.6	06/04/2024 0:01	06/09/2024 5:40	5	Planned Outage	Semi Annual PM.
HYD	01ANGAT_M	50	06/04/2024 8:22	06/10/2024 0:11	6	Forced Outage	Unit is available but with no IDR from NIA.
HYD	01ANGAT_M	50	06/04/2024 8:22	06/10/2024 0:11	6	Forced Outage	Unit is available but with no IDR from NIA.
HYD	01MATUNO_G01	8.7	06/04/2024 10:48	06/05/2024 9:20	1	Forced Outage	Stop generator turbine part of testing. (On-going test and commissioning)
HYD	03MAJAY_G01	2.19	06/06/2024 10:35	06/07/2024 17:44	1	Forced Outage	Line feeder trouble
HYD	01BINGA_U02	35	06/07/2024 8:01	06/15/2024 3:33	8	Planned Outage	Planned Outage until June 19 2024
HYD	01BINGA_U01	35	06/07/2024 8:01	06/15/2024 0:13	8	Planned Outage	Planned Outage until June 19 2024
HYD	01BINENG_G01	19.8	06/09/2024 4:36	06/10/2024 18:18	1	Forced Outage	Insufficient water flow.
HYD	01MATUNO_G01	8.7	06/10/2024 7:15	06/13/2024 10:48	3	Forced Outage	Stop generator turbine part of testing. (On-going 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
Luzon							
HYD	01ANGAT_M	50	06/10/2024 8:00	06/19/2024 10:13	9	Planned Outage	Planned Outage until December 31 2024.
HYD	01BINENG_G01	19.8	06/11/2024 0:52	06/14/2024 22:26	3	Forced Outage	Insufficient water supply
HYD	01BINENG_G01	19.8	06/15/2024 17:17	06/17/2024 14:19	2	Forced Outage	Insufficient water supply
HYD	03KAL_G03	184.6	06/21/2024 0:00			Maintenance Outage	Maintenance Outage until June 30 2024.
HYD	01BINENG_G01	19.8	06/21/2024 8:07	06/24/2024 17:56	3	Forced Outage	The units were declared unavailable due to insufficient water supply.
HYD	01MATUNO_G01	8.7	06/24/2024 8:05			Forced Outage	Emergency shutdown to conduct repair of tunnel inlet.
NATG	03SNGAB_G01	420	02/21/2024 23:34	03/31/2024 23:59	39	Planned Outage	Planned Outage until March 31 2024.
NATG	03ILIJAN_G02	190	03/13/2024 18:38	03/26/2024 9:43	13	Forced Outage	Gas restriction
NATG	03ILIJAN_G02	220	03/23/2024 16:25	03/26/2024 7:56	3	Forced Outage	Fuel gas supply interruption.
NATG	03ILIJAN_G02	190	03/23/2024 16:48	03/26/2024 6:12	3	Forced Outage	Fuel gas supply interruption.
NATG	03ILIJAN_G01	190	03/23/2024 17:16	04/05/2024 8:05	13	Forced Outage	Fuel gas supply interruption.
NATG	03ILIJAN_G01	220	03/23/2024 17:27	03/26/2024 16:59	3	Forced Outage	Fuel gas supply interruption.
NATG	03ILIJAN_G01	190	03/23/2024 17:38	03/26/2024 14:59	3	Forced Outage	Fuel gas supply interruption.
NATG	03SNGAB_G01	420	04/01/2024 0:00	04/04/2024 8:52	3	Forced Outage	Extended Outage.
NATG	03ILIJAN_G01	220	04/04/2024 16:26	04/05/2024 9:20	1	Forced Outage	Fuel gas supply interruption(RECLASSIFIED FROM FORCE / OMC OUTAGE)
NATG	03ILIJAN_G02	220	04/04/2024 16:26	04/05/2024 0:44	1	Forced Outage	Fuel gas supply interruption
NATG	03ILIJAN_G02	190	04/04/2024 16:26	04/05/2024 2:59	1	Forced Outage	Fuel gas supply interruption
NATG	03ILIJAN_G01	190	04/04/2024 16:26	04/10/2024 7:52	6	Forced Outage	Fuel gas supply interruption
NATG	03SNGAB_G01	420	04/06/2024 6:34	04/07/2024 15:20	1	Forced Outage	Shutdown initiated by First Gas since no BCQ requirement from Meralco.
NATG	03SNGAB_G01	420	04/07/2024 21:19	04/08/2024 13:38	1	Forced Outage	Tripped due to actuation of boiler protection.
NATG	03ILIJAN_G01	220	04/08/2024 9:53	04/10/2024 9:17	2	Forced Outage	Tripped due to LNG supply trouble.
NATG	03ILIJAN_G01	190	04/08/2024 9:53	04/22/2024 16:29	14	Forced Outage	Tripped due to LNG supply trouble.
NATG	03ILIJAN_G02	220	04/08/2024 19:34	04/10/2024 0:58	2	Forced Outage	Tripped due to fuel gas pressure low.
NATG	03ILIJAN_G02	190	04/08/2024 19:34	04/10/2024 2:59	2	Forced Outage	Tripped due to fuel gas pressure low.
NATG	03ILIJAN_G02	190	04/08/2024 19:34	04/09/2024 23:44	1	Forced Outage	Tripped due to fuel gas pressure low.
NATG	03STA-RI_G04	264	04/14/2024 11:55	04/17/2024 3:03	3	Forced Outage	Tripped due to combustion chamber problem.
NATG	03ILIJAN_G01	220	04/21/2024 23:37	04/22/2024 4:47	1	Forced Outage	Tripped by Combustor Pressure Fluctuation Monitoring.
NATG	03ILIJAN_G01	190	04/21/2024 23:37	04/22/2024 4:47	1	Forced Outage	Tripped due to Combustor Pressure Fluctuation Monitoring.
NATG	03STA-RI_G06	265	05/04/2024 12:11	05/07/2024 3:06	3	Forced Outage	Tripped by GT protection.
NATG	03ILIJAN_G01	190	05/17/2024 23:37	05/21/2024 10:18	4	Forced Outage	Emergency shutdown due to gas restriction
NATG	03AVION_U02	45.8	05/23/2024 11:37	05/25/2024 18:23	2	Forced Outage	Unplanned outage due to high pressure compressor bleed system trouble.
NATG	03ILIJAN_G01	190	05/25/2024 0:31	05/28/2024 4:55	3	Forced Outage	Emergency shutdown due to gas restriction
NATG	03ILIJAN_G02	190	05/25/2024 1:17	05/28/2024 12:26	3	Forced Outage	Emergency shutdown due to gas restriction
NATG	03ILIJAN_G02	220	05/25/2024 16:36	05/28/2024 11:06	3	Forced Outage	The LNG Terminal has to momentarily stop the gas supply as precautionary measure to the passage of TD AGHON.
NATG	03ILIJAN_G01	220	05/25/2024 16:36	05/28/2024 2:34	3	Forced Outage	The LNG Terminal has to momentarily stop the gas supply as precautionary measure to the passage of TD AGHON.
NATG	03ILIJAN_G02	190	05/25/2024 16:46	05/28/2024 9:33	3	Forced Outage	The LNG Terminal has to momentarily stop the gas supply as precautionary measure to the passage of TD AGHON.
NATG	03ILIJAN_G01	190	05/25/2024 16:59	05/27/2024 22:46	2	Forced Outage	The LNG Terminal has to momentarily stop the gas supply as precautionary measure to the passage of TD AGHON.
NATG	03AVION_U02	45.8	05/25/2024 21:43	05/26/2024 12:17	1	Forced Outage	High pressure compressor bleed system trouble.
NATG	03AVION_U02	45.8	05/26/2024 19:09	06/01/2024 20:00	6	Forced Outage	High pressure compressor bleed system trouble.
NATG	03STA-RI_G05	265	05/27/2024 17:28	05/31/2024 20:19	4	Forced Outage	Overheated expansion belows connecting gas turbine exhaust to boiler.
NATG	03ILIJAN_G01	190	05/27/2024 22:55	05/28/2024 1:05	1	Forced Outage	The unit tripped while on load stabilization.
NATG	03ILIJAN_G01	220	06/01/2024 11:08	06/02/2024 2:06	1	Forced Outage	Tripped due to LNG fuel terminal restriction.
NATG	03ILIJAN_G01	190	06/01/2024 11:08	06/02/2024 3:57	1	Forced Outage	Tripped due to LNG fuel terminal restriction.
NATG	03ILIJAN_G01	190	06/01/2024 11:08	06/02/2024 1:05	1	Forced Outage	Tripped due to LNG fuel terminal restriction.
NATG	03STA-RI_G05	265	06/03/2024 19:56	06/11/2024 17:38	8	Forced Outage	Emergency shutdown due to fire at expansion joint.
NATG	03ILIJAN_G02	220	06/10/2024 17:17	06/11/2024 5:22	1	Forced Outage	Isolated due to tripping of Ilijan-Tayabas and Ilijan-Dasmarinas (Ilijan side only) 500kV Lines
NATG	03ILIJAN_G01	220	06/10/2024 17:17	06/11/2024 15:22	1	Forced Outage	Isolated due to tripping of Ilijan-Tayabas and Ilijan-Dasmarinas (Ilijan side only) 500kV Lines
NATG	03ILIJAN_G02	190	06/10/2024 17:17	06/11/2024 7:46	1	Forced Outage	Isolated due to tripping of Ilijan-Tayabas and Ilijan-Dasmarinas (Ilijan side only) 500kV Lines
NATG	03ILIJAN_G02	190	06/10/2024 17:17	06/11/2024 4:05	1	Forced Outage	Isolated due to tripping of Ilijan-Tayabas and Ilijan-Dasmarinas (Ilijan side only) 500kV Lines
NATG	03ILIJAN_G01	190	06/10/2024 17:17	06/11/2024 14:22	1	Forced Outage	Isolated due to tripping of Ilijan-Tayabas and Ilijan-Dasmarinas (Ilijan side only) 500kV Lines
NATG	03ILIJAN_G01	190	06/10/2024 17:17	06/11/2024 17:07	1	Forced Outage	Isolated due to tripping of Ilijan-Tayabas and Ilijan-Dasmarinas (Ilijan side only) 500kV Lines
NATG	03STA-RI_G05	265	06/19/2024 0:06	06/20/2024 19:34	1	Forced Outage	The unit tripped due to the activation of condenser protection.
OIL	03MALAYA_G01	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
OIL	03RCBMI_G01	5.5	12/06/2023 9:02	04/04/2024 14:36	120	Forced Outage	Declared unavailable due to water leak at turbo charger
OIL	03RCBMI_G02	5.5	04/02/2024 0:41	04/05/2024 18:25	3	Forced Outage	Lub oil leak at spring vellus.
OIL	03RCBMI_G01	5.5	04/04/2024 19:20			Forced Outage	Declared unavailable due to unsual sound and smoke came out at turbocharger side
OIL	03RCBMI_G02	5.5	04/17/2024 12:32			Forced Outage	Fuel seperator failure
OIL	03MALAYA_G02	130	04/18/2024 20:00			Forced Outage	Shutdown due to furnace pressure high.
OIL	01LIMAY_U07	60	05/19/2024 1:13	05/20/2024 15:44	1	Forced Outage	Manually tripped due to servo valve malfunction
OIL	01LIMAY_U01	60	05/20/2024 22:36	05/21/2024 1:58	1	Forced Outage	Affected by the tripping of Unit Main Transformer.
OIL	01LIMAY_U07	60	05/28/2024 20:58			Forced Outage	Tripped due to high vibration alarm.
OIL	01LIMAY_U07	60	05/28/2024 20:58			Forced Outage	Tripped due to high vibration alam.
OIL	02TMOBIL_G04	52	06/01/2024 19:12	06/02/2024 3:49	1	Forced Outage	Due to Low voltage for replacement and scada failure
OIL	03INGRID_GS6	28	06/01/2024 23:05	06/02/2024 10:45	1	Forced Outage	Unavailable due to fuel constraint.
OIL	03INGRID_GS4	28	06/01/2024 23:05	06/02/2024 10:45	1	Forced Outage	Unavailable due to fuel constraint.
OIL	03INGRID_GS1	28	06/01/2024 23:05	06/02/2024 9:05	1	Forced Outage	Unavailable due to fuel constraint.
OIL	03INGRID_GS5	22	06/01/2024 23:05	06/02/2024 10:45	1	Forced Outage	Unavailable due to fuel constraint.
OIL	03INGRID_GS3	22	06/01/2024 23:05	06/02/2024 9:05	1	Forced Outage	Unavailable due to fuel constraint.
OIL	03INGRID_GS2	22	06/01/2024 23:05	06/02/2024 9:05	1	Forced Outage	Unavailable due to fuel constraint.
OIL	03INGRID_GS6	28	06/24/2024 23:54	06/25/2024 2:54	1	Forced Outage	Affected by the emergency shutdown of Malaya 230kV Bus A
OIL	03INGRID_GS4	28	06/24/2024 23:54	06/25/2024 2:54	1	Forced Outage	Affected by the emergency shutdown of Malaya 230kV Bus A
OIL	03INGRID_GS1	28	06/24/2024 23:54	06/25/2024 2:54	1	Forced Outage	Affected by the emergency shutdown of Malaya 230kV Bus A
OIL	03INGRID_GS5	22	06/24/2024 23:54	06/25/2024 2:54	1	Forced Outage	Affected by the emergency shutdown of Malaya 230kV Bus A
OIL	03INGRID_GS3	22	06/24/2024 23:54	06/25/2024 2:54	1	Forced Outage	Affected by the emergency shutdown of Malaya 230kV Bus A
OIL	03INGRID_GS2	22	06/24/2024 23:54	06/25/2024 2:54	1	Forced Outage	Affected by the emergency shutdown of Malaya 230kV Bus A
SOLR	01CONSOL_G01	76	04/03/2024 5:15	04/04/2024 4:52	1	Forced Outage	Affected by line outage of Concepcion-Concepcion Solar 69kV Line.
SOLR	01ZAMSOL_G01	4.8	04/22/2024 0:00	05/07/2024 12:34	15	Forced Outage	Reported problem in feeder connection IEMOP.
SOLR	03ADISOL_G01	1.6	05/02/2024 0:00	05/06/2024 10:54	4	Forced Outage	Inverter problem.
SOLR	03SOLACE_G01	89.4	05/20/2024 21:48	05/21/2024 6:00	1	Maintenance Outage	Solarace requested shutdown to facilitate maintenance activities.
SOLR	01LAOSOL_G01	58.6	05/21/2024 10:00	05/28/2024 16:39	7	Maintenance Outage	On-going test and commssioning for new plants.
SOLR	03SOLACE_G01	89.4	06/10/2024 22:44	06/11/2024 3:58	1	Forced Outage	Affected by planned outage of Bay 69kV Bus.
WIND	01NWIND_G01	32.4	06/14/2024 19:36	06/15/2024 10:45	1	Forced Outage	Affected by the tripping of Laoag-Bangui 69kV Line.
WIND	01NWIND_G02	18.8	06/14/2024 19:36	06/15/2024 12:00	1	Forced Outage	Affected by the tripping of Laoag-Bangui 69kV Line.
Visayas							
BIOF	06SCBE_G01	7.4	03/31/2023 10:35			Forced Outage	Plant shutdown
BIOF	06HPCO_G01	2	11/12/2023 20:00			Forced Outage	Defective auxiliary of vibration meter.
BIOF	06FFHC_G01	9	03/25/2024 2:08	03/26/2024 3:37	1	Maintenance Outage	Weekly maintenance.
BIOF	06HPCO_G02	9.5	03/26/2024 0:19	03/28/2024 14:05	2	Forced Outage	Islanding operation due to grid disturbance(tripping of 69KV Bacolod-Reclamation Line).
BIOF	06NTNEGB_G01	25	03/26/2024 1:58	04/01/2024 6:45	6	Maintenance Outage	Weekly maintenance
BIOF	06BISCOM_G01	30	03/27/2024 22:53	04/02/2024 11:59	6	Forced Outage	Isolated due to tripping of Kabankalan-La Castellana 69kV Line.
BIOF	06CABI_G01	12	03/28/2024 10:01	04/01/2024 10:53	4	Forced Outage	Isolate from the grid due to insufficient fuel supply (bagasse)
BIOF	06STNEGB_G01	25	03/28/2024 10:30			Forced Outage	Emergency cut out due to insufficient fuel supply (bagasse).
BIOF	06FFHC_G01	9	03/28/2024 22:39	04/03/2024 0:30	6	Forced Outage	Shutdown due to insufficient fuel supply (bagasse).
BIOF	06FFHC_G01	9	04/07/2024 9:05	04/09/2024 18:45	2	Maintenance Outage	Weekly maintenance.
BIOF	06HPCO_G02	9.5	04/07/2024 23:01	04/09/2024 16:28	2	Maintenance Outage	Offline due to weekly maintenance.
BIOF	06URC_G01	16	04/08/2024 23:04	04/09/2024 2:49	1	Forced Outage	Emergency offline due to boiler problem.
BIOF	06HPCO_G02	9.5	04/09/2024 16:28	04/13/2024 8:08	4	Forced Outage	Isolate from the grid (islanding operation). As per advice by RRA their power plant should only operate as load due to pending completion of protection simulation and submission of test result.
BIOF	06FFHC_G01	9	04/12/2024 10:06	04/13/2024 10:42	1	Forced Outage	Shutdown due to insufficient fuel supply (bagasse).
BIOF	06URC_G01	30	04/13/2024 4:37			Forced Outage	Offline due to insufficient cane supply.
BIOF	06NTNEGB_G01	25	04/14/2024 0:56	04/15/2024 8:00	1	Maintenance Outage	Shutdown in preparation for Insulation Resistance testing of three (3) units 69kV Current Transformers and three (3) units 69kV Voltage Transformers.

Appendix A. Major Plant Outage

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Day/s)	Outage Type	Remarks
Visayas							
BIOF	06HPCO_G02	9.5	04/14/2024 9:35	04/16/2024 9:04	2	Forced Outage	Weekly maintenance.
BIOF	06VMC_G01	2.5	04/14/2024 21:36	04/15/2024 19:04	1	Forced Outage	Offline due to insufficient fuel supply (bagasse).
BIOF	06FFHC_G01	9	04/14/2024 22:12	04/17/2024 11:40	3	Forced Outage	Offline due to insufficient fuel supply (bagasse).
BIOF	06FFHC_G01	9	04/19/2024 0:33	04/20/2024 13:26	1	Forced Outage	Shutdown due to insufficient fuel supply (bagasse).
BIOF	06HPCO_G02	9.5	04/21/2024 5:30	04/23/2024 5:10	2	Forced Outage	Isolate from the grid due to PMS of 69KV Bacolod -Silay Line.
BIOF	06VMC_G01	2.5	04/21/2024 16:20			Forced Outage	Weekly maintenance.
BIOF	06FFHC_G01	9	04/21/2024 19:58	04/24/2024 15:18	3	Forced Outage	Insufficient cane supply.
BIOF	06NTNEGB_G01	25	04/23/2024 10:51	05/13/2024 0:11	20	Maintenance Outage	Maintenance shutdown.
BIOF	06FFHC_G01	9	04/26/2024 5:08	04/28/2024 3:16	2	Forced Outage	Offline due to insufficient cane supply.
BIOF	06FFHC_G01	9	04/29/2024 14:44	05/04/2024 7:33	5	Forced Outage	Weekend shutdown repair.
BIOF	06VMC_G02	21.5	05/02/2024 15:59	05/03/2024 2:02	1	Forced Outage	Due to Generating Unit Capability test.
BIOF	06NTNEGB_G01	25	05/22/2024 15:59			Forced Outage	Insufficient fuel supply (bagasse).
BIOF	06SCBIOP_G01	19.5	05/30/2024 10:18	06/01/2024 12:25	2	Forced Outage	Tripped due to Boiler feed pump trouble.
BIOF	06SCBIOP_G01	19.5	06/01/2024 15:39	06/07/2024 11:57	6	Forced Outage	emergency shutdown due to boiler problem.
BIOF	06SCBIOP_G01	19.5	06/07/2024 19:55	06/08/2024 15:23	1	Forced Outage	Auto-tripped with indication Hot Well Level High High.
BIOF	06SCBIOP_G01	19.5	06/14/2024 14:26			Forced Outage	Offline due to main compressor problem.
COAL	08PEDC_U02	83.7	03/29/2024 20:42	04/01/2024 1:25	3	Forced Outage	boiler tube leak at back pass area
COAL	08PALM_G01	135	03/31/2024 0:00			Forced Outage	Extended maintenance
COAL	05THVI_U02	169	04/15/2024 0:47	04/22/2024 0:21	7	Forced Outage	TVI UNIT 2 CUT-IN WITH INITIAL LOAD OF 5.6 MW
COAL	05KSPC_G01	103	04/16/2024 17:12	04/17/2024 1:49	1	Forced Outage	Tripped due to turbine lube oil pressure low low
COAL	05KSPC_G01	103	05/24/2024 5:47	05/25/2024 17:46	1	Forced Outage	PLANT DISTRIBUTIVE CONTROL SYSTEM CONTROLLER PROBLEM
COAL	05THVI_U02	169	05/25/2024 7:52	05/26/2024 1:24	1	Forced Outage	Suction valve cut-off instrument air hose loop cell blower B
COAL	05CEDC_U03	83.1	06/19/2024 0:58	06/23/2024 1:23	4	Forced Outage	Emergency shutdown due to heavy leak on the main steamline pipe causing unsafe operational conditions.
COAL	05CEDC_U01	83.2	06/20/2024 13:10	06/22/2024 1:18	2	Forced Outage	Tripped due to busted feed water line
GEO	04LEYTE_A	26.9	11/25/2022 11:07			Forced Outage	Due to lack of steam
GEO	04LGPP_G01	41	03/18/2024 10:52	04/27/2024 1:11	40	Maintenance Outage	Scheduled PMS.
GEO	04LEYTE_A	5	03/18/2024 20:36	03/31/2024 16:38	13	Forced Outage	insufficient steam supply
GEO	06NASULO_G01	47.5	03/24/2024 0:04	03/27/2024 22:41	3	Maintenance Outage	Offline for minor PMS.
GEO	04LEYTE_A	5	03/27/2024 21:24	03/28/2024 7:52	1	Forced Outage	Tripped indications to follow
GEO	04LEYTE_A	5	04/01/2024 15:49			Forced Outage	False activation of over frequency relay.
GEO	04LEYTE_A	5	04/02/2024 13:36	04/14/2024 21:29	12	Forced Outage	False activation of frequency relay
GEO	06NASULO_G01	47.5	04/04/2024 11:44	04/09/2024 10:19	5	Forced Outage	Tripped with indication condenser level very high.
GEO	04LGPP_G01	40.2	04/06/2024 11:41	04/07/2024 2:12	1	Forced Outage	Condenser level high high
GEO	04LEYTE_A	27.5	04/09/2024 0:06	04/10/2024 20:54	1	Forced Outage	Rectify OEC 42
GEO	04LEYTE_A	5	04/09/2024 14:52	04/10/2024 8:32	1	Forced Outage	Activation of 125DC Ground fault protection.
GEO	04LEYTE_A	73.12	04/13/2024 19:22	05/22/2024 11:53	39	Forced Outage	Due to high vibration.
GEO	04LEYTE_A	75.06	04/15/2024 16:32	04/16/2024 2:27	1	Forced Outage	Emergency cut-out to rectify steam leak in control and turbine inlet
GEO	04LGPP_G01	40.2	04/21/2024 0:38	04/22/2024 16:07	1	Forced Outage	Due to tripping of 4.16kV Power Supply
GEO	06PAL2A_U02	20	04/24/2024 21:26	04/25/2024 19:59	1	Forced Outage	Tripped with indication condenser vacuum pressure low low.
GEO	06PAL2A_U03	19.5	04/25/2024 21:31	04/26/2024 0:47	1	Planned Outage	Offline due to software upgrading.
GEO	06NASULO_G01	47.5	05/05/2024 0:00	05/07/2024 17:32	2	Forced Outage	Emergency shutdown a to conduct repair of hot well pump B suction valve.
GEO	06NASULO_G01	47.5	05/11/2024 0:05	05/12/2024 2:48	1	Forced Outage	Shutdown to conduct re-installation of hot well pump B.
GEO	04LEYTE_A	5	05/13/2024 16:50	05/14/2024 10:40	1	Forced Outage	False activation of defective generator differential relay.
GEO	04LEYTE_A	30	05/16/2024 14:03			Forced Outage	due to lack of steam
GEO	04LGPP_G01	41	05/18/2024 6:56	05/19/2024 22:03	1	Forced Outage	to carry-out control valve stroking and calibration of the control valves.
GEO	04LEYTE_A	5	05/20/2024 14:50	06/06/2024 12:36	17	Forced Outage	Due to insufficient steam supply.
GEO	04LEYTE_A	73.12	05/22/2024 15:24	06/06/2024 12:09	15	Forced Outage	Facilitate troubleshooting due to abnormal turbine vibration
GEO	04LEYTE_A	75.06	06/09/2024 15:48			Forced Outage	Turbine generator no. 3 high vibration indication
GEO	04LEYTE_A	77.5	06/10/2024 11:27	06/16/2024 15:41	6	Forced Outage	Emergency repair of steam leak
GEO	04LEYTE_A	5	06/17/2024 13:37	06/18/2024 16:01	1	Forced Outage	To effect troubleshooting and repair of its defective DCS module.
HYD	04TAFT_G01	5	02/21/2024 21:15	05/25/2024 14:19	94	Forced Outage	Low forebay level.
HYD	04TAFT_G01	5.1	04/05/2024 23:25	04/06/2024 1:23	1	Forced Outage	De-energized due to unbalanced voltage monitoring of Paranas-Nato 69kV Line portion.
HYD	07SEVILL_G01	1.25	04/19/2024 7:29	04/20/2024 13:14	1	Forced Outage	Tightened transformer loose contact terminal.
HYD	07SEVILL_G01	1.25	05/03/2024 16:28	05/04/2024 11:02	1	Forced Outage	Line fault.
HYD	04TAFT_G01	5.1	05/07/2024 0:01	05/14/2024 0:00	7	Planned Outage	Preventive Maintenance of THEC middle taft.
HYD	07LOBOC_G02	1.2	05/07/2024 17:45	05/14/2024 22:07	7	Forced Outage	High bearing temperature.
HYD	07SEVILL_G01	1.25	05/09/2024 18:45	05/11/2024 11:01	2	Forced Outage	Affected by the tripping of BOHECO 1 Loay SS Feeder 11.
HYD	07SEVILL_G01	1.25	05/19/2024 22:00	05/22/2024 14:30	3	Forced Outage	Affected by the tripping of Tagbilaran-Garcia 69kV line.
HYD	04TAFT_G01	5.1	05/21/2024 0:01	05/24/2024 8:57	3	Forced Outage	Closing of weir of upper Taft THEC at low flow
HYD	07SEVILL_G01	1.25	05/24/2024 22:40	05/26/2024 11:02	2	Forced Outage	Affected by the tripping of Tagbilaran-Garcia 69kV line.
HYD	07LOBOC_G02	1.2	05/24/2024 22:40	05/26/2024 2:52	2	Forced Outage	Affected by the tripping of Loboc-Tagbilaran 13.8kV line.
HYD	04TAFT_G01	5	05/25/2024 22:30	06/05/2024 2:03	11	Forced Outage	Change-over of unit from 1 to 3 Insufficient water supply.
HYD	04TAFT_G01	5.1	05/27/2024 12:31	06/05/2024 3:48	9	Forced Outage	Low water at forebay.
HYD	08TIMBA_G01	18.9	05/30/2024 22:04	05/31/2024 17:01	1	Forced Outage	Auto-tripped (affected by line fault)
HYD	04TAFT_G01	5.1	06/05/2024 1:57	06/09/2024 6:14	4	Forced Outage	Activation of collective fault synchronization.
HYD	04TAFT_G01	5	06/05/2024 3:39	06/15/2024 20:25	10	Forced Outage	Affected by Paranas-Quinapondan 69kV Line tripping.
HYD	04TAFT_G01	5.1	06/10/2024 20:08	06/15/2024 19:14	5	Forced Outage	Due to alarm collective fault from synchronization device.
HYD	04TAFT_G01	5.1	06/15/2024 20:22	06/16/2024 21:56	1	Forced Outage	Water low level
HYD	04TAFT_G01	5.1	06/16/2024 21:48	06/22/2024 18:47	6	Forced Outage	Activation of collective fault synchronization device.
HYD	04TAFT_G01	5.1	06/18/2024 7:01	06/21/2024 6:52	3	Planned Outage	Scheduled PMS.
HYD	07SEVILL_G01	1.25	06/20/2024 21:05	06/21/2024 12:59	1	Forced Outage	AFFECTED TRIPPING OF TAGBILARAN GARCIA 69 KV LINE.
HYD	04TAFT_G01	5.1	06/22/2024 19:10			Forced Outage	due to activation of collective fault from synchronization device.
HYD	04TAFT_G01	5	06/22/2024 19:26			Forced Outage	due to activation of collective fault from synchronization device.
HYD	08TIMBA_G01	18.9	06/25/2024 23:43			Forced Outage	Affected by line fault
OIL	05CARMENDPP_U01	10	03/15/2024 11:41	04/02/2024 21:38	18	Forced Outage	UNABLE TO CUT-IN DUE TO UNIT BREAKER AND GENERATOR PROBLEM
OIL	08PDPP1_U03	5	03/25/2024 21:10	03/26/2024 13:43	1	Forced Outage	AUTO TRIPPED (Exhaust gas leakages)
OIL	06CENPRI_U04	6.7	03/26/2024 8:56	03/27/2024 0:33	1	Forced Outage	To conduct inspection of water leak at left bank turbocharger.
OIL	08PDPP3_E	12	03/26/2024 13:47	03/29/2024 10:08	3	Forced Outage	Offline due to water leak
OIL	08PDPP3_C	12	03/26/2024 14:22	03/28/2024 13:07	2	Forced Outage	Due to turbocharger problem
OIL	08PDPP3_H	13	03/26/2024 23:40	03/27/2024 8:11	1	Forced Outage	OFFLINE due to engine vibration
OIL	07BDPP_U03	4.2	03/27/2024 22:25	03/30/2024 18:16	3	Forced Outage	Severe fuel leak at cylinder no. 1.
OIL	08PDPP1_U05	5	03/28/2024 6:04	03/29/2024 13:16	1	Forced Outage	unable to start due to excessive water leak at charge air cooler B Bank
OIL	08PDPP3_H	13	03/28/2024 21:17	03/31/2024 13:49	3	Forced Outage	Due to water leak
OIL	08PDPP3_G	13	03/28/2024 23:04	03/29/2024 18:09	1	Forced Outage	Due to Gas leak
OIL	08PDPP3_C	12	03/29/2024 1:05	03/30/2024 13:16	1	Forced Outage	lube oil leak
OIL	08PDPP3_E	12	03/29/2024 18:10	03/30/2024 16:06	1	Forced Outage	excessive fuel leak at fuel header A Bank
OIL	08PDPP1_U03	5	03/29/2024 19:08	03/31/2024 16:10	2	Forced Outage	stockup fuel injection pump cyl 5
OIL	08STBPB1_U02	6	03/29/2024 20:55			Forced Outage	smoke coming out at sampling outlet
OIL	08PDPP1_U05	5	03/29/2024 22:08	03/30/2024 15:09	1	Forced Outage	excessive water leak
OIL	08STBPB1_U04	6	03/30/2024 19:59	03/31/2024 16:53	1	Forced Outage	Surging of turbo charger at the right bank
OIL	08PDPP1_U02	5	03/30/2024 22:12	04/01/2024 17:07	2	Forced Outage	excessive gas leak at upper exhaust b bank
OIL	08PDPP3_E	12	03/30/2024 22:18	04/01/2024 16:05	2	Forced Outage	fuel leak at fuel injection pump
OIL	08PDPP1_U05	5	03/31/2024 0:37	04/01/2024 22:06	1	Forced Outage	excessive water leak at cylinder number 2
OIL	08PDPP3_G	13	03/31/2024 1:09	04/01/2024 17:42	1	Forced Outage	high HT pressure
OIL	08PDPP1_U03	5	03/31/2024 19:11	04/01/2024 16:07	1	Forced Outage	CUT-OUT DUE TO CUT-OFF ELBOW BLOTS AT EXPANSION BILLOWS A BANK
OIL	08PDPP3_C	12	03/31/2024 20:03	04/01/2024 15:01	1	Forced Outage	CUT-OUT DUE TO ABNORMAL SOUND AT LUBE OIL PUMP MOTOR.
OIL	08PDPP3_H	13	03/31/2024 20:06	04/01/2024 17:09	1	Forced Outage	CUT-OUT DUE TO EXCESSIVE FUEL LEAK AT FUEL SUPPLY LINE
OIL	08STBPB1_U04	6	03/31/2024 20:46	04/01/2024 16:32	1	Forced Outage	turbo charger surging left bank
OIL	08STBPB1_U01	6	03/31/2024 22:40	04/01/2024 16:30	1	Forced Outage	turbo charger surging left bank
OIL	08STBPB1_U03	6	04/01/2024 16:30			Forced Outage	Starting failure

Appendix A. Major Plant Outage

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Day/s)	Outage Type	Remarks
				Visayas			
OIL	08PDPP3_C	12	04/01/2024 20:14	04/02/2024 12:04	1	Forced Outage	Excessive HT water leak inside combustion chamber cylinder A5
OIL	08PDPP3_H	13	04/01/2024 22:27	04/02/2024 9:11	1	Forced Outage	Excessive exhaust gas leak at various cylinder
OIL	08STBPB1_U01	6	04/05/2024 15:33	04/06/2024 18:19	1	Forced Outage	excessive surging of TC left Bank
OIL	08STBPB1_U01	6	04/06/2024 19:39	04/11/2024 3:00	5	Forced Outage	Excessive surging of TC left bank
OIL	08PDPP3_E	12	04/07/2024 17:55	04/09/2024 2:28	2	Forced Outage	failed to cut in
OIL	08PDPP3_G	13	04/08/2024 15:36			Forced Outage	water leak at center casing of turbo charger b-bank
OIL	05CARMENDPP_U01	10	04/08/2024 18:40	04/09/2024 0:28	1	Forced Outage	UNIT TRIPPED DUE TO THE MAIN BEARING TEMPERATURE HIGH
OIL	08PDPP1_U02	5	04/08/2024 21:20	04/09/2024 0:22	1	Forced Outage	fuel leak at cylinder 6 fuel injection pump head
OIL	08PDPP3_H	13	04/08/2024 22:04	04/09/2024 9:16	1	Forced Outage	HT water Leak
OIL	07BDPP_U03	4.2	04/09/2024 12:20	04/10/2024 11:08	1	Forced Outage	Severe fuel leak at cylinder # 1 A bank.
OIL	08PDPP3_H	13	04/09/2024 17:06	04/11/2024 20:31	2	Forced Outage	abnormal sound at turbo charger b bank
OIL	08STBPB1_U01	6	04/11/2024 9:40	04/12/2024 16:34	1	Forced Outage	emergency cut out due to TC left bank lube oil pump failure
OIL	05TPVI_U06	5.5	04/15/2024 14:05	04/16/2024 23:30	1	Forced Outage	Lube Oil Leak.
OIL	05TPVI_U05	5.5	04/15/2024 14:30	04/16/2024 13:28	1	Forced Outage	Broken Stud bolt.
OIL	05CPPC_U08	6.5	04/15/2024 14:43	04/16/2024 13:31	1	Forced Outage	High Temperature Water Pump trip.
OIL	08STBPB1_U04	6	04/15/2024 15:38	04/16/2024 11:05	1	Forced Outage	Failure to start due to lube oil inlet low pressure
OIL	04CLBYBNK_G01	5.5	04/16/2024 16:04	04/22/2024 13:23	6	Forced Outage	Due to cooling tower problem
OIL	04CLBYBNK_G01	5.5	04/16/2024 16:04	04/22/2024 13:23	6	Forced Outage	Due to cooling tower problem
OIL	06CENPRI_U05	6.7	04/17/2024 8:00	04/26/2024 12:57	9	Forced Outage	Replacement of turbo charger and charge air coolers.
OIL	08PDPP3_H	13	04/17/2024 21:44	04/18/2024 17:11	1	Forced Outage	Trouble at TC B-Bank
OIL	08PDPP1_U05	5	04/18/2024 11:30	04/19/2024 16:33	1	Forced Outage	water leak between cylinder head and liner cylinder 4
OIL	08PDPP3_H	13	04/18/2024 17:27	04/22/2024 13:42	4	Forced Outage	Abnormal sound at turbo charger B-Bank
OIL	08PDPP1_U02	5	04/19/2024 19:00	04/21/2024 10:48	2	Forced Outage	abnormal sound at turbo charger
OIL	08PDPP3_G	13	04/20/2024 18:00	05/01/2024 13:40	11	Forced Outage	Unable to cut-in due to excessive water leak at charge air cooler A bank
OIL	08NABASDPP_U02	3.4	04/20/2024 18:04	05/22/2024 8:07	32	Forced Outage	Manual shutdown due to crank pin bearing seizure at cylinder R7 & L7
OIL	08PDPP1_U02	5	04/21/2024 14:32	04/23/2024 19:54	2	Forced Outage	Surging at TC A bank
OIL	08PDPP3_E	12	04/21/2024 18:10	04/22/2024 13:44	1	Forced Outage	High exhaust gas temperature cylinder A7
OIL	04CLBYBNK_G01	5.5	04/23/2024 18:34	04/25/2024 12:39	2	Forced Outage	Emergency shutdown due to Engine high temperature alarm.
OIL	04CLBYBNK_G01	5.5	04/23/2024 18:34	04/25/2024 12:39	2	Forced Outage	Emergency shutdown due to Engine high temperature alarm.
OIL	08STBPB1_U01	6	04/23/2024 23:05	04/25/2024 18:12	2	Forced Outage	Detached fuel injection pump of cylinder 2R
OIL	05CARMENDPP_U04	10	04/24/2024 10:01	04/27/2024 4:02	3	Forced Outage	Unavailable due to fresh water leak at cylinder no. 1
OIL	08PDPP3_E	12	04/24/2024 16:13	04/25/2024 12:14	1	Forced Outage	Emergency cut out due to abnormal sound at TC A bank
OIL	05CARMENDPP_U01	10	04/24/2024 18:26	04/25/2024 20:08	1	Forced Outage	Emergency cut-out due to suspected gas cut at cylinder no. 12
OIL	05TPVI_U04	5.5	04/25/2024 13:25	04/26/2024 11:05	1	Forced Outage	Starting Failure due to Load Fluctuation at Synchronization
OIL	04CLBYBNK_G01	5.5	04/25/2024 15:18	04/26/2024 18:06	1	Forced Outage	Due to high vibration of cooling tower caused by high temperature.
OIL	04CLBYBNK_G01	5.5	04/25/2024 15:18	04/26/2024 18:01	1	Forced Outage	Due to high vibration of cooling tower caused by high temperature.
OIL	07BDPP_U03	4.2	04/25/2024 21:40	04/26/2024 8:30	1	Forced Outage	Severe fuel oil leak at fuel injection pump no. 1.
OIL	08PDPP3_C	12	04/26/2024 21:26	04/27/2024 13:09	1	Forced Outage	Abnormal sound at turbo charger B Bank
OIL	08PDPP3_E	12	04/26/2024 21:43	04/27/2024 11:37	1	Forced Outage	Surging at turbocharger A Bank
OIL	08PDPP3_H	13	04/26/2024 21:57	04/27/2024 11:40	1	Forced Outage	Tripped due to high EGT
OIL	08PDPP3_E	12	04/27/2024 14:19	04/28/2024 9:13	1	Forced Outage	Surging of turbo charger A-Bank
OIL	04CLBYBNK_G01	5.5	04/27/2024 22:18	04/28/2024 20:05	1	Forced Outage	Due to high vibration of cooling tower caused by high temperature.
OIL	04CLBYBNK_G01	5.5	04/27/2024 22:18	04/29/2024 14:00	2	Forced Outage	Due to high vibration of cooling tower caused by high temperature.
OIL	07BDPP_U01	4	04/29/2024 9:35	05/01/2024 13:41	2	Forced Outage	High main bearing temperature at cylinder 5.
OIL	04CLBYBNK_G01	5.5	04/29/2024 15:30	04/30/2024 14:50	1	Forced Outage	Outage due to leak at exhaust gas manifold
OIL	08PDPP3_H	13	04/29/2024 21:09	04/30/2024 20:14	1	Forced Outage	emergency cut out due to turbo charger problem
OIL	08PDPP1_U02	5	04/29/2024 22:48	04/30/2024 15:44	1	Forced Outage	emergency cut-out due to surging turbo charger B-bank
OIL	07BDPP_U02	4	04/30/2024 10:21	05/01/2024 18:02	1	Forced Outage	Engine lube oil high temperature.
OIL	08PDPP1_U05	5	04/30/2024 19:28			Forced Outage	excessive fuel leak at cylinder 7
OIL	06CENPRI_U01	4.5	05/02/2024 7:01			Forced Outage	Conduct inspection of left bank turbo charger and replacement of cylinder A2 liner.
OIL	07BDPP_U01	4	05/03/2024 21:03	05/04/2024 9:24	1	Forced Outage	Severe fuel oil leak at fuel injection pump no.9
OIL	07BDPP_U03	4.2	05/04/2024 13:51	05/06/2024 9:21	2	Forced Outage	Severe water leak between jacket liner and cylinder head of cylinder no. 12.
OIL	08PDPP3_G	13	05/07/2024 11:19	05/12/2024 18:10	5	Forced Outage	Unable to start-up due to excessive water leak inside combustion chamber
OIL	08PDPP1_U02	5	05/07/2024 14:18	05/08/2024 17:10	1	Forced Outage	High exhaust gas temperature cylinder 9
OIL	08PDPP1_U05	5	05/07/2024 23:12	05/08/2024 2:06	1	Forced Outage	Triiping of Jacket cooling water circulating pump.
OIL	08PDPP1_U03	5	05/09/2024 15:47	05/10/2024 8:13	1	Forced Outage	due to generator problem/overspeed
OIL	07BDPP_U02	4	05/09/2024 16:34	05/10/2024 18:21	1	Forced Outage	High main engine lube-oil temp.
OIL	07BDPP_U01	4	05/11/2024 19:01	05/12/2024 10:20	1	Forced Outage	EMERGENCY OUT DUE TO HEAVY SMOKE COMING OUT FROM THE SMOKE STACK.
OIL	05CARMENDPP_U02	10	05/11/2024 20:02	05/15/2024 20:06	4	Forced Outage	EMERGENCY CUT-OUT DUE TO EXHAUST MANIFOLD PROBLEM
OIL	07BDPP_U02	4	05/12/2024 19:00	05/14/2024 15:56	2	Forced Outage	Severe gas leak at cylinder no. 5.
OIL	08PDPP1_U05	5	05/13/2024 13:41	05/14/2024 12:51	1	Forced Outage	Excessive fuel leak at fip cylinder 12
OIL	08PDPP3_E	12	05/13/2024 14:28	05/14/2024 8:33	1	Forced Outage	Excessive exhaust gas leak
OIL	05EAUC_U01	11.5	05/13/2024 22:55			Forced Outage	CYLINDER NO. 7 CRANKCASE EXPLOSION
OIL	05EAUC_U02	11	05/13/2024 22:55	05/14/2024 7:36	1	Forced Outage	EMERGENCY STOP SUBJECT FOR FURTHER INSPECTION DUE TO A-BANK CRANKCASE COVER HIT BY SOME DEBRIS COMING FROM UNIT NO.1 EXPLOSION
OIL	08PDPP1_U03	5	05/14/2024 16:10	05/15/2024 8:07	1	Forced Outage	High Pedestal Bearing temperature
OIL	05TPVI_U04	5.5	05/15/2024 14:50	05/18/2024 22:05	3	Forced Outage	Starting failure due to high main bearing #3 temperature
OIL	08PDPP3_H	13	05/17/2024 13:28	05/18/2024 16:41	1	Forced Outage	Abnormal sound at turbo charger b-bank
OIL	08PDPP3_G	13	05/17/2024 13:45	05/20/2024 0:06	3	Forced Outage	unable to cut-in due to excessive water leak between engine frame and liner at cylinder B3
OIL	08PDPP3_C	12	05/17/2024 17:18	05/18/2024 0:08	1	Forced Outage	excessive HT water leak at HT header
OIL	08PDPP1_U05	5	05/20/2024 16:27	05/21/2024 7:07	1	Forced Outage	excessive water leak at injector cooling cyl 15
OIL	07BDPP_U03	4.2	05/20/2024 22:58	05/21/2024 8:38	1	Forced Outage	Severe fuel leak at FIP no. 12.
OIL	07BDPP_U03	4.2	05/21/2024 20:50	05/22/2024 8:45	1	Forced Outage	SEVERE FUEL LEAK AT FIP NO. 12.
OIL	08STBPB1_U04	6	05/21/2024 21:40	05/22/2024 17:41	1	Forced Outage	Excessive surging
OIL	07BDPP_U04	4	05/21/2024 23:08	05/22/2024 8:17	1	Forced Outage	Jacket cooling water inlet pressure too low.
OIL	08PDPP3_E	12	05/22/2024 9:28	05/23/2024 12:17	1	Forced Outage	abnormal sound at turbo charger
OIL	05TPVI_U02	5.5	05/22/2024 12:50	05/23/2024 9:38	1	Forced Outage	Unable to cut-in due to cylinder B7 water leak
OIL	08PDPP1_U03	5	05/22/2024 15:05	05/23/2024 17:58	1	Forced Outage	Emergency cutout due to high exhaust gas temperature at cylinder 12 and 13
OIL	05CPPC_U08	6.5	05/22/2024 19:55	05/24/2024 0:12	2	Forced Outage	Lube Oil Pressure Low Shutdown
OIL	08PDPP3_H	13	05/23/2024 1:35	05/30/2024 9:11	7	Forced Outage	Abnormal sound at turbo charger
OIL	08PDPP3_E	12	05/23/2024 16:00	05/25/2024 23:00	2	Forced Outage	OFF-LINE (Abnormal sound at TC A bank)
OIL	07BDPP_U02	4	05/23/2024 21:46	05/24/2024 7:28	1	Forced Outage	Rocker gear lube oil pressure too low.
OIL	08PDPP3_G	13	05/24/2024 6:22	05/27/2024 2:21	3	Forced Outage	FAILED TO CUT-IN DUE TO T/C PROBLEM.
OIL	06CENPRI_U04	6.7	05/24/2024 12:50	05/25/2024 11:36	1	Forced Outage	Shutdown due to gas leak at cylinder No. 8.
OIL	07BDPP_U01	4	05/25/2024 1:12	05/26/2024 16:16	1	Forced Outage	Engine overspeed.
OIL	07BDPP_U03	4.2	05/25/2024 17:33	05/28/2024 5:43	3	Forced Outage	Severe water leak at jacket cooling water pipe.
OIL	06CENPRI_U05	6.7	05/27/2024 18:58	06/04/2024 18:57	8	Forced Outage	Emergency shutdown due to High Main Bearing Temperature.
OIL	08PDPP3_G	13	05/27/2024 20:24	05/28/2024 9:13	1	Forced Outage	Excessive exhaust gas leak cylinder b2
OIL	08PDPP3_E	12	05/27/2024 20:50	05/28/2024 19:50	1	Forced Outage	Abnormal sound at turbo charger b-bank
OIL	08PDPP3_E	12	05/28/2024 21:45	05/29/2024 2:14	1	Forced Outage	excessive lube oil leak at Turbo charger turbine side cover A-bank
OIL	07BDPP_U02	4	05/28/2024 22:09	05/29/2024 1:52	1	Forced Outage	Severe fuel leak at S-5 cylinder number 10.
OIL	05TPVI_U05	5.5	05/29/2024 16:25	05/30/2024 12:03	1	Forced Outage	UNIT 5 Emergency cut-out due to heavy fuel leak at cylinder A1 fuel injection pump priming port.
OIL	07BDPP_U01	4	05/30/2024 15:30	05/31/2024 22:03	1	Forced Outage	SEVERE GAS LEAK AT CYLINDER NO. 6.
OIL	08PDPP3_H	13	05/30/2024 17:00	05/31/2024 2:12	1	Forced Outage	unable to cut-in due to water leak at cylinder A3 and A5
OIL	08PDPP1_U05	5	05/30/2024 19:33	05/31/2024 7:25	1	Forced Outage	Isolated due to tripping of 138kV Dingle-PDPP1 L2 (CO)
OIL	08PDPP1_U02	5	05/30/2024 19:33	05/31/2024 7:23	1	Forced Outage	Isolated due to tripping of 138kV Dingle-PDPP1 L2 (CO)
OIL	08PDPP3_G	13	05/31/2024 16:22	06/02/2024 7:07	2	Forced Outage	Unable to cut-in due to no lube oil flushing at turbo charger A Bank
OIL	06CENPRI_U04	6.7	06/01/2024 13:28	06/02/2024 1:15	1	Forced Outage	Internal jacket water leak at cylinder 18.
OIL	08STBPB1_U04	6	06/02/2024 5:13	06/03/2024 16:23	1	Forced Outage	Isolated due to line maintenance
OIL	08STBPB1_U02	6	06/02/2024 5:13			Forced Outage	Isolated due to line maintenance
OIL	08STBPB1_U01	6	06/02/2024 5:13			Forced Outage	Isolated due to line maintenance

Appendix A. Major Plant Outage

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Day/s)	Outage Type	Remarks
Visayas							
OIL	06CENPRI_U02	4.5	06/03/2024 18:55	06/04/2024 0:48	1	Forced Outage	Offline due to jacket water leak.
OIL	07BDPP_U04	4	06/03/2024 22:31	06/04/2024 12:33	1	Forced Outage	Severe air leak at electro-valve 6.
OIL	08PDPP3_E	12	06/04/2024 10:28	06/05/2024 8:12	1	Forced Outage	Emergency cut-out due to excessive exhaust gas leak
OIL	08PDPP1_U02	5	06/04/2024 19:09	06/08/2024 0:23	4	Forced Outage	Abnormal sound at cyl. 9
OIL	07BDPP_U02	4	06/04/2024 22:10	06/05/2024 9:02	1	Forced Outage	High exhaust gas temperature at A-bank.
OIL	07BDPP_U03	4.2	06/05/2024 8:46	06/09/2024 17:27	4	Forced Outage	UNABLE TO CUT IN DUE TO SEVERE WATER LEAK AY T/C B BANK.
OIL	07BDPP_U01	4	06/05/2024 9:24	06/07/2024 9:46	2	Forced Outage	ENGINE OVERSPEED
OIL	08PDPP3_E	12	06/05/2024 13:18	06/06/2024 10:45	1	Forced Outage	Abnormal Sound at Turbocharger A Bank
OIL	06CENPRI_U05	6.7	06/06/2024 17:33	06/13/2024 22:42	7	Forced Outage	Emergency offline due to High Temperature at Bearing No.2.
OIL	08PDPP1_U02	5	06/08/2024 9:16	06/10/2024 11:08	2	Forced Outage	Emergency cut-out due to abnormal sound at cylinder 9
OIL	05CARMENDPP_U01	10	06/08/2024 12:57	06/09/2024 23:16	1	Forced Outage	Manual shutdown due to turbo charger problem
OIL	08PDPP3_E	12	06/08/2024 13:35	06/11/2024 3:06	3	Forced Outage	Auto-tripped due to high bearing temperature
OIL	08PDPP3_H	13	06/09/2024 16:08	06/10/2024 12:15	1	Forced Outage	Excessive water leak at cylinder B3
OIL	07BDPP_U01	4	06/09/2024 21:36	06/10/2024 1:05	1	Forced Outage	SEVERE FUEL LEAK AT CYLINDER 5.
OIL	08PDPP1_U02	5	06/10/2024 13:24	06/11/2024 9:07	1	Forced Outage	Emergency cutout due to abnormal sound at turbo charger b-bank
OIL	08PDPP1_U03	5	06/10/2024 21:02	06/11/2024 0:07	1	Forced Outage	Auto tripped (High jacket water cooling temperature)
OIL	05CARMENDPP_U02	10	06/11/2024 15:00	06/12/2024 21:37	1	Forced Outage	Failed to cut-in due to Turbo Charger problem
OIL	08PDPP3_E	12	06/11/2024 16:45	06/13/2024 22:40	2	Forced Outage	Emergency stop due to abnormal sound TC A bank
OIL	08PDPP1_U03	5	06/11/2024 16:50	06/12/2024 8:44	1	Forced Outage	OFF-LINE (High jacket water cooling temperature)
OIL	06CENPRI_U02	4.5	06/11/2024 22:00	06/12/2024 1:16	1	Forced Outage	Cooling system trouble.
OIL	08STBPB1_U01	6	06/11/2024 23:06	06/12/2024 17:24	1	Forced Outage	Emergency cut-out due to red hot of all exhaust pipe left bank
OIL	08PDPP3_H	13	06/12/2024 21:04	06/13/2024 8:24	1	Forced Outage	Excessive fuel leak at cyl A6
OIL	08PDPP1_U03	5	06/12/2024 22:38	06/13/2024 8:24	1	Forced Outage	Excessive fuel leak at CYLINDER 1
OIL	08PDPP3_E	12	06/14/2024 0:57	06/15/2024 2:07	1	Forced Outage	Abnormal sound at TC A bank
OIL	07BDPP_U02	4	06/14/2024 8:01	06/15/2024 22:28	1	Maintenance Outage	REPLACEMENT OF CYLINDER LINER NO. 12.
OIL	08PDPP3_C	12	06/19/2024 13:52	06/21/2024 0:07	2	Forced Outage	Emergency cut-out due HT water leak at Cylinder B3
OIL	08PDPP1_U03	5	06/21/2024 21:22	06/22/2024 0:09	1	Forced Outage	Excessive water leak at jacket water cooling outlet cylinder 9
OIL	06CENPRI_U04	6.7	06/22/2024 8:27	06/23/2024 0:39	1	Forced Outage	To conduct replacement of cylinder head and liner.
OIL	08PDPP3_E	12	06/23/2024 11:16	06/25/2024 10:15	2	Forced Outage	Emergency cut-out due to abnormal sound of turbo charger
OIL	05CARMENDPP_U04	10	06/24/2024 19:20			Forced Outage	Auto-tripped due to Piston Scuffing on Cylinder 11
Mindanao							
BIOF	14COTSUGR_G01	3.4	03/11/2024 23:59			Forced Outage	Shutdown from Testing and Commissioning Phase. Forced Outage
BIOF	14BIOMS_U01	5.7	03/30/2024 9:28	04/01/2024 5:04	2	Forced Outage	Unplanned Outage. Cause Inclined Chain Conveyor Trouble
BIOF	09LIBPOWR_G01	6	03/30/2024 23:54	03/31/2024 0:08	1	Forced Outage	Unplanned Outage.
BIOF	14SPGI_U01	6	04/17/2024 21:23	04/25/2024 14:29	8	Forced Outage	Forced Outage due to economizer leakage. Unplanned Outage
BIOF	14BIOGS_G01	12.4	04/19/2024 23:46			Forced Outage	69kV Substation Tripped
BIOF	14BIOMS_U01	5.7	04/23/2024 19:10	04/24/2024 16:24	1	Forced Outage	Generating unit was stopped to prepare for inspection due to turbine trouble.
BIOF	14BIOGS_G01	12.4	05/03/2024 22:04	05/04/2024 1:11	1	Forced Outage	No generation due to low gas level.
BIOF	14BIOMS_U01	5.7	05/18/2024 15:29	05/19/2024 1:51	1	Forced Outage	For investigation. (Forced Outage)
BIOF	14SPGI_U01	6	05/23/2024 0:49			Forced Outage	No available biomass feedstock. (OMC Outage)
BIOF	14BIOMS_U01	5.7	05/26/2024 1:41	06/10/2024 16:23	15	Forced Outage	Plant shutdown due to scheduled Bi-annual PMS.ETC is on June 11 2024.
BIOF	09LIBPOWR_G01	6	05/27/2024 0:00			Forced Outage	PMS (Non-GOMP). ETC June 12 2024. Extended June 26 2024.
COAL	13SMC_U01	149.9	03/28/2024 13:25	03/29/2024 14:32	1	Forced Outage	Emergency shutdown due to repair of leakage at steam-drum low-down main isolation valve (Unplanned Outage). ETC 29 March 2024 1500H.
COAL	13DCPP_U02	150	04/07/2024 19:21	04/10/2024 9:10	3	Forced Outage	Emergency shutdown due to boiler nozzle problem. (FO/UO). ETC April 10 2024 at 2100H.
COAL	11STEAG_U02	116	04/11/2024 11:00	04/18/2024 3:35	7	Forced Outage	Online from Emergency shutdown due to pre-heater tube leak problem. Unplanned Outage
COAL	10GNPK_U02	151	04/17/2024 17:53	04/19/2024 2:06	2	Forced Outage	Tripped again. Indication High differential pressure. Unplanned Outage. No ETC.
COAL	13SMC_U02	150	04/17/2024 18:20	04/24/2024 17:05	7	Forced Outage	Emergency shutdown due to tube leak on cyclone inlet. Unplanned outage. ETC 24 Apr 2024.
COAL	10GNPK_U03	151.3	04/24/2024 5:03	04/30/2024 14:52	6	Forced Outage	Tripped with gross generation of 68MW due to boiler drum high level. Unplanned Outage
COAL	11STEAG_U01	116	04/25/2024 15:00	04/30/2024 4:05	5	Forced Outage	Online from Forced outage emergency shutdown at 1500H due to boiler fouling. Unplanned outage. ETC April 30 2024 2359H.
COAL	13DCPP_U02	150	05/02/2024 8:30	05/03/2024 7:31	1	Forced Outage	Isolated due to fault along Toril-DCPP 138kV Line 2
COAL	13DCPP_U02	150	05/03/2024 10:52	05/04/2024 16:46	1	Forced Outage	Cause For investigation by TSI management.
COAL	11MINBAL_G01	55	05/09/2024 21:09	05/15/2024 0:38	6	Forced Outage	Auto-tripped due to Generator ground fault. Forced Outage (Unplanned Outage)
COAL	11FDC_U01	135	05/11/2024 8:21	05/17/2024 18:41	6	Forced Outage	Auto-tripped due to visible Boiler tube leak. Forced Outage (Unplanned Outage).
COAL	10GNPK_U04	151	05/25/2024 2:48	05/28/2024 3:15	3	Forced Outage	Online from Forced Outage - suspected boiler tube leak in elevation 32.5m (Unplanned Outage).
COAL	10PPEI_U01	20	06/02/2024 2:15			Forced Outage	PMS (Non-GOMP). ETC June 12 2024. Extended to June 26 2024.
COAL	11MINBAL_G01	55	06/03/2024 18:52	06/05/2024 0:18	2	Forced Outage	Tripped. Indication steam drum level low-low. Unplanned outage.
COAL	11STEAG_U01	116	06/13/2024 16:00	06/17/2024 6:23	4	Forced Outage	Emergency Shutdown due to boiler fouling. (Unplanned Outage)
COAL	11STEAG_U02	116	06/17/2024 9:00	06/20/2024 20:57	3	Forced Outage	Online from FO - Emergency shutdown due to tube leak and boiler fouling. (Unplanned Outage)
COAL	11STEAG_U01	116	06/21/2024 1:22	06/25/2024 20:12	4	Forced Outage	Online from FO - Emergency Shutdown due to boiler tube leak. Unplanned Outage.
COAL	11STEAG_U02	116	06/21/2024 15:00	06/25/2024 3:01	4	Forced Outage	Online from FO - Emergency Shutdown due to boiler tube leak. Unplanned Outage.
COAL	14SARANG_U01	122	06/25/2024 3:29			Forced Outage	Tripped. Relay Indication Induced Draft Fan Tripped. Unplanned Outage. ETC June 30 2024 at 0001H.
GEO	14MTAPO_U03	3.6	04/29/2024 0:05	05/05/2024 22:08	6	Forced Outage	Shutdown for maintenance (Unplanned Outage)
GEO	14MTAPO_U03	3.6	05/06/2024 15:08	05/07/2024 3:53	1	Forced Outage	Forced outage. Cause Lube oil pressure low.
GEO	14MTAPO_U03	3.6	05/12/2024 20:33	05/14/2024 15:52	2	Forced Outage	Forced outage. Due to brine pressure Low Low.
GEO	14MTAPO_U03	3.6	06/10/2024 8:38	06/11/2024 20:28	1	Forced Outage	Tripped. Cause for verification (Unplanned Outage)
HYD	14MARBEL_U01	0.5	01/14/2024 21:13			Forced Outage	OMC shutdown due to NIA Intake Gate shutdown. No ETC.
HYD	13TUDAY2_G01	8.1	03/06/2024 16:27			Forced Outage	Plant Tripped due to High Vibration DE(Drive End) Axial and High Vibration DE Radial 2
HYD	10AGUS7_U02	25.3	03/20/2024 12:42	04/02/2024 9:00	13	Forced Outage	Shutdown due to insufficient water supply. (Unplanned Outage)
HYD	10AGUS4_U03	52.7	03/21/2024 14:26	03/27/2024 10:00	6	Forced Outage	Emergency shutdown. OMC - insufficient water supply. (Unplanned Outage)
HYD	13TALOM1_G01	0.5	03/23/2024 19:01	03/28/2024 16:17	5	Forced Outage	Plant shutdown due to IWS.
HYD	10AGUS2_U02	60	03/26/2024 0:00	03/27/2024 13:50	1	Forced Outage	PMS (GOMP-March 14-25 2024). Extended PMS. ETC March 30 2024.
HYD	10AGUS4_U03	52.7	03/27/2024 20:08	04/11/2024 7:33	15	Forced Outage	Online from OMC Outage due to low forebay elevation.
HYD	14ALMADA_G01	2.6	03/27/2024 20:17	03/28/2024 1:39	1	Forced Outage	unplanned outage due to COTELCO PPalma fluctuation"Indication Synchronizing controller Trip
HYD	13TALOM23_G01	0.93	03/31/2024 15:52	04/01/2024 2:15	1	Forced Outage	Plant tripped due to DC charger failure due to busted fuse. (For further investigation)
HYD	13TALOM23_G01	0.93	03/31/2024 15:52	04/01/2024 2:18	1	Forced Outage	Plant tripped due to DC charger failure due to busted fuse. (For further investigation)
HYD	10AGUS6_U02	31.1	03/31/2024 22:33	04/06/2024 3:32	6	Forced Outage	Forced outage due to oil contamination of lower guide bearing. (Unplanned Outage)
HYD	13TALOM23_G01	0.44	04/01/2024 0:00	04/07/2024 10:11	6	Planned Outage	Planned Outage. PMS (GOMP)
HYD	13TALOM23_G01	0.3	04/01/2024 0:00	04/07/2024 14:20	6	Planned Outage	Planned Outage. PMS (GOMP)
HYD	13TALOM23_G01	0.2	04/01/2024 0:00	04/07/2024 10:04	6	Planned Outage	Planned Outage. PMS (GOMP)
HYD	13TALOM23_G01	0.2	04/01/2024 0:00			Planned Outage	Planned Outage. PMS
HYD	13TALOM23_G01	0.2	04/01/2024 0:21	04/08/2024 12:05	7	Planned Outage	Planned Outage. PMS (GOMP)
HYD	13TALOM23_G01	0.2	04/01/2024 0:21			Planned Outage	Planned Outage. PMS
HYD	13TALOM23_G01	0.2	04/01/2024 0:24	04/08/2024 12:05	7	Planned Outage	Planned Outage. PMS (GOMP)
HYD	13TALOM23_G01	0.2	04/01/2024 0:24			Planned Outage	Planned Outage. PMS
HYD	13TALOM23_G01	0.2	04/01/2024 2:25	04/08/2024 11:58	7	Planned Outage	Planned Outage. PMS (GOMP)
HYD	13TALOM23_G01	0.2	04/01/2024 2:25			Planned Outage	Planned Outage. PMS
HYD	10AGUS5_U01	27.5	04/02/2024 8:03	04/06/2024 13:42	4	Planned Outage	PMS (GOMP). ETC May 10 2024
HYD	10AGUS7_U02	25.3	04/02/2024 9:01	04/14/2024 19:52	12	Planned Outage	PMS (GOMP). ETC April 15 2024. Planned Outage.
HYD	13TALOM1_G01	0.5	04/03/2024 6:28	04/24/2024 20:37	21	Forced Outage	Plant shutdown due to insufficient water supply. Unplanned Outage.
HYD	13TALOM1_G01	0.5	04/03/2024 6:28			Forced Outage	Plant shutdown due to insufficient water supply.
HYD	11PULA4_U02	75	04/03/2024 15:09	04/06/2024 7:12	3	Forced Outage	Emergency shutdown due to insufficient water supply (outside management control).
HYD	14ALMADA_G01	2.6	04/05/2024 8:03	04/06/2024 4:30	1	Forced Outage	Main Bus Low Voltage
HYD	11PULA4_U01	75	04/06/2024 12:02	04/08/2024 9:53	2	Forced Outage	Shutdown due to low forebay elevation (FBE) / Insufficient water supply.
HYD	11PULA4_U02	75	04/08/2024 10:01	04/12/2024 13:58	4	Forced Outage	Shutdown due to low forebay elevation (FBE) / Insufficient water supply.
HYD	10AGUS2_U01	60	04/10/2024 9:45	04/15/2024 15:49	5	Forced Outage	Emergency shutdown due to generator oil leak. (Unplanned Outage)
HYD	11MINBU_G01	6.6	04/11/2024 7:02	04/29/2024 10:02	18	Planned Outage	PMS (GOMP). ETC April 30 2024. Planned Outage.
HYD	10AGUS4_U03	52.7	04/11/2024 15:01	04/23/2024 10:15	12	Forced Outage	Shutdown due to low forebay elevation. Unplanned Outage.
HYD	10AGUS1_U01	35	04/11/2024 15:12	05/01/2024 18:12	20	Planned Outage	PMS (GOMP). ETC May 1 2024. Planned Outage.
HYD	11PULA4_U02	75	04/12/2024 15:03	05/01/2024 7:42	19	Forced Outage	Shutdown due to low forebay elevation (FBE) / Insufficient water supply. Unplanned Outage.
HYD	10AGUS5_U02	27.5	04/13/2024 8:02	04/17/2024 17:19	4	Planned Outage	PMS (GOMP). ETC Planned Outage.

Appendix A. Major Plant Outage

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Day/s)	Outage Type	Remarks
				Mindanao			
HYD	11PULA4_U01	75	04/13/2024 22:08	04/14/2024 18:07	1	Forced Outage	Shutdown due to low water reservoir elevation. Unplanned Outage.
HYD	10AGUS7_U02	25.3	04/14/2024 19:53	04/18/2024 8:46	4	Forced Outage	OMC due to low water inflow. Unplanned Outage.
HYD	11MNCBLG_G01	8.8	04/15/2024 1:01	04/21/2024 18:41	6	Planned Outage	Both units in shutdown mode in preparation for annual PMS starting today until April 21. Planned Outage
HYD	11MANFOR_G02	6.8	04/16/2024 7:00	04/18/2024 20:30	2	Planned Outage	PMS (GOMP). Planned Outage
HYD	11MANFOR_G02	6.8	04/16/2024 7:00	04/18/2024 20:30	2	Planned Outage	PMS (GOMP). Planned Outage
HYD	11MANFOR_G02	6.8	04/16/2024 7:01	04/18/2024 20:30	2	Planned Outage	PMS (GOMP). Planned Outage
HYD	10AGUS6_U03	50	04/16/2024 9:01	04/28/2024 12:44	12	Planned Outage	GOMP. ETC April 30 2024 2359H. Planned Outage
HYD	10AGUS6_U05	43.8	04/16/2024 20:27	04/19/2024 22:01	3	Forced Outage	Tripped with indication GET60 Frequency tripped Over/Under. Unplanned Outage.
HYD	10AGUS7_U01	26.1	04/18/2024 9:21	05/07/2024 8:57	19	Forced Outage	Online from OMC due to low water inflow / low forebay elevation. Unplanned Outage (outside management control).
HYD	11PULA4_U01	75	04/18/2024 11:10	04/19/2024 10:12	1	Forced Outage	Shutdown. Reason Insufficient water supply/ low forebay elevation (Unplanned Outage outside management control)
HYD	10AGUS6_U02	31.1	04/18/2024 18:00	04/19/2024 16:52	1	Forced Outage	Emergency shutdown. Reason Main inlet valve (butterfly valve) low pressure (Unplanned Outage).
HYD	11MANFOR_G02	6.8	04/18/2024 20:30	04/29/2024 16:49	11	Forced Outage	OMC outage from planned outage (GOMP) due to insufficient water supply.
HYD	11MANFOR_G02	6.8	04/18/2024 20:30	04/29/2024 19:19	11	Forced Outage	OMC outage from planned outage (GOMP) due to insufficient water supply.
HYD	11MANFOR_G02	6.8	04/18/2024 20:30	04/27/2024 12:11	9	Forced Outage	OMC outage from planned outage (GOMP) due to insufficient water supply.
HYD	13SIBULAN_G01	8.75	04/22/2024 8:59	04/23/2024 13:37	1	Forced Outage	Transfer of load from Sibulan A unit 1 to Sibulan A unit 2. Planned Outage
HYD	11PULA4_U01	75	04/23/2024 6:50	04/24/2024 5:55	1	Forced Outage	OMC outage due to low FBE. (Unplanned outage)
HYD	11PULA4_U01	75	04/25/2024 13:22	04/26/2024 16:07	1	Forced Outage	OMC outage due to low forebay elevation. Unplanned outage.
HYD	13TALOM1_G01	0.5	04/25/2024 20:44	04/30/2024 8:15	5	Forced Outage	Shutdown due to insufficient water supply (IWS).
HYD	10AGUS5_U02	27.5	04/27/2024 5:42	04/29/2024 11:53	2	Forced Outage	Online from OMC Outage - low forebay elevation (Unplanned Outage)
HYD	13TUDAY2_G01	8	04/27/2024 6:01	05/01/2024 17:38	4	Planned Outage	PMS (GOMP). ETC May 06 2024
HYD	10AGUS6_U05	43.8	04/27/2024 14:56	04/28/2024 21:41	1	Forced Outage	Emergency shutdown due to the smoke noticed emanating from the generator floor. Unplanned Outage.
HYD	11PULA4_U01	75	04/28/2024 0:47	04/29/2024 10:06	1	Forced Outage	OMC Outage due to low forebay elevation.
HYD	10AGUS5_U01	27.5	04/29/2024 14:14	05/15/2024 2:58	16	Forced Outage	Shutdown due to low forebay elevation. (OMC Outage)
HYD	11MANFOR_G02	6.8	04/29/2024 16:52	04/30/2024 21:14	1	Forced Outage	Insufficient water supply (Unplanned Outage)
HYD	10AGUS6_U01	31.5	05/01/2024 14:28	05/02/2024 21:18	1	Forced Outage	Shutdown due to low forebay elevation (FBE) / Insufficient water supply. Unplanned Outage.
HYD	13TALOM1_G01	0.5	05/02/2024 8:45	05/10/2024 20:16	8	Forced Outage	Plant isolated due to Insufficient Water Supply. (OMC Outage)
HYD	13TALOM1_G01	0.5	05/02/2024 8:45			Forced Outage	Plant isolated due to Insufficient Water Supply.
HYD	11MANFOR_G02	6.8	05/02/2024 9:21	05/04/2024 13:13	2	Forced Outage	Shutdown due to insufficient water supply (Unplanned Outage).
HYD	11PULA4_U01	75	05/02/2024 15:04	05/14/2024 23:14	12	Forced Outage	Shutdown due to low forebay elevation (OMC Outage).
HYD	11MANFOR_G01	16.2	05/03/2024 15:01	05/07/2024 7:38	4	Forced Outage	Shutdown due to insufficient water supply (Unplanned Outage).
HYD	11PULA4_U02	75	05/04/2024 7:07	05/06/2024 14:15	2	Forced Outage	Shutdown due to low forebay elevation (Unplanned Outage outside management control)
HYD	11MANFOR_G02	6.8	05/04/2024 13:05	05/24/2024 22:42	20	Forced Outage	Shutdown due to insufficient water supply (OMC Outage).
HYD	11MANFOR_G02	6.8	05/04/2024 13:05	05/24/2024 22:33	20	Forced Outage	Shutdown due to insufficient water supply (OMC Outage).
HYD	14MARBEL_U01	0.5	05/05/2024 23:01	05/06/2024 15:00	1	Forced Outage	Insufficient water supply.
HYD	13TALOM23_G01	0.44	05/06/2024 13:32			Forced Outage	Plant tripped due to Double Line to Ground Trip(ACG T) indication.
HYD	13TALOM23_G01	0.2	05/06/2024 13:32	05/07/2024 18:02	1	Forced Outage	Plant tripped due to Double Line to Ground Trip(ACG T) indication.
HYD	11MANFOR_G02	6.8	05/07/2024 7:07	05/18/2024 20:06	11	Forced Outage	Shutdown due to insufficient water supply (OMC Outage).
HYD	11MANFOR_G01	16.2	05/07/2024 7:12	05/12/2024 15:03	5	Planned Outage	Shutdown-(Planned Outage-GOP)
HYD	11MANFOR_G01	16.2	05/07/2024 7:38	05/12/2024 16:17	5	Planned Outage	Shutdown-(Planned Outage-GOP)
HYD	11MANFOR_G01	6.6	05/07/2024 7:39	05/10/2024 18:57	3	Planned Outage	Shutdown-(Planned Outage-GOP)
HYD	10AGUS1_U02	35	05/07/2024 8:13	05/25/2024 13:11	18	Planned Outage	Online from PMS (GOMP). ETC May 27 2024. Planned Outage
HYD	11PULA4_U02	75	05/07/2024 10:39	05/10/2024 22:39	3	Forced Outage	Emergency shutdown due to low forebay elevation.(OMC Outage)
HYD	10AGUS7_U02	25.3	05/08/2024 12:20	05/31/2024 5:38	23	Forced Outage	Declared available from PMS but remain s/d due to Low water elevation. (OMC Outage).
HYD	11MANFOR_G01	6.6	05/09/2024 7:08	05/10/2024 19:05	1	Planned Outage	Shutdown - PMS (GOMP). Planned Outage. ETC May 10 2024. 1900H.
HYD	10AGUS6_U04	25	05/09/2024 9:03	05/10/2024 15:38	1	Planned Outage	Synchronized back. Shutdown. PMS-GOMP. (Planned Outage)
HYD	13TALOM1_G01	0.5	05/12/2024 2:01	05/22/2024 1:38	10	Forced Outage	Shutdown due to insufficient water supply. (OMC Outage)
HYD	11MANFOR_G01	16.2	05/12/2024 16:25	05/16/2024 21:52	4	Forced Outage	Insufficient water supply.
HYD	11PULA4_U02	75	05/13/2024 13:08	05/27/2024 10:45	14	Forced Outage	Online from OMC Shutdown due to low forebay elevation.
HYD	11MINBU_G01	6.6	05/13/2024 21:32	05/14/2024 0:29	1	Forced Outage	OMC outage due to IWS(Insufficient Water Supply).
HYD	13TALOM23_G01	0.44	05/15/2024 20:20			Forced Outage	Plant isolated affected by tripping of DLPC Tugbok Feeder. (OMC)
HYD	13TALOM23_G01	0.3	05/15/2024 20:20	05/16/2024 0:15	1	Forced Outage	Plant isolated affected by tripping of DLPC Tugbok Feeder. (OMC)
HYD	13TALOM23_G01	0.2	05/15/2024 20:20	05/16/2024 0:11	1	Forced Outage	Plant isolated affected by tripping of DLPC Tugbok Feeder. (OMC)
HYD	13TALOM23_G01	0.93	05/15/2024 23:39	05/16/2024 0:07	1	Forced Outage	Lower Talomo Main VCB tripped. Ind. Line to ground. (Forced Outage)
HYD	13TALOM23_G01	0.93	05/15/2024 23:39	05/16/2024 0:09	1	Forced Outage	Lower Talomo Main VCB tripped. Ind. Line to ground. (Forced Outage)
HYD	11PULA4_U01	75	05/16/2024 4:17	05/25/2024 4:07	9	Forced Outage	Shutdown due to low water elevation.
HYD	11MANFOR_G01	6.6	05/16/2024 15:01	05/18/2024 0:47	2	Forced Outage	Cause 13.8kV Bus Protection Fault
HYD	11MANFOR_G01	16.2	05/16/2024 15:50	05/18/2024 0:48	2	Forced Outage	Cause 13.8kV Bus Protection Fault
HYD	12ASIGA_G01	8.6	05/17/2024 0:01	06/11/2024 9:58	25	Forced Outage	Insufficient water supply. (OMC Outage)
HYD	12ASIGA_G01	8.6	05/17/2024 0:01			Planned Outage	Scheduled maintenance (GOMP). Planned outage. ETC June 17 2024
HYD	11MANFOR_G01	16.2	05/17/2024 12:08	05/18/2024 0:48	1	Forced Outage	Forced outage. Comprehensive assessment of 138kV Equipment. ETC 2400H May 17 2024.
HYD	11MANFOR_G01	6.6	05/17/2024 12:08	05/18/2024 0:47	1	Forced Outage	Forced outage. Comprehensive assessment of 138kV Equipment. ETC 2400H May 17 2024.
HYD	11MANFOR_G01	16.2	05/18/2024 0:48	05/24/2024 20:52	6	Forced Outage	OMC due to Insufficient water supply.
HYD	10AGUS1_U01	35	05/18/2024 8:09	05/19/2024 16:56	1	Forced Outage	PMS(Non-GOMP).
HYD	13SIBULAN_G01	8.75	05/18/2024 20:41	05/19/2024 8:51	1	Forced Outage	Plant shutdown due to insufficient water supply. (OMC Outage)
HYD	13SIBULAN_G01	14	05/18/2024 20:45	05/19/2024 8:55	1	Forced Outage	Plant shutdown due to insufficient water supply. (OMC Outage)
HYD	11MINBU_G01	6.6	05/18/2024 21:58	05/19/2024 1:01	1	Forced Outage	Shutdown due to insufficient water supply (OMC Outage).
HYD	13EUROH_G01	3	05/19/2024 23:27	05/20/2024 3:10	1	Forced Outage	Shutdown due to insufficient water supply. (OMC Outage)
HYD	13SIBULAN_G01	14	05/20/2024 11:53	05/22/2024 5:37	2	Forced Outage	Plant shutdown due to insufficient water supply. (OMC Outage)
HYD	11MINBU_G01	6.6	05/21/2024 23:32	05/22/2024 2:14	1	Forced Outage	OMC outage due to IWS(Insufficient Water Supply).
HYD	13TALOM1_G01	0.5	05/23/2024 3:42	06/03/2024 1:01	11	Forced Outage	Insufficient water supply.(OMC Outage)
HYD	13TALOM1_G01	0.5	05/23/2024 3:42			Forced Outage	OMC due to Insufficient water supply.
HYD	13TALOM23_G01	0.93	05/24/2024 8:03	06/07/2024 23:59	14	Planned Outage	Plant shutdown due to Annual PMS.(GOMP) ETC June 7 2024 at 2359H
HYD	13EUROH_G01	3	05/24/2024 22:25	05/25/2024 1:20	1	Forced Outage	Shutdown due to insufficient water supply. (OMC Outage)
HYD	13TALOM23_G01	0.93	05/25/2024 0:05	05/31/2024 20:47	6	Planned Outage	Plant shutdown due to Annual PMS.(GOMP) ETC May 31 2024 at 2359H
HYD	11PULA4_U03	75	05/25/2024 6:05	05/26/2024 0:40	1	Forced Outage	Online from OMC Outage- affected by the P&E request to undertake test and simulation of the newly installed PCBs and its protection system - ERC Approved MSRP Stage I Schedule II.
HYD	10AGUS5_U02	27.5	05/25/2024 19:52	05/29/2024 8:48	4	Forced Outage	Shutdown due to low forebay elevation. (Unplanned Outage)
HYD	13EUROH_G01	3	05/25/2024 22:22	05/26/2024 1:05	1	Forced Outage	Insufficient water supply (OMC Outage).
HYD	10AGUS6_U04	25	05/26/2024 23:33	05/27/2024 16:21	1	Forced Outage	Forced outage. Emergency shutdown due to unbalanced voltage (to inspect its potential transformer).
HYD	13SIBULAN_G01	14	05/30/2024 8:51	06/03/2024 14:07	4	Forced Outage	Shutdown due to insufficient water supply (OMC Outage)
HYD	13EUROH_G01	3	05/31/2024 19:38	06/01/2024 0:20	1	Forced Outage	Isolation due to NORDECO Feeder Outage. (OMC Outage)
HYD	11PULA4_U02	75	06/01/2024 18:11	06/03/2024 9:01	2	Forced Outage	Shutdown due to Low Water Forebay Elevation. Outside Management Control (OMC).
HYD	14ALMADA_G01	2.6	06/02/2024 16:57	06/03/2024 1:25	1	Forced Outage	Shutdown. Affected by COTELCO-PPalma Feeder Line tripping.(OMC)Outage.
HYD	11MINBU_G01	6.6	06/02/2024 22:17	06/03/2024 0:10	1	Forced Outage	OMC outage due to IWS(Insufficient Water Supply).
HYD	14MARBEL_U01	0.5	06/02/2024 23:19	06/03/2024 14:30	1	Forced Outage	Plant shutdown due to NIA INTAKE GATE closed.
HYD	13TALOM1_G01	0.5	06/03/2024 10:42	06/04/2024 8:50	1	Forced Outage	Declared unavailable due to insufficient water supply. (OMC Outage)
HYD	11PULA4_U02	75	06/03/2024 14:22	06/04/2024 0:02	1	Forced Outage	Shutdown due to low Water Forebay Elevation. (OMC outage)
HYD	11PULA4_U03	75	06/03/2024 22:35	06/04/2024 10:05	1	Forced Outage	Forced outage. Indication Main Transformer trip.
HYD	13TALOM1_G01	0.5	06/04/2024 8:52			Forced Outage	Shutdown due to insufficient water supply. (OMC Outage)
HYD	11MINBU_G01	6.6	06/04/2024 21:47	06/05/2024 0:32	1	Forced Outage	OMC outage due to IWS(Insufficient Water Supply).
HYD	13TALOM1_G01	0.5	06/05/2024 0:00	06/10/2024 19:11	5	Planned Outage	Planned Shutdown. (GOMP) ETC June 11 2024 at 2359H
HYD	13TALOM1_G01	0.5	06/05/2024 0:00	06/10/2024 7:13	5	Planned Outage	Planned Shutdown. (GOMP) ETC June 11 2024 at 2359H
HYD	11PULA4_U02	75	06/05/2024 8:02			Forced Outage	PMS. (Planned outage). ETC July 19 2024 at 2359H.
HYD	14MARBEL_U01	0.5	06/05/2024 11:28	06/06/2024 7:10	1	Forced Outage	Plant Shutdown due to NIA intake gate closed. (OMC Outage).
HYD	10AGUS2_U01	60	06/06/2024 8:05	06/17/2024 14:13	11	Planned Outage	PMS(GOMP). ETC June 17 2024
HYD	13TALOM23_G01	0.93	06/06/2024 22:08	06/08/2024 6:11	2	Forced Outage	Plant Tripped due to very high drive end bearing temperature.
HYD	13TALOM23_G01	0.93	06/08/2024 0:00	06/09/2024 2:00	1	Forced Outage	Extended GOMP
HYD	14MARBEL_U01	0.5	06/08/2024 20:00	06/10/2024 10:35	2	Forced Outage	Shutdown due to closed NIA gate. (OMC Outage)
HYD	13TALOM1_G01	0.5	06/10/2024 7:13	06/13/2024 1:44	3	Forced Outage	Declared unavailable due to insufficient water supply. (OMC Outage)
HYD	13TALOM23_G01	0.93	06/10/2024 10:06	06/11/2024 1:51	1	Forced Outage	Plant shutdown due to adjustment of Bearing clearance. Unplanned Outage.
HYD	14MARBEL_U01	0.5	06/11/2024 23:57	06/12/2024 0:10	1	Forced Outage	Plant Shutdown due to Recloser tripping affected by SOCOTECO I Line fault. (OMC Outage).

Appendix A. Major Plant Outage

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Day/s)	Outage Type	Remarks
Mindanao							
HYD	10AGUS4_U01	52.7	06/13/2024 8:03			Planned Outage	PMS (GOMP). ETC August 2 2024.
HYD	10AGUS4_U02	52.7	06/13/2024 8:08			Planned Outage	PMS (GOMP). ETC August 2 2024.
HYD	10AGUS4_U03	52.7	06/13/2024 8:15			Planned Outage	PMS (GOMP). ETC August 2 2024.
HYD	13SIBULAN_G01	14	06/13/2024 20:39	06/14/2024 20:11	1	Forced Outage	Plant shutdown due to insufficient water supply. (OMC Outage)
HYD	13SIBULAN_G01	14	06/14/2024 20:19	06/21/2024 2:24	7	Forced Outage	Plant shutdown due to insufficient water supply. (OMC Outage)
HYD	13TALOM1_G01	0.5	06/14/2024 23:04	06/17/2024 20:33	3	Forced Outage	Plant shutdown due to insufficient water supply. (OMC Outage)
HYD	14MARBEL_U01	0.5	06/15/2024 19:09	06/17/2024 11:00	2	Forced Outage	Plant Shutdown affected by SOCOTECO I Feeder Line fault and at 1924H can not synch back due to tailrace water Level rising.(OMC Outage).
HYD	13TALOM1_G01	0.5	06/18/2024 11:11	06/19/2024 7:11	1	Forced Outage	Plant shutdown due to insufficient water supply. (OMC Outage)
HYD	13TALOM1_G01	0.5	06/19/2024 14:07	06/24/2024 16:19	5	Forced Outage	Shutdown due to insufficient water supply. (OMC Outage)
HYD	13SIBULAN_G01	14	06/21/2024 12:17	06/22/2024 0:16	1	Forced Outage	Plant shutdown due to insufficient water supply. (OMC Outage)
HYD	13SIBULAN_G01	14	06/23/2024 22:43	06/24/2024 2:19	1	Forced Outage	Affected due to forced outage of DLPC s Puan Switching Station. (OMC Outage)
HYD	13SIBULAN_G01	14	06/23/2024 22:43	06/24/2024 0:18	1	Forced Outage	Affected due to forced outage of DLPC s Puan Switching Station. (OMC Outage)
HYD	13SIBULAN_G01	8.75	06/23/2024 22:43	06/24/2024 1:17	1	Forced Outage	Affected due to forced outage of DLPC s Puan Switching Station. (OMC Outage)
HYD	13TUDAY2_G01	8	06/23/2024 22:47	06/24/2024 3:18	1	Forced Outage	Shutdown due to insufficient water supply. (OMC Outage)
HYD	13SIBULAN_G01	14	06/24/2024 2:01			Forced Outage	Emergency shutdown due to high temperature of bearing. (Forced Outage)
OIL	09WMPC_U10	10.2	04/08/2024 7:10	04/10/2024 15:20	2	Forced Outage	Declared not available. Reason Charger A-bank heavy air leak (Unplanned Outage).
OIL	12KEGGIN_G01	10.6	04/15/2024 15:05			Forced Outage	Failed to synchronize due to low SF6 Pressure on PCB. Forced Outage (Unplanned Outage)
OIL	09WMPC_U02	10.2	04/15/2024 18:35	04/16/2024 9:00	1	Forced Outage	Forced outage unable to Synchronize. Declared available at 0900H.
OIL	13MAGDBNK_G01	4.3	04/17/2024 13:08	04/18/2024 1:03	1	Forced Outage	Forced Outage Unable to synchronize due to inadequate starting air pressure of Unit 1. Unplanned Outage
OIL	09WMPC_U02	10.2	04/17/2024 20:41	04/18/2024 10:30	1	Forced Outage	Forced outage indication Generator driving and bearing Temperature shutdown. Unplanned Outage. Declared available at 1030H 18 Apr 2024.
OIL	13MAGDBNK_G01	4.3	04/18/2024 13:12	04/19/2024 1:36	1	Forced Outage	Forced Outage Unable to sync due to charge bearing sliding of VCB 1. Declared available at 0136H 19 Apr 2024.
OIL	13MAGDBNK_G01	4.3	04/19/2024 13:05	04/20/2024 1:33	1	Forced Outage	Forced Outage Unable to sync due to low lubricating oil pressure of engine.
OIL	10IDPP_G01	102	04/19/2024 19:54	04/20/2024 19:00	1	Forced Outage	Forced outage. Unable to process fuel.
OIL	10IDPP_G01	102	04/24/2024 0:00	05/04/2024 14:00	10	Forced Outage	MPC(IDPP) Unit 2 Forced outage due to high temp lube oil. No ETC.MPC(IDPP) Unit 5 Forced outage due to erratic load. No ETC.
OIL	09WMPC_U06	10.2	04/24/2024 10:31			Forced Outage	Shutdown due to oil mist concentration high stop. No ETC. Forced Outage (Unplanned Outage)
OIL	09WMPC_U06	10.2	04/24/2024 10:31			Forced Outage	Forced outage due to oil mist concentration high stop. Unplanned outage. No ETC.
OIL	13MAGDBNK_G01	4.6	04/26/2024 11:00	05/09/2024 22:24	13	Forced Outage	Declared Available from FO - Overvoltage output problem. (Unplanned Outage)
OIL	10MEGC_G01	6.4	04/29/2024 10:00	04/30/2024 17:00	1	Forced Outage	Declared unavailable due to leaking at jacket cooling. ETC Apr.30 2024 / 500 pm
OIL	09WMPC_U04	10.2	05/04/2024 9:00	05/07/2024 15:15	3	Forced Outage	Declared Available - from forced outage due to replacement of exhaust gas vello and inspection of turbo charger B-bank (Unplanned Outage).
OIL	09WMPC_U04	10.2	05/04/2024 9:00			Forced Outage	Declared forced outage due to replacement of exhaust gas vello and inspection of turbo charger B-bank (Unplanned Outage).
OIL	09WMPC_U03	10.2	05/07/2024 20:34	05/08/2024 16:15	1	Forced Outage	Emergency shutdown due to exhaust gas leak. Forced Outage.
OIL	09WMPC_U09	10.2	05/14/2024 14:35	05/15/2024 7:40	1	Forced Outage	Indication HT cooler high temp.
OIL	12PKSFRA_U01	5.2	05/22/2024 19:00	05/23/2024 15:03	1	Forced Outage	Forced outage. Declared not available due to hotspot at CT terminal.
OIL	09WMPC_U04	10.2	05/26/2024 9:49	05/29/2024 17:00	3	Forced Outage	Tripped. Cause Turbo charger shock pulse alarm (Unplanned Outage)
OIL	09WMPC_U02	10.2	06/04/2024 14:39	06/05/2024 17:00	1	Forced Outage	Declared unavailable due to emergency cooling tower 2 pipeline heavy leak. Unplanned Outage.
OIL	09WMPC_U01	10.2	06/04/2024 14:39	06/05/2024 17:00	1	Forced Outage	Emergency shutdown due to emergency cooling tower 2 pipeline heavy leak. Unplanned Outage.
OIL	09WMPC_U10	10.2	06/10/2024 13:05	06/12/2024 14:30	2	Forced Outage	Tripped. Indication Lube oil low pressure stop (Unplanned Outage).
OIL	09WMPC_U04	10.2	06/12/2024 18:19	06/13/2024 16:35	1	Forced Outage	Declared available from FO. Indication Turbo charger shocked pulse alarm. (Unplanned Outage)
SOLR	11KIRAS_G01	10	05/05/2024 18:02	05/07/2024 9:43	2	Forced Outage	Emergency maintenance of 5XF01KSO due to oil leak.
SOLR	11KIRAS_G01	10	05/10/2024 18:17	05/12/2024 14:00	2	Forced Outage	Emergency shutdown for Power Transformer re-gasketing activity. (Forced Outage)

Appendix B. Congested Equipment

Equipment Name	Trading Intervals	Percent of Time
4MAAS_7UBA1	8961	34%
5SAMB_6AML1	3064	12%
1BAUA_1BPP1	1817	7%
5CEBU_5MAN2	1149	4%
8BARO_8DIN2	1024	4%
1MEXI_1HER2	926	3%
CLTRAVA_TO_CADIZ	771	3%
1MEXI_1HER1	672	3%
8BARO_8DIN1	593	2%
5SAMB_6AML2	551	2%
1BALNEO_TR1	436	2%
CEBU_TO_NEGROS	344	1%
12PLACE_TR2	341	1%
9NAGA_TR1	202	1%
1PVS_TR1	183	1%
DASMA_CORR	181	1%
1PVS_TR2	177	1%
1HERM_1MAL1	117	0.4%
3DASMA_TR1	113	0.4%
1PVP_TR1	108	0.4%
1BAUA_1LAT1	80	0.3%
1BAUA_1LAT2	67	0.3%
9NAGA_TR2	60	0.2%
4CLBYOG_TR1	59	0.2%
3TAYAB_TR2	58	0.2%
3DASMA_TR3	52	0.2%
7CORELL_TR1	46	0.2%
7UBAY_TR1	42	0.2%
2QUEZ_2ARA1	40	0.2%
3AMAD_3CLA1	39	0.1%
3DASMA_TR2	29	0.1%
5DAAN_4TAB1	29	0.1%
1DUHAT_TR1	27	0.1%
LEYTE_TO_CEBU	24	0.1%
1CAYANGA_TR2	24	0.1%
3TAYAB_TR1	24	0.1%

Equipment Name	Trading Intervals	Percent of Time
1SNRAFA_TR1	24	0.1%
3SNJUAN_TR2	23	0.1%
1BING_1NGS1	23	0.1%
5MNDUE_TR2	23	0.1%
1BOTOL_TR2	21	0.1%
6CADIZ_TR1	20	0.1%
3DASMA_TR8	19	0.1%
14TACUR_TR2	15	0.1%
3SNJUAN_TR1	13	0.0%
3AMAD_3CLA2	13	0.0%
14KIDAP_TR1	12	0.0%
8NABAS_TR1	12	0.0%
1SJO230_TR1	11	0.0%
1BAUAN_TR2	9	0.0%
3CALAUA_TR1	9	0.0%
3DASM_3AMA1	8	0.0%
2MUNTIN_TR4	6	0.0%
12SFRAN_TR1	6	0.0%
5CEBU_TR3	6	0.0%
11VILL_11JAS2	6	0.0%
8NABAS_TR2	6	0.0%
3DARAGA_TR1	5	0.0%
6PGPP1_TR3	4	0.0%
3CALAMBA_TR2	4	0.0%
8ILO1_TR1	4	0.0%
14TACUR_TR4	4	0.0%
6PGPP1_TR1	3	0.0%
3BINAN_TR3	3	0.0%
1CNCEPCN_TR2	3	0.0%
1SNMAN_TR1	3	0.0%
3CALAMBA_TR1	2	0.0%
1HERM_1DUH1	2	0.0%
6PGPP1_TR2	1	0.0%
1CURIM_TR2	1	0.0%
5MAND_5LAP2	1	0.0%