



Market Surveillance Committee Monthly Market Assessment Report

26 January 2023 to 25 February 2023

May 2023

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

MONTHLY MARKET ASSESSMENT REPORT

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Monthly Market Assessment Report – February 2023

MONTHLY MARKET ASSESSMENT REPORT

ASSESSMENT OF THE MARKET NOTABLE HIGHLIGHTS

1. **WESM Mindanao commences operation** on 26 January 2023.
2. **Line 2 of the 138kV Cebu-Mandaue** underground line was damaged during the excavation activities of the DPWH on 21 January 2023.
 - Congestion in Cebu-Mandaue line 1 was observed.
3. **Malampaya conducted a 15-day maintenance shutdown** on 04-18 February 2023.
4. **Congestions in transmission lines and transformer equipment** resulted from the current design of the transmission system, as well as the N-1 contingency impositions by the System Operator (SO). Some notable congestions were as follows:
 - **Maasin-Ubay line 1** was congested for 953 intervals, or equivalent to 11% of the time, brought about by the frequent maximization of the line's capacity limit.
 - **Mexico-Hermosa lines 1&2** was congested for 600 and 887, or equivalent to 7% and 10% of the time, respectively, brought about by natural congestion due to high demand situation.
 - **Samboan-Amlan line 1** was congested for 638 intervals, or equivalent to 7% of the time, brought about by the current system design, and
 - **Cebu-Mandaue line 1** for 1,197 intervals, or equivalent to 13% of the time, brought about by the unavailability of Cebu-Mandaue line 2.

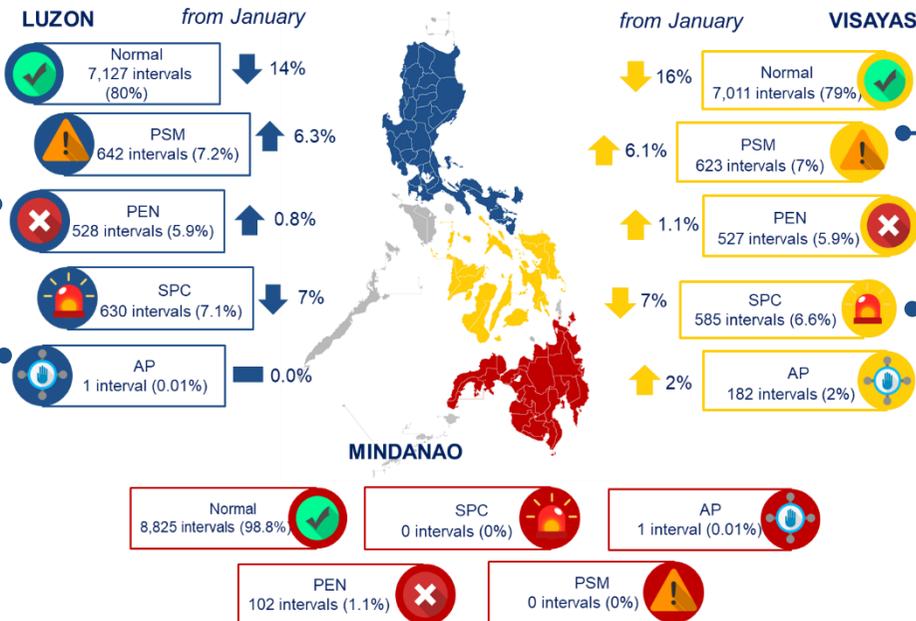
Pricing Error Notice (PEN)

- Impositions were due to inappropriate input data which affected prices and schedules both for Luzon and Visayas.
- Regional imposition for 1 interval was noted in Luzon, during those instances when the inter-connection between the grids was unavailable and 102 intervals in Mindanao.

Three (3) Market Intervention (MI) events noted.

- **08 February 2023 (1305H-1655H):** SO declared MI due to critical loading of 138kV Cebu-Mandaue Line 1
- **18 February 2023 at 1540H:** MO-initiated Market intervention caused by non-generation of RTD due to database-related error.
- **20 February 2023 (1125H-2230H):** SO declared MI due to total power failure in Panay sub-grid

SUMMARY OF PRICING CONDITIONS



Price Substitution Methodology (PSM)

System-wide imposition for 78 intervals on 28-29 and 31 January, and 03, 7-19, 22 and 25 February 2023.

Secondary Price Cap (SPC)

- **System-wide:** increased impositions from last month due to depleted supply margin resulting in high market prices from 07-09 and 11-12 February 2023.
- **Regional:** 2 intervals for Visayas and 47 intervals for the Luzon region during those instances when the inter-connection between the grids was unavailable and the prevailing prices in the respective regions were noted to be high.

MONTHLY MARKET ASSESSMENT REPORT

MARKET OUTCOME: LUZON AND VISAYAS

EFFECTIVE SUPPLY



11,701
MW
(11,086MW in January)

DEMAND PLUS RESERVE SCHEDULE



11,069
MW
(10,351MW in January)

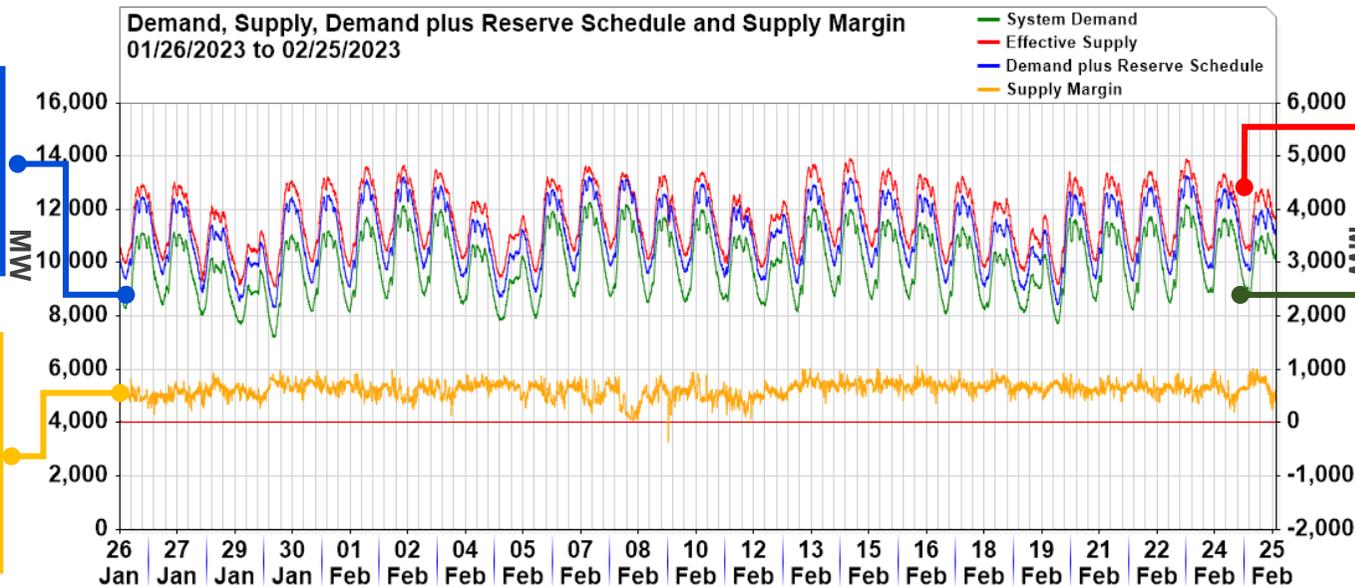
SUPPLY MARGIN



632
MW
(736 MW in January)

Demand plus Reserve Schedules increased by an average of 6.9% mainly caused by the growth in economic activities which influenced the electricity consumption for the month.

Supply Margin decreased by 14.1% considering the dynamics between the supply and demand. Episodes of thin supply margin was observed during instances of abrupt change in the supply level due to, among others, forced outages.



Effective Supply increased by 5.5% or was noted at an average of 11,701MW from 11,086MW last billing period even if there was a noted increase in the capacities on outage this month. The effects of ramp limited capacities, as considered in the determination of the effective supply, also decreased which likewise contributed in the resulting higher effective supply for this billing period.

System Demand decreased by 6.9% or was noted to be at 10,012 MW from 9,362 MW last billing period.

MONTHLY MARKET ASSESSMENT REPORT

MARKET OUTCOME: MINDANAO

EFFECTIVE SUPPLY



2,363
MW

DEMAND PLUS RESERVE SCHEDULE

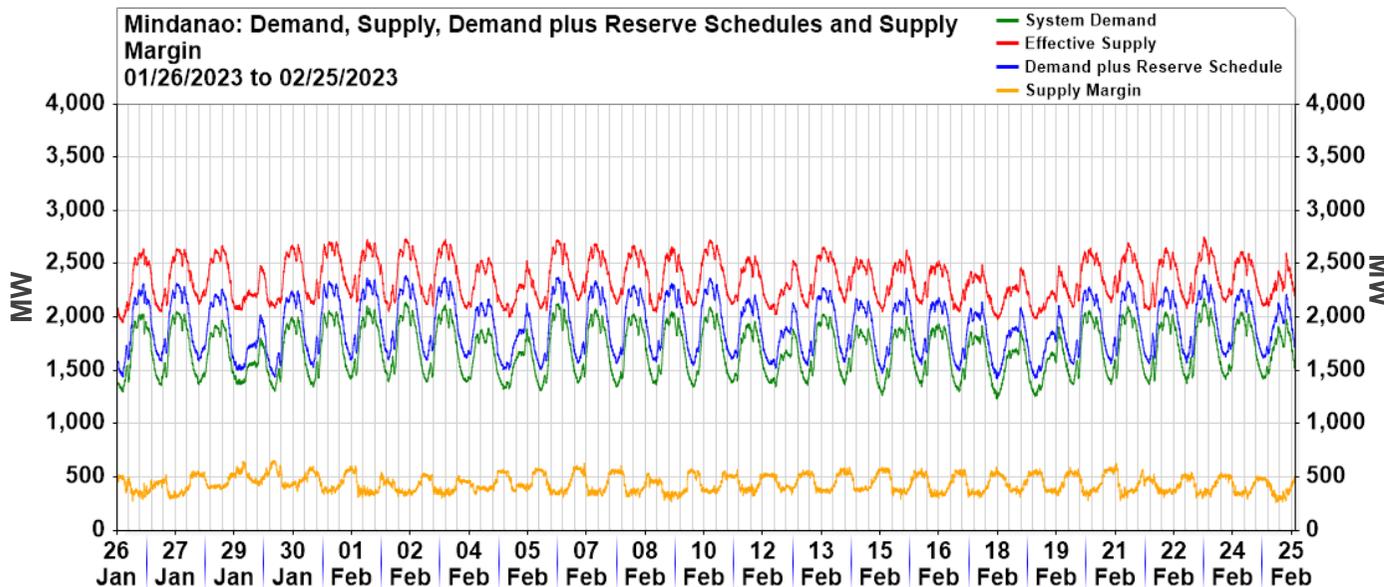


1,921
MW

SUPPLY MARGIN



442
MW



Upon commencement of the WESM in Mindanao the following information were noted for the February 2023 billing period:

- Generation Capacity is at 3,297MW but only 72% were considered as effective supply in consideration of plant outages, technical limitations, and plant derations, among others.
- System Peak Demand was noted at 2,179MW which occurred on 23 February 2023 at 1430H trading interval.
- Supply Margin is quite wide considering the interplay between the supply and demand.

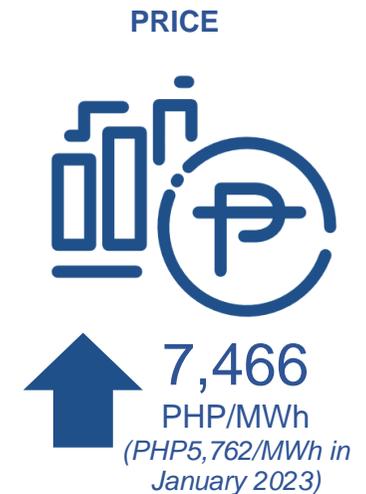
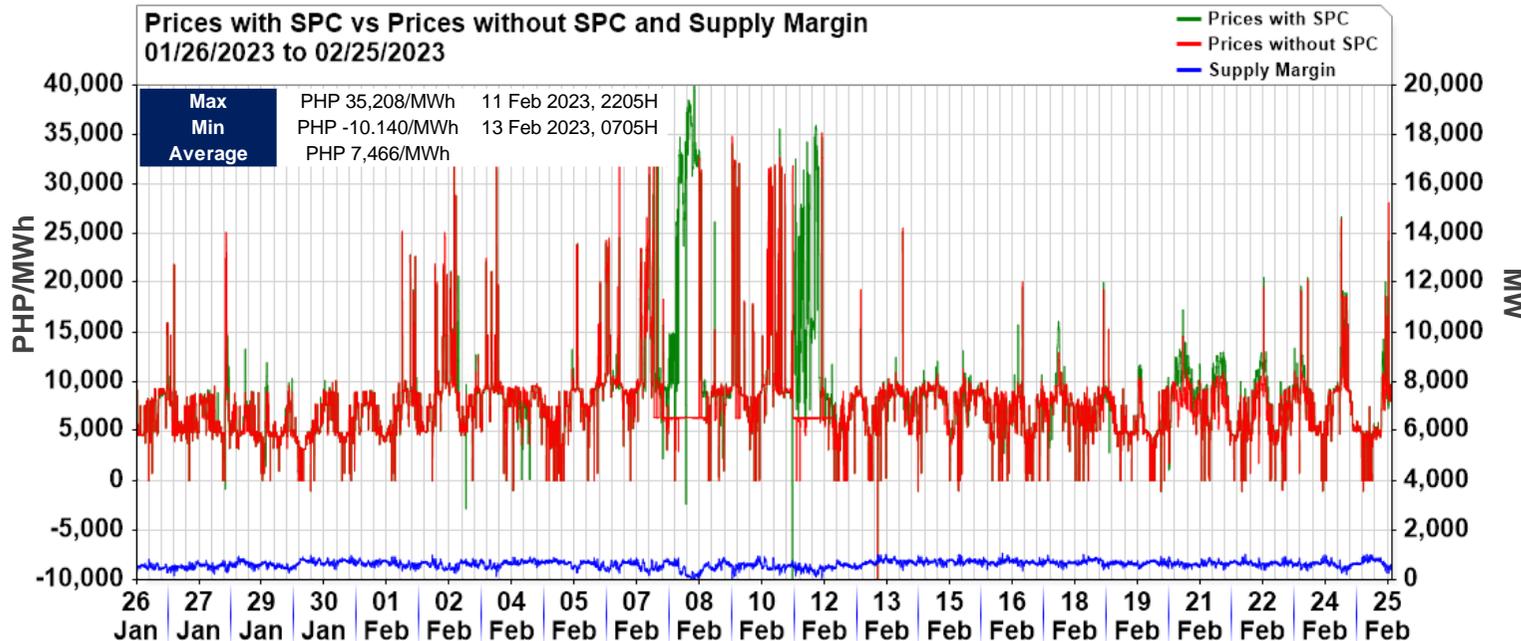
MONTHLY MARKET ASSESSMENT REPORT

MARKET OUTCOME: LUZON AND VISAYAS

Zone	Average LWAP (PHP/MWh)
NLUZON	7,242.19
MMANILA	7,426.58
SLUZON	7,350.97
LEYTE	7,569.11
CEBU	7,656.22
NEGROS	8,514.32
BOHOL	9,619.47
PANAY	8,733.98

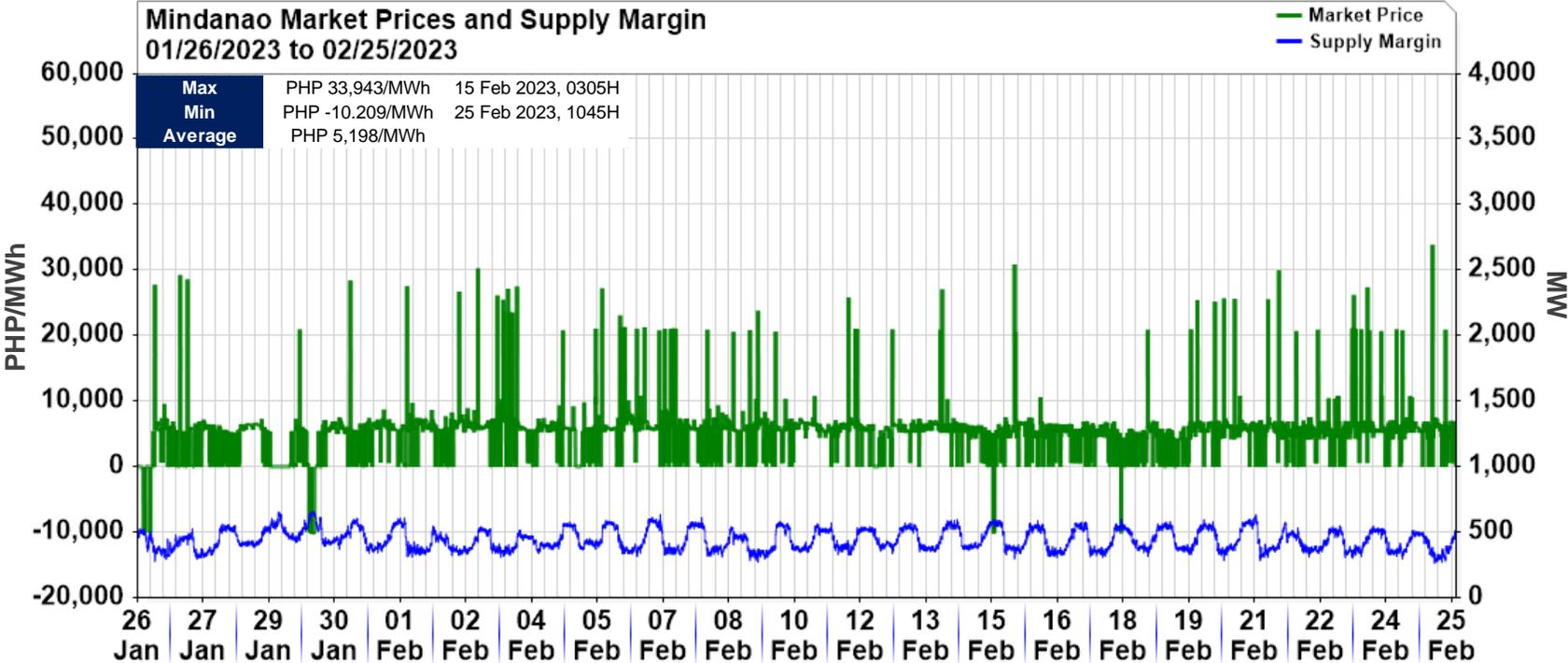
Given the dynamics between the supply and demand, the level of market prices increased by 29.6% or was noted to be at an average of PHP7,466/MWh from PHP5,762/MWh last billing period. The year-on-year comparison posted a 25.4% increase from an average price of PHP5,954/MWh last year. While it was noted that the capacities on outages in February 2023 billing period being lower than the same period of last year, the increase on the price was brought about by the changes in offer behavior.

Congestion in Leyte-Bohol interconnection was still persistent due to tight supply situation in the Bohol grid which, in turn, continuously affected the power rates in the area causing disparity, as depicted in the table of prices.



MONTHLY MARKET ASSESSMENT REPORT

MARKET OUTCOME: MINDANAO



PRICE

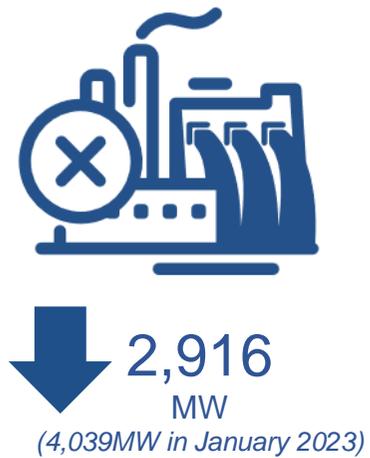
5,198
PHP/MWh

For the Mindanao region, the level of market prices was noted to be at an average of PHP5,198/MWh. Episodes of price spikes were mainly brought about by the abrupt change in the supply due to forced outages of baseload power plants in the region which led for oil-based power plants with high offered prices to be dispatched in the WESM.

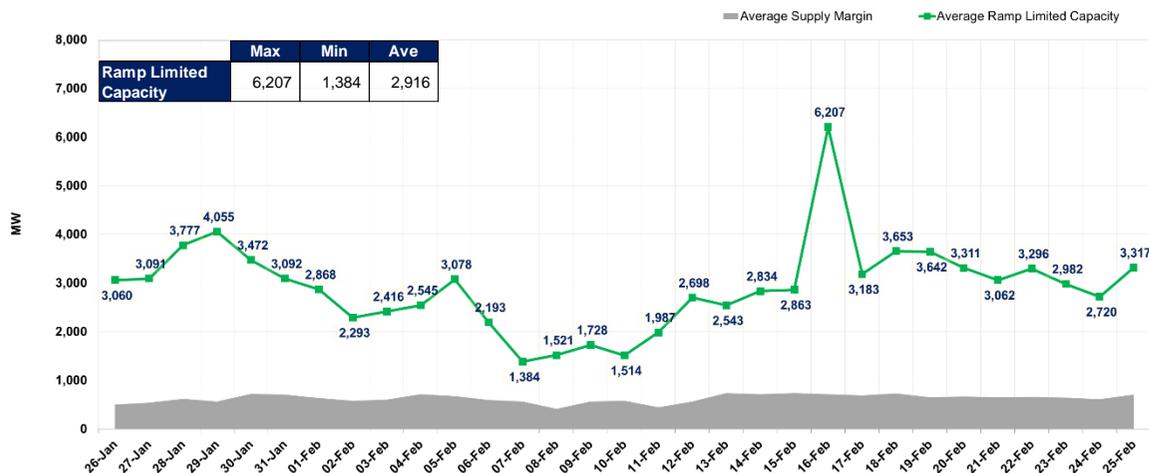
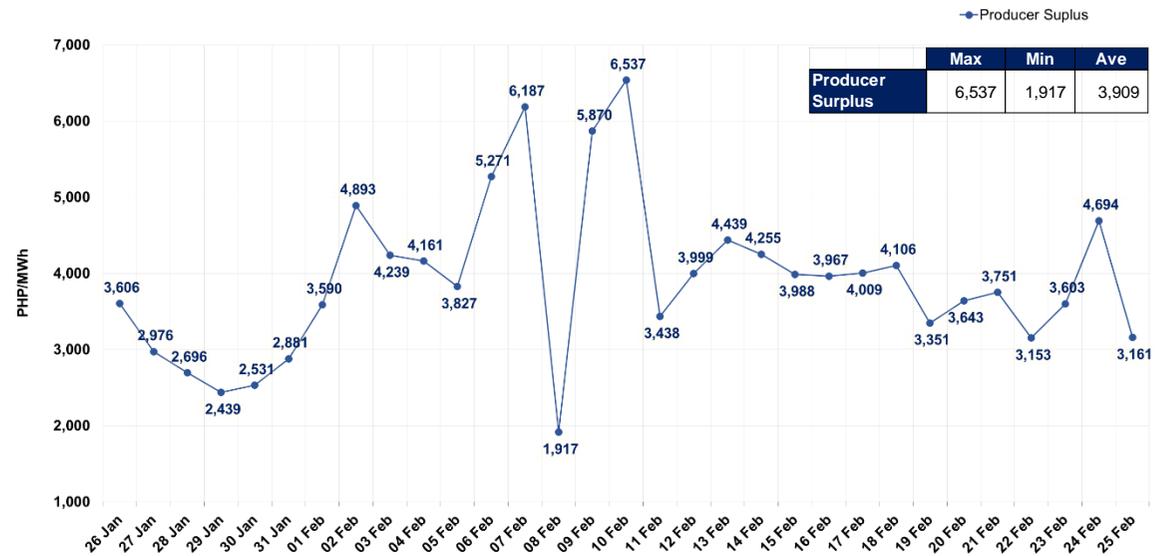
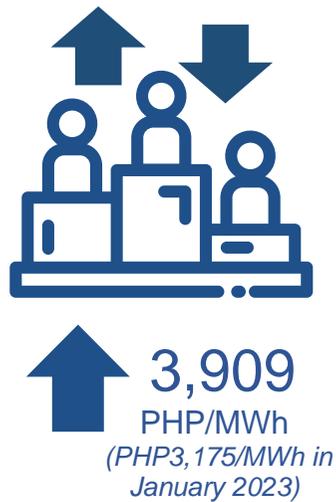
MONTHLY MARKET ASSESSMENT REPORT

MARKET OUTCOME: LUZON AND VISAYAS

RAMP LIMITED CAPACITY



PRODUCER SURPLUS



Producer/generator surplus had a 23% increase as compared to January 2023 billing period which was affected by the changes in the offered and resulting prices in the market. Offers from Oil and Hydro power plants had the most significant changes in the offer pattern which likewise contributed to the aforementioned changes.

For the month of February 2023, ramp-limited capacities decreased, on average, by 28%, in consideration of the submitted ramp rates from the generators which were subsequently considered in the optimization of the market.

MONTHLY MARKET ASSESSMENT REPORT

CAPACITY PROFILE

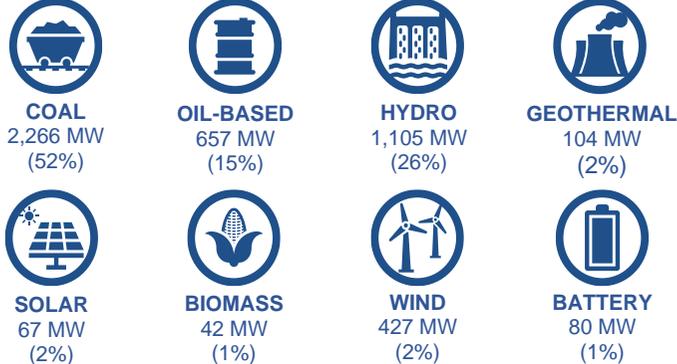
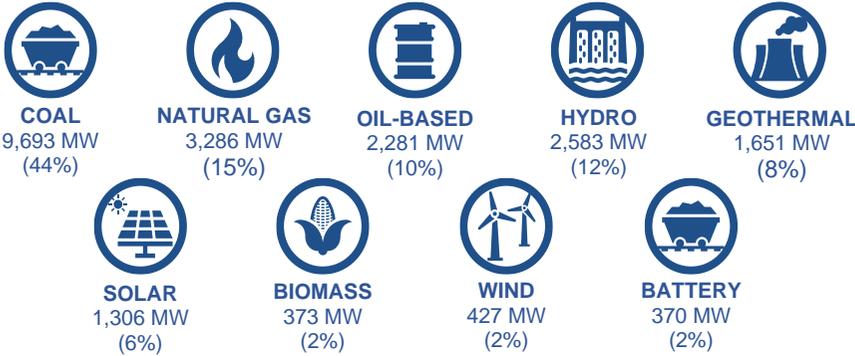
Luzon-Visayas					
Status	Market Participant Name	Market Trading Node	Plant Type	Pmax (MW)	Change (MW)
				New	
New	Universal Power Solutions, Inc.	01CNCEP_BAT	Battery	60	60
Decreased	Taft Hydroenergy Corporation	04TAFT_G01	Hydro	15.2	(0.7)
	Central Azucarera de Bais, Inc.	06CABI_G01	Biomass	12	(11.5)
	Panay Power Corporation	08PPC_G02	Oil-based	16	(16)
Increased	Jobin-SQM Inc.	01SUBSOL_G01	Solar	85.5	28.9
TOTAL					60.7

LUZON-VISAYAS

The WESM's registered capacity in Luzon and Visayas recorded changes for the February 2023 billing period from 21,908.5 MW to 21,969.2 MW due to the registration of a new Battery plant and net registration changes from 4 power plants.

MINDANAO

The WESM's registered capacity in Mindanao for the February 2023 billing period was recorded at 4,231.3 MW due to the registration of new Hydro and Battery plants coupled with the net registration changes from 11 power plants.

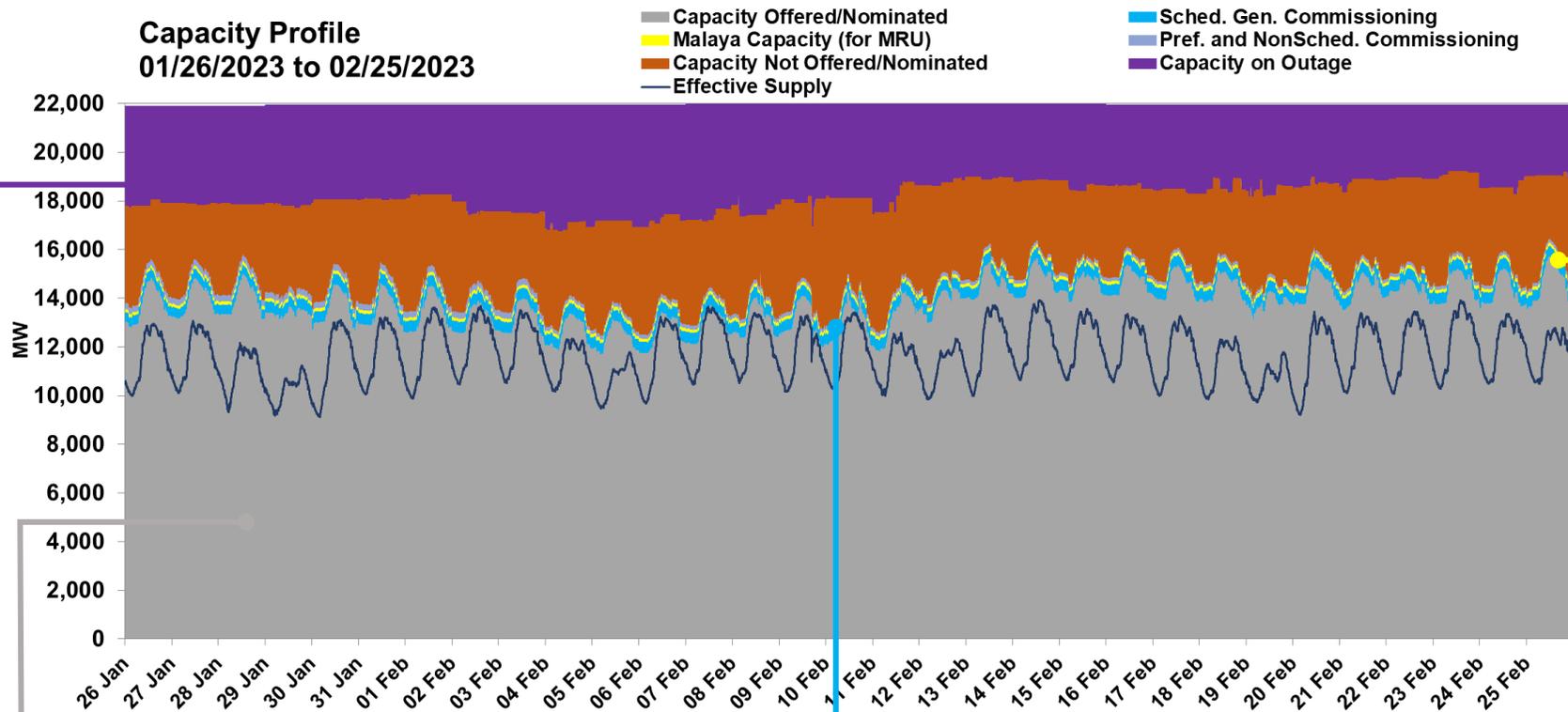


MONTHLY MARKET ASSESSMENT REPORT

CAPACITY PROFILE: LUZON-VISAYAS

Capacity on Outage (17% of Registered Capacity) increased by 6.3%, which was mostly from Coal, Geothermal, and Hydro power plants under maintenance outage category.

Capacity NOT Offered/Nominated (17% of Registered Capacity) increased by 6.8% or from an average of 3,455 MW last billing period to 3,690 MW which is attributable to resource constraints.



Note: Capacities not offered are further subject to validation and assessment of the PEMC-Enforcement and Compliance Office (ECO).

Capacities Offered/Nominated (63% of Registered Capacity) decreased by 2.3% or was noted at an average of 13,740 MW as compared to last billing period's 14,062 MW.

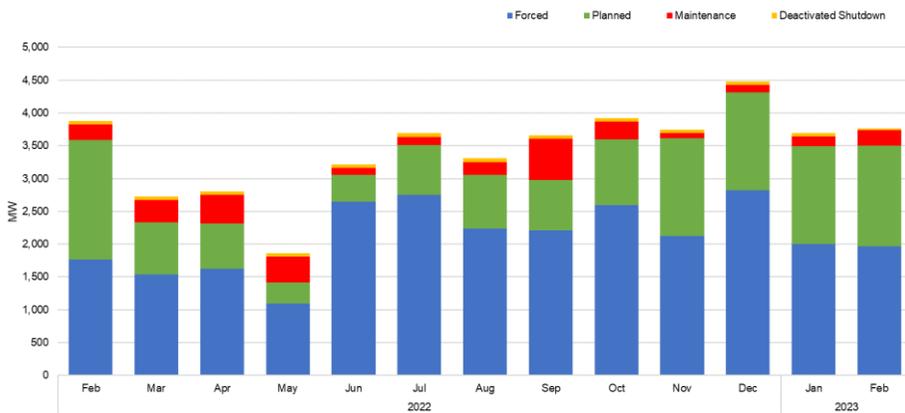
Capacities under Testing and Commissioning (3% of Registered Capacity) decreased from 701 MW to 629 MW this month.

Malaya Capacity as MRU (1% of Registered Capacity) retained its level at 130 MW.

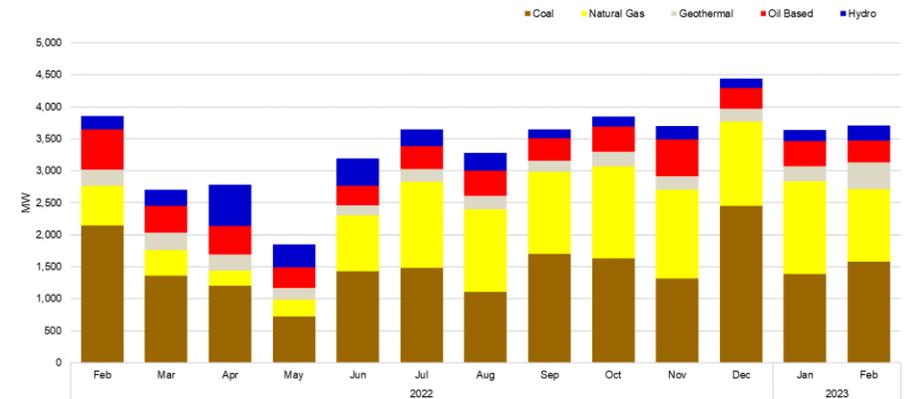
MONTHLY MARKET ASSESSMENT REPORT

CAPACITY PROFILE: LUZON-VISAYAS

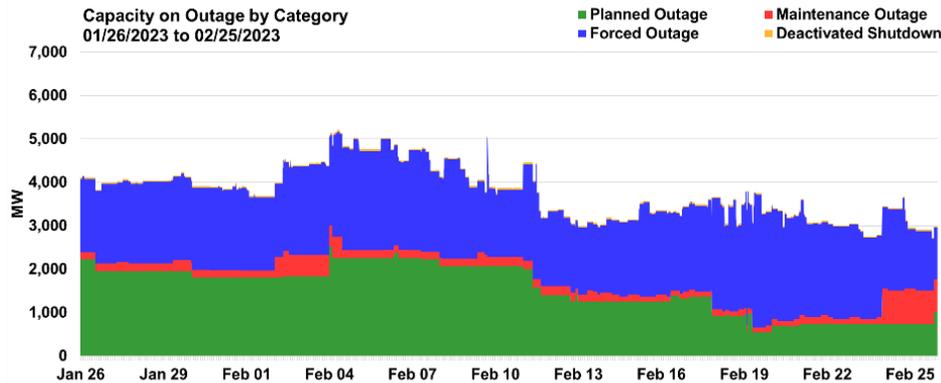
CAPACITY ON OUTAGE BY CATEGORY



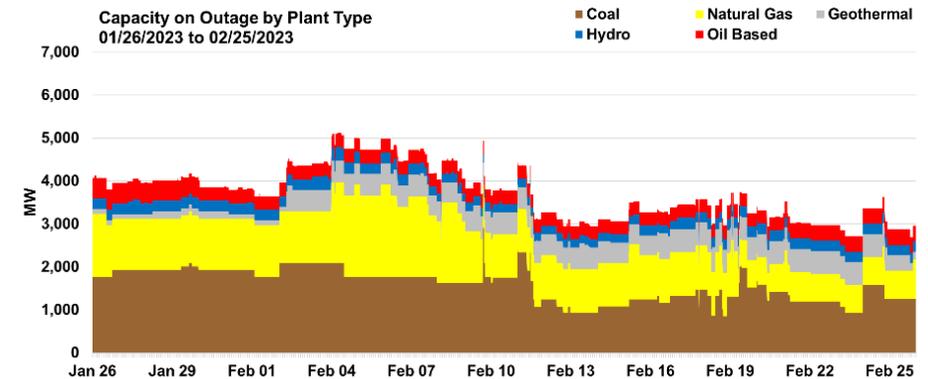
CAPACITY ON OUTAGE BY PLANT TYPE



Capacity on Outage by Category 01/26/2023 to 02/25/2023



Capacity on Outage by Plant Type 01/26/2023 to 02/25/2023



The February 2023 billing period opened with a relatively high level of capacities on outage at around 4,100MW. Outage levels continued to increase to as high as 5,200 MW on 05 February 2023, due to the increase in the capacities on outage from Natural gas power plants, noting the gas restriction from SPEX Malampaya due to the scheduled maintenance from 04-18 February 2023.

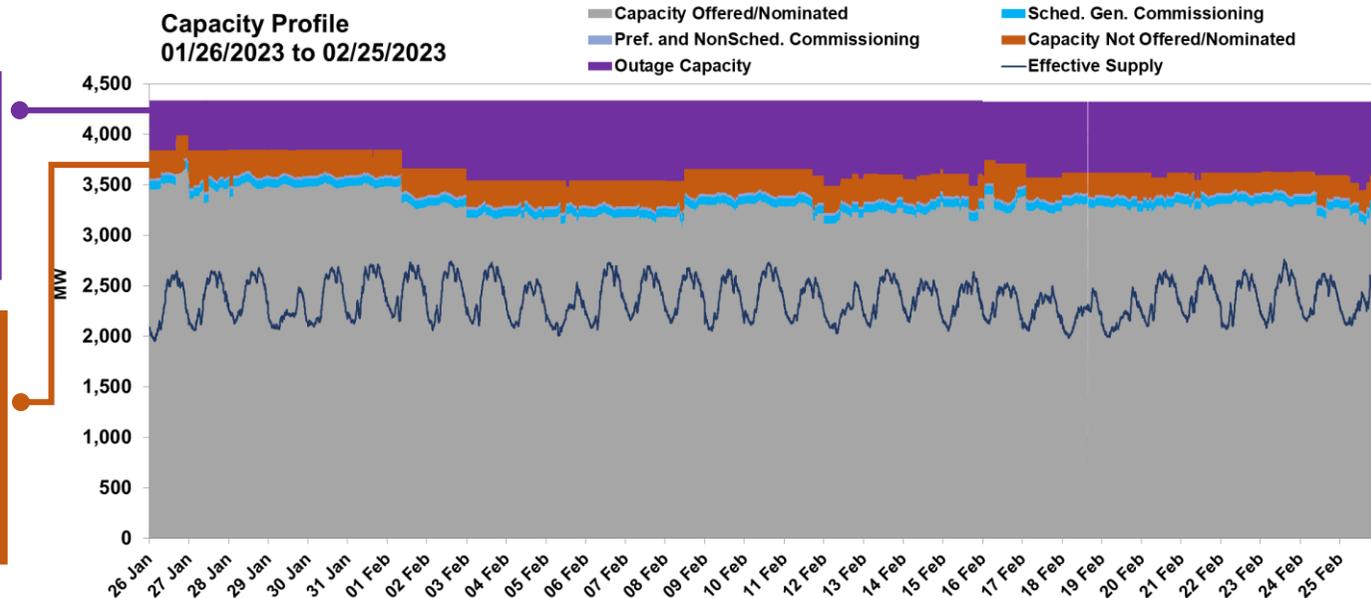
The recorded average capacities on outage were mainly due to planned outages of power plants as approved in the Grid Operating and Maintenance Program (GOMP) of the System Operator. However, the sudden increase in outages specifically on 09 February 2023 was due to technical issues encountered by various Coal power plants. As the month ended, the outage level was at about an average of 3,200 MW.

MONTHLY MARKET ASSESSMENT REPORT

CAPACITY PROFILE: MINDANAO

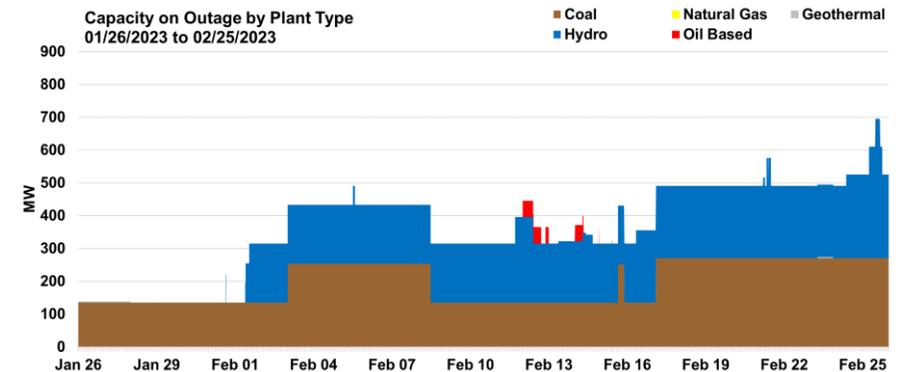
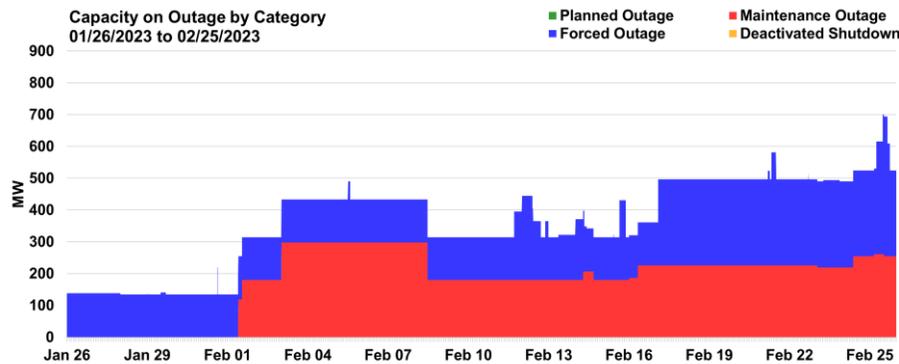
Capacity on Outage (16% of Registered Capacity) was mostly from Coal and Hydro power plants under forced and maintenance outage categories.

Capacity NOT Offered/Nominated (6% of Registered Capacity) is equivalent to an average of 247 MW attributable to resource constraints subject to investigation of the Enforcement and Compliance Office.



Capacities under Testing and Commissioning (2% of Registered Capacity) averaged at 108MW this billing period.

Capacities Offered/Nominated (76% of Registered Capacity) was noted at an average of 3,297 MW.



Capacities on outage in the Mindanao region for the February 2023 billing period opened with a relatively low level at around 135MW, but eventually increased to around 430MW due to the outages from Coal and Hydro power plants under maintenance category.

Note: The comprehensive information on plant outages in all categories is shown in Annex A, for convenience and reference.

MONTHLY MARKET ASSESSMENT REPORT

MARKET TRANSACTIONS

BILATERAL CONTRACT QUANTITIES



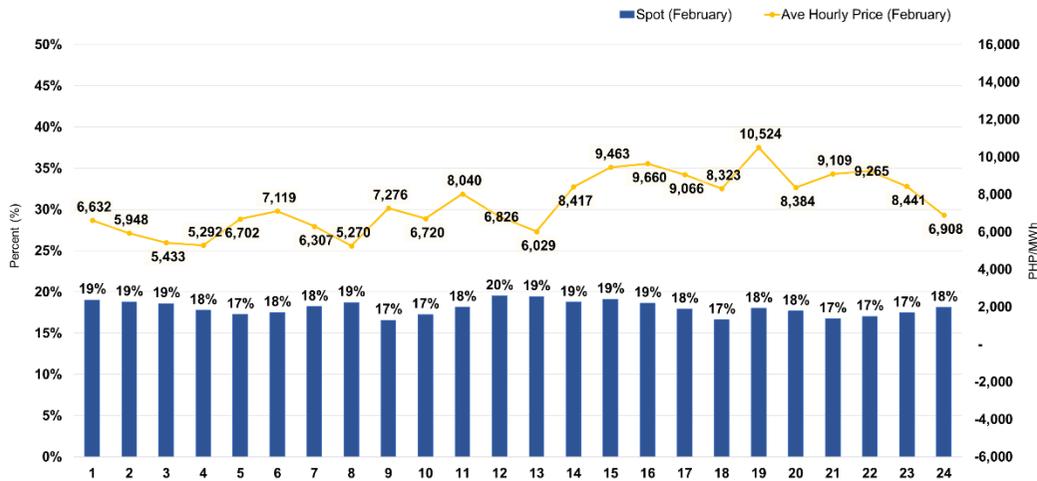
81.9%
(82.8% in January 2023)

SPOT EXPOSURES



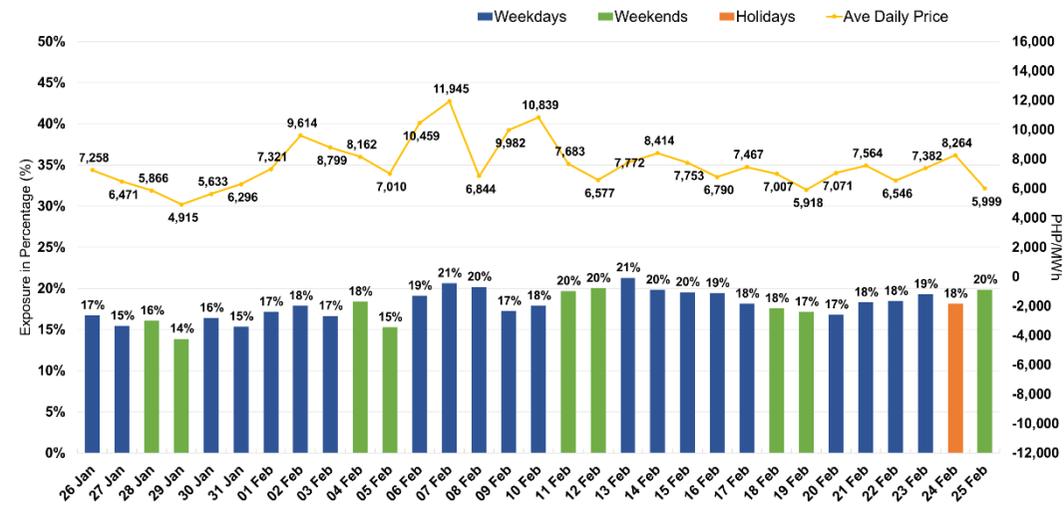
18.1%
(17.2% in January 2023)

HOURLY SPOT



Total spot quantities of generator participants in February were at an average of 17.9% during off-peak hours and 18.2% during peak hours.

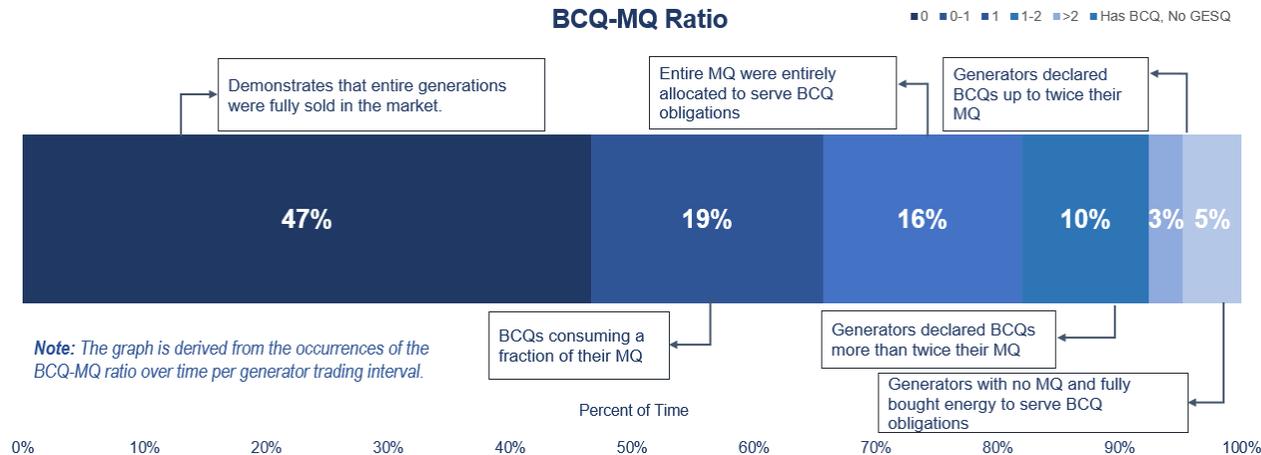
DAILY SPOT



Spot exposures during weekdays averaged at 18.2% while it was 17.6% during the weekends.

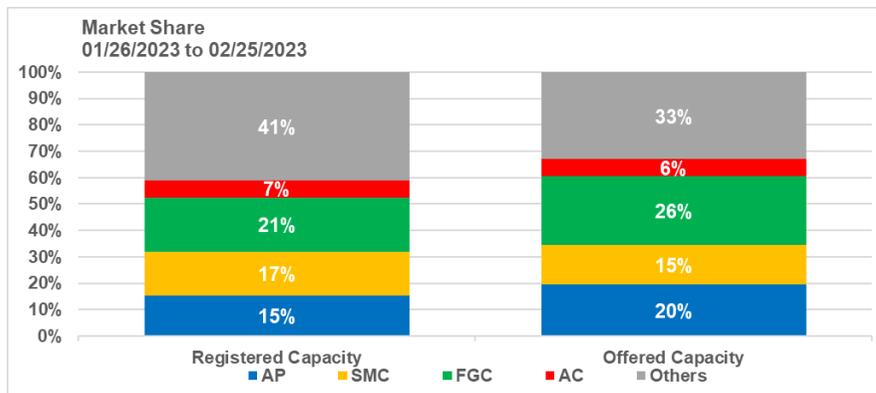
MONTHLY MARKET ASSESSMENT REPORT

MARKET TRANSACTIONS



STRUCTURAL COMPETITION INDICES

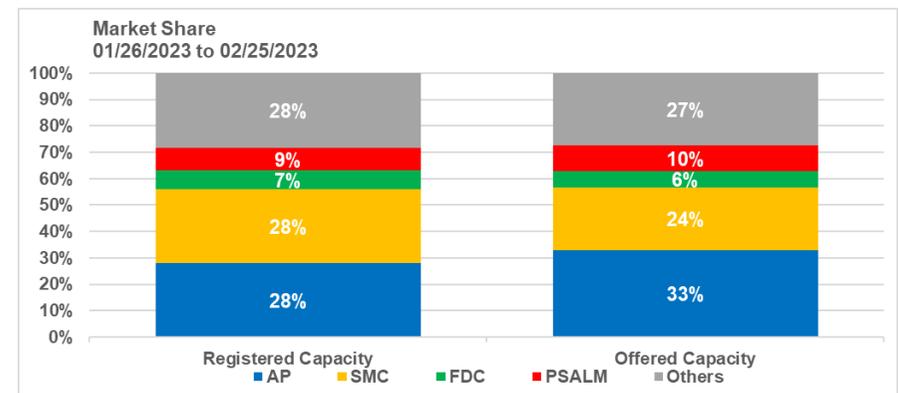
MARKET SHARE: LUZON-VISAYAS



Aboitiz Power (AP), San Miguel Corporation (SMC), First Gen Corporation (FGC), and Ayala Corporation (AC) dominated the market with their combined market shares comprising 59% of the total registered capacities in the WESM. The shares of the major participant remained similarly close to last billing period.

Note: The Major Participant Grouping information used in this report is consistent with the ERC's list.

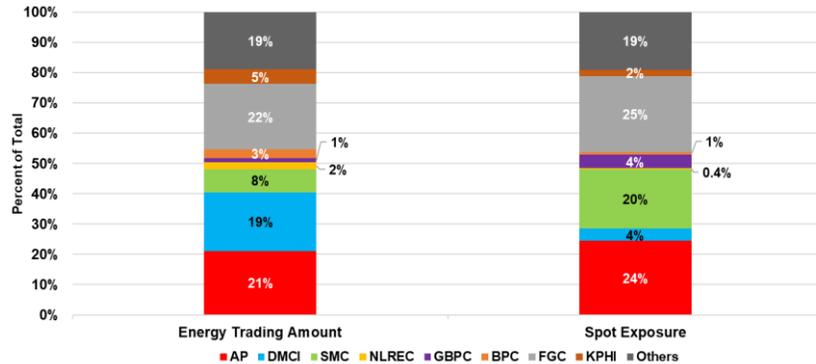
MARKET SHARE: MINDANAO



Aboitiz Power (AP), San Miguel Corporation (SMC), FDC Misamis Corporation (FDC), and Power Sector Assets and Liabilities Management (PSALM) dominated the market with their combined market shares comprising 67% of the total registered capacities in the WESM.

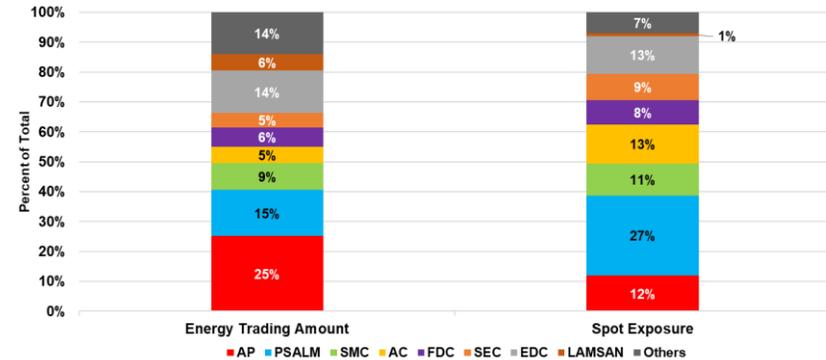
MONTHLY MARKET ASSESSMENT REPORT

ENERGY TRADING AMOUNT (ETA): LUZON-VISAYAS



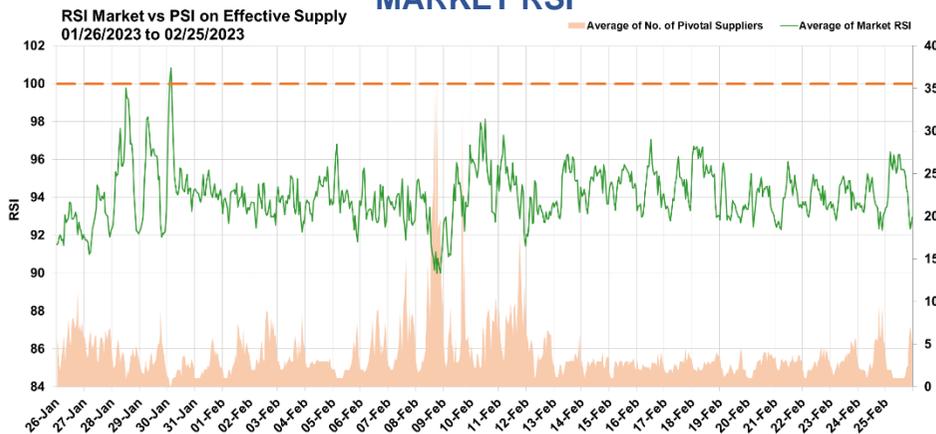
The top 3 participants with highest shares in terms of ETA and spot exposure comprised about 62% of the total shares in both measures.

ENERGY TRADING AMOUNT (ETA): MINDANAO



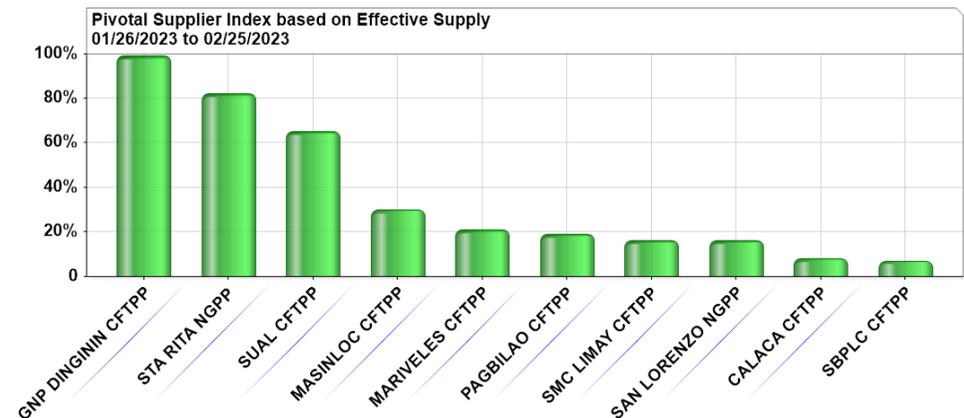
The top 3 participants with highest shares in terms of ETA and spot exposure comprised about 55% of the total shares in both measures.

MARKET RSI



- The market Residual Supply Index (RSI) was below the 100% mark for about 99.7% of the time this billing period compared to 94.4% last period, signifying the presence of pivotal plants in Luzon and Visayas.
- During the period, the market resulted in RSIs ranging from 90% to 100.8% and averaged at 94.1%. The average market prices for intervals with RSI below 100% was PHP8,717/MWh, while those with RSIs above 100 was at PHP2,905/MWh.
- Meanwhile, market RSI in the Mindanao region was below the 100% mark for about 0.03% of the time signifying low level of pivotal plants.

PIVOTAL PLANTS

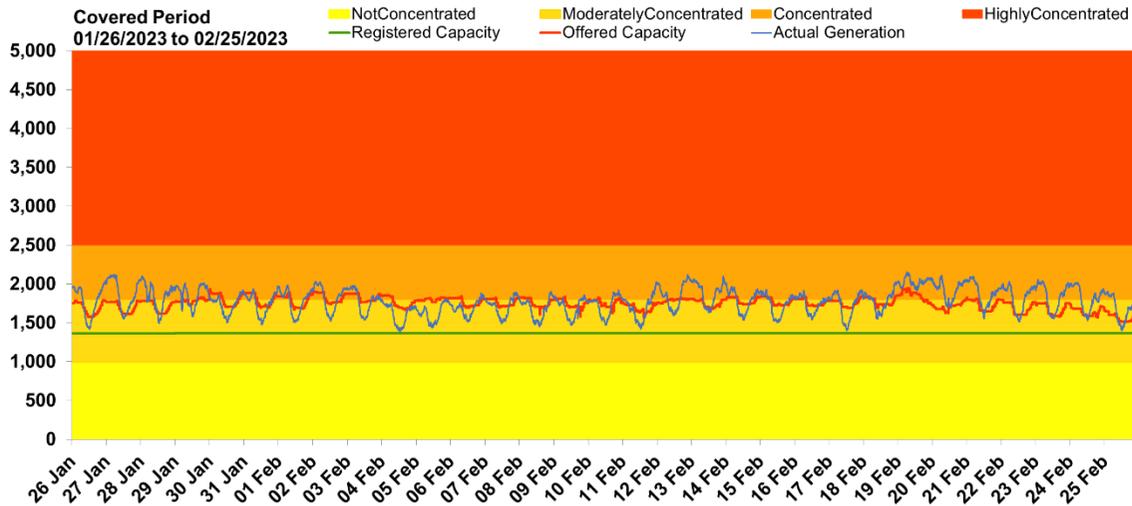


- A total of 185 power plants were pivotal during the period from 46 last month, with 68% or 125 plants coming from Luzon and 60 plants from Visayas.
- The noted increase in effective supply influenced the resulting RSI and the number of pivotal suppliers per dispatch interval.
- The Mindanao region has only 1 pivotal supplier due to the currently experienced excess capacity in the region.

MONTHLY MARKET ASSESSMENT REPORT

STRUCTURAL COMPETITION INDICES

MARKET HHI: LUZON-VISAYAS



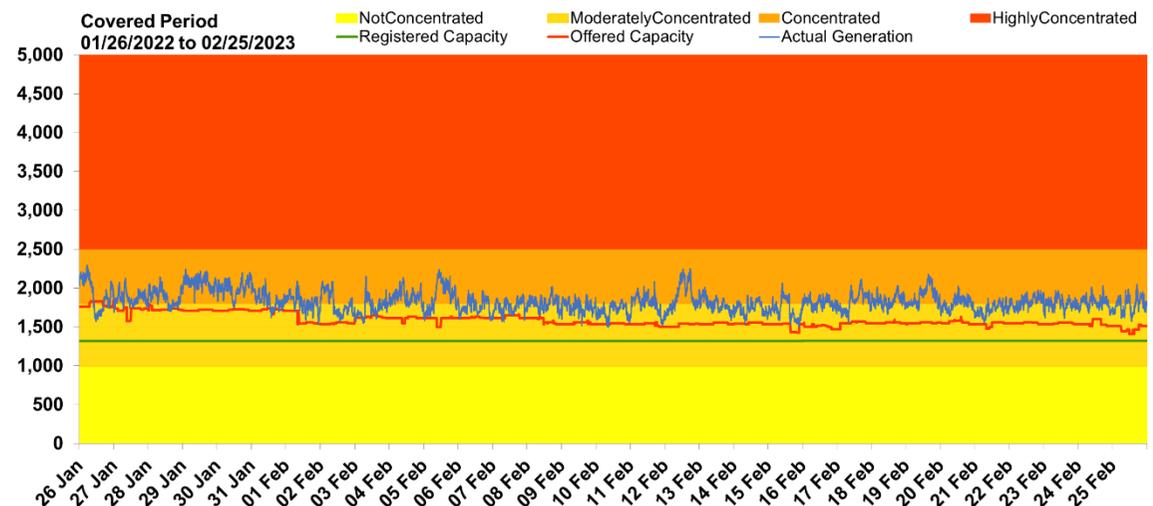
Herfindahl-Hirschman Index (HHI), by major participant grouping.

- Based on Offered Capacity, the market is **moderately concentrated** for 71% of the time (6,362 intervals) and **concentrated** market for 29% of the time (2,565 intervals).
 - o This was brought about by the effects of **changes in the availability of generators** which subsequently affected the resulting market shares.
- Based on Metered Quantities, the market is **moderately concentrated** market 52% of the time (4,620 intervals) and **concentrated** market for 48% of the time or for 4,308 intervals.
 - o Three (3) major participant groups have consistently covered more than 50% of the MQ shares which were due to their frequent dispatch, mostly covered by BCQ, and subsequently affected the resulting market concentration.
- Based on Registered Capacity, the market is **moderately concentrated** for February 2023.

MARKET HHI: MINDANAO

Herfindahl-Hirschman Index (HHI), by major participant grouping.

- Based on Offered Capacity, the market is **moderately concentrated** for 98.7% of the time (8,809 intervals) and **concentrated** market for 1.3% of the time or for 118 intervals. This was brought about by the high **availability of generators** in the region.
- Based on Metered Quantities, the market is **moderately concentrated** market 45% of the time (4,030 intervals) and **concentrated** market for 55% of the time or for 4,898 intervals.
- Based on Registered Capacity, the market is **moderately concentrated** for February 2023 billing period.



MONTHLY MARKET ASSESSMENT REPORT

DEFINITIONS, REFERENCES, AND INTERPRETATION

- **Pricing Error Notice (PEN)**
 - a pricing algorithm in the market and are categorized according to cause, as either Network congestion pricing errors or non-congestion pricing errors. Pricing error notice shall be issued only for the market run where the pricing error is determined by the Market Operator to have occurred.
- **Secondary Price Cap (SPC)**
 - a preventive mitigating measure instituted by the ERC to avoid excessive high market prices through its imposition on succeeding intervals, upon breach of PHP9,000/MWh Rolling Average of the generator-weighted average price (GWAP) for a running period of 3 days or 864 5-minute intervals. In this case, market prices are capped at PHP6,245/MWh.
- **Administered Price (AP)**
 - administered price determination methodology which shall be implemented by the Market Operator to impose administered prices on dispatch intervals under market suspension or market intervention.
 - administered price shall be established by the Market Operator in accordance with guiding principles as set forth by the WESM rules.
- **Generator/Producer Surplus**
 - represents the difference between the price a generator receives and their willingness to sell for each quantity.
 - daily average price of the producer/generator surplus is derived from the daily weighted average price of all the generator trading participants during peak and off-peak hours. Increase and decrease in the daily weighted average price depend on the generator schedule per dispatch interval
- **Pivotal Suppliers**
 - The market measures how critical a particular generator is in meeting the total demand at a particular time, taking into consideration the variables that change dynamically, mainly demand (energy withdrawn), required spinning (or operational) reserve and generation availability.
- **Price Substitution Methodology (PSM)**
 - a pricing algorithm that shall be implemented in all the regions where the WESM is in operation. In cases where a region/s has no interconnection with other regions, or has no exchange of power with other regions, this region/s shall be separately assessed for the application of the price substitution methodology.
 - The price substitution methodology shall apply to a *dispatch interval* when the trigger factor exceeds the threshold, which shall be set at 0.2, subject to annual review.
 - The dispatch schedules arrived at in the original (constrained) market solution for the relevant dispatch interval will stand and will be the basis for dispatch by the System Operator irrespective of the results of the unconstrained solution. Redispatch of generation units will be implemented by the System Operator in accordance with relevant provisions of the WESM Rules and Market Manuals, the Philippine Grid Code and other relevant rules, regulations, issuances, guidelines, and procedures.
- **Ramp Limited Capacity**
 - generator restricted capacities due to the plants' intrinsic ramp rates.
 - Ramp rate is essentially the speed at which a generator can increase (ramp up) or decrease (ramp down) generation. Generating units have different characteristics, making some more suited to supplying certain needed functions.
- **Energy Trading Amount**
 - The energy trading amount for a trading participant and settlement interval shall be determined using the final energy dispatch prices for that node, the gross energy settlement quantities, and bilateral contract quantities for that node in the dispatch intervals within the same settlement interval.

MONTHLY MARKET ASSESSMENT REPORT

Annex A. List of Major Plant Outages

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Days)	Outage Type	Remarks
Luzon							
COAL	SMC 4	150	02/20/2023 0:06			Planned Outage	On Planned Outage until March 13 2023
COAL	GN Power 1	316	02/19/2023 7:52	02/24/2023 19:18	5	Forced Outage	Unplanned outage due to boiler tube leak.
COAL	SLPGC 2	149.6	02/18/2023 14:07	02/21/2023 6:10	3	Forced Outage	Emergency shutdown due to suspected grounded stator.
COAL	SLTEC 2	124	02/10/2023 1:33	02/23/2023 3:16	13	Forced Outage	Leak at boiler leg expansion below valve
COAL	SLPGC 1	150	01/26/2023 17:59	02/01/2023 2:12	5	Forced Outage	Unplanned shutdown due to steam leak at turbine case.(Until 2359H of January 31 2023)
COAL	SMC 2	150	01/17/2023 7:00	02/07/2023 23:28	22	Planned Outage	Planned Outage
COAL	SLPGC 2	149.6	01/07/2023 23:56	02/12/2023 17:05	36	Planned Outage	Planned Outage until February 17 2022
COAL	QPPL	460	01/20/2023 23:59	02/17/2023 19:54	28	Planned Outage	Planned Outage.
COAL	Pagbilao 3	420	01/14/2023 0:20	02/11/2023 8:20	28	Planned Outage	Planned Outage.
COAL	Masinloc 1	315	12/23/2022 23:40			Planned Outage	Planned outage until February 21 2023.
COAL	APEC 1	25	12/27/2022 18:34	02/19/2023 10:05	54	Forced Outage	Unplanned outage due to boiler tube leak.
GEO	Tiwi 5	57	01/04/2023 0:06	02/12/2023 21:25	40	Maintenance Outage	Overhauling.
GEO	Tiwi 1	60	11/30/2021 18:32			Forced Outage	Steam supply diverted to Unit 2.
GEO	Makban 6	30	04/11/2013 22:44			Deactivated Shutdown	Conducted Gas compressor test.
HYD	Binga 4	35	02/16/2023 8:01			Planned Outage	Planned Outage.
HYD	Binga 3	35	02/16/2023 8:01			Planned Outage	Planned Outage.
HYD	Binga 2	35	02/09/2023 8:01	02/14/2023 11:50	5	Maintenance Outage	APM
HYD	Binga 1	35	02/02/2023 8:01	02/07/2023 7:09	5	Planned Outage	Planned Outage.
HYD	Kalayaan 4	180	02/02/2023 7:20	02/24/2023 22:09	23	Forced Outage	Heavy water leak at spherical valve trunion.
HYD	Kalayaan 3	180	02/02/2023 7:20	02/25/2023 18:49	23	Forced Outage	Heavy water leak at spherical valve trunion.
HYD	Pantabangan 2	60	01/28/2023 5:14	01/31/2023 3:11	3	Forced Outage	Tripped due to turbine stator earth fault.
HYD	Angat M 4	50	02/14/2022 0:00			Planned Outage	Planned outage.
HYD	Angat M 3	50	11/02/2021 8:15			Forced Outage	Draw-out of Main Unit 3 generator breaker.
HYD	Angat A 1	6	08/22/2022 8:01			Planned Outage	Planned Outage until April 21 2023
NATG	San Lorenzo 1	265	02/25/2023 23:47			Planned Outage	Maintenance Outage
NATG	San Lorenzo 2	265	02/25/2023 20:48			Planned Outage	Maintenance Outage.
NATG	Avion 1	47.2	02/22/2023 0:01			Planned Outage	Planned outage.
NATG	Avion 2	45.8	02/19/2023 0:00	02/22/2023 0:55	3	Planned Outage	Planned Outage.
NATG	San Gabriel	420	02/03/2023 23:52	02/19/2023 7:04	15	Planned Outage	Malampaya Turnaround Activity.
NATG	Ilijan B3	220	06/05/2022 0:00			Forced Outage	End of Cooperation Period of Ilijan NGPP.
NATG	Ilijan B2	190	06/05/2022 0:00			Forced Outage	End of Cooperation Period of Ilijan NGPP.
NATG	Ilijan B1	190	05/02/2022 20:08			Forced Outage	End of Cooperation Period of Ilijan NGPP.
NATG	Ilijan A3	220	06/04/2022 22:42	02/09/2023 1:05	249	Forced Outage	End of Cooperation Period of Ilijan NGPP.
NATG	Ilijan A2	190	06/04/2022 19:45	02/07/2023 14:26	248	Forced Outage	End of Cooperation Period of Ilijan NGPP.
NATG	Ilijan A1	190	06/04/2022 22:53	02/09/2023 14:45	250	Forced Outage	End of Cooperation Period of Ilijan NGPP.
OIL	TMO Unit 3	55.2	02/21/2023 0:01			Planned Outage	Annual PM.
OIL	SLPGC 4	25	02/10/2022 18:07			Forced Outage	Due to low turbine lube oil supply. IEMOP deregistration effective on August 25 2022.
OIL	SLPGC 3	25	01/22/2022 21:39			Forced Outage	Declared unavailable due to turbine lube oil sump metal chips detected. IEMOP deregistration effective on August 25 2022.
OIL	MGTPP	85	09/29/2021 16:52			Forced Outage	Tripped from 14MW due to turbine bearing shaft vibration. IEMOP deregistration effective December 25 2021.
OIL	Malaya 1	300	05/03/2019 18:21			Forced Outage	Declared unavailable due to motorization of unit generator caused by the non-opening of phase B of PCB 8-05CB08MAL
OIL	Ingrid 6	28	01/09/2023 0:41	01/30/2023 0:39	21	Planned Outage	Planned outage as per GOP until 2400H of January 29 2023.
OIL	Ingrid 5	22	01/09/2023 0:41	01/30/2023 0:39	21	Planned Outage	Planned outage as per GOP until 2400H of January 29 2023.
OIL	Ingrid 4	28	01/09/2023 0:41	01/30/2023 0:39	21	Planned Outage	Planned outage as per GOP until 2400H of January 29 2023.
OIL	Ingrid 3	22	01/09/2023 0:41	01/30/2023 0:39	21	Planned Outage	Planned outage as per GOP until 2400H of January 29 2023.
OIL	Ingrid 2	22	01/09/2023 0:41	01/30/2023 0:39	21	Planned Outage	Planned outage as per GOP until 2400H of January 29 2023.
OIL	Ingrid 1	28	01/09/2023 0:41	01/30/2023 0:39	21	Planned Outage	Planned outage as per GOP until 2400H of January 29 2023.
Visayas							
BIOF	SCBE	7.4	02/02/2023 16:35			Maintenance Outage	Offline conduct turbine inspection.
BIOF	FFHC	9	01/29/2023 8:57	02/04/2023 12:08	6	Maintenance Outage	Offline due to weekly maintenance.
BIOF	SCBE	7.4	01/27/2023 18:32	02/02/2023 10:30	6	Forced Outage	Auto-tripped due to high vibration.
BIOF	VMC	2.5	03/13/2022 9:38			Maintenance Outage	Offline due to weekly maintenance.
BIOF	South Negros	25	12/12/2022 17:41			Forced Outage	Offline due to unavailability of bagasse.
BIOF	SCBE	7.4	01/19/2023 18:02	01/27/2023 10:37	8	Forced Outage	Offline due to condenser level high.
COAL	PALM 1	135	02/20/2023 11:07			Forced Outage	Affected by a Grid disturbance at 1106H
COAL	CEDC 1	82	02/16/2023 6:20	02/20/2023 0:32	4	Forced Outage	Repair of HPS Leak
COAL	PEDC 3	150	02/14/2023 0:22			Forced Outage	Under investigation
COAL	THM 2	169	01/15/2023 0:15	02/11/2023 15:09	28	Planned Outage	APMS ECD 02-09-23 0000H
COAL	PEDC 1	83.7	01/23/2023 0:55	02/11/2023 0:16	19	Planned Outage	PMS
GEO	Nasulo	48.3	02/17/2023 0:22			Planned Outage	Offline to conduct minor PMS inspection of turbine generator bearing and control valve.
GEO	Upper Mahiao 2	32	11/23/2022 9:50			Maintenance Outage	Emergency shutdown due to problem in control valve
GEO	Malitbog 2	72	01/21/2023 0:13			Maintenance Outage	CUT OUT
OIL	TPVI 3	6.8	02/09/2023 22:29			Forced Outage	EMERGENCY CUT-OUT DUE TO GAS LEAK AT HORIZONTAL BELLWETS A8
OIL	TPVI 1	6.7	02/06/2023 15:02	02/11/2023 11:20	5	Forced Outage	EMERGENCY CUT-OUT DUE TO B6 HIGH EGT
OIL	TPVI 4	6.8	02/02/2023 16:15	02/06/2023 14:11	4	Forced Outage	Unit shutdown due to unit issue
OIL	TPVI 3	6.8	10/12/2022 0:11	02/09/2023 21:36	121	Forced Outage	UNIT TRIPPED DUE TO ERRATIC MAIN BEARING NO. 7 SUDDEN HIGH TEMPERATURE INDICATION
OIL	TPVI 1	6.7	12/17/2022 21:00	02/02/2023 14:10	47	Forced Outage	EMERGENCY CUT-OUT DUE TO HEAVY WATER LEAK AT CHARGE-AIR COOLING WATER RETURN PIPELINE
OIL	PB101 Unit 1	6	11/15/2022 0:01	01/30/2023 16:21	77	Maintenance Outage	Extended maintenance outage
Mindanao							
BIOF	14TACUR	6	02/08/2023 0:00			Maintenance Outage	PMS (Non-GOP). ETC March 11 2023.
COAL	FMP U3	135	02/17/2023 2:03			Forced Outage	Emergency shutdown due to tube leak of boiler air pre-heater primary air fan system. ETC March 15 2023.
COAL	SMF1 U1	118.5	02/03/2023 0:18	02/08/2023 11:20	5	Maintenance Outage	PMS (Non-GOP). ETC 08 Feb 2023.
COAL	GKP U1	151.9	01/26/2023 23:41	03/25/2023 0:17	57	Forced Outage	A Non-Nomination
COAL	MCC U3	55	01/23/2023 12:12			Forced Outage	Emergency shutdown due to lack of coal supply.
COAL	GKP U4	151.4	01/19/2023 10:10	02/16/2023 6:37	28	Forced Outage	A Non-Nomination
COAL	GKP U3	151.3	11/29/2022 22:09	01/26/2023 16:22	58	Forced Outage	A Non-Nomination
COAL	FMP U2	135	02/01/2022 22:08			Forced Outage	Extended PMS. ETC April 16 2023.
GEO	14KIDAP	3.7	01/24/2023 19:14	01/29/2023 0:24	4	Forced Outage	Tripped due to PH Level High Very High. Unplanned Outage.
HYD	AG6 U1	31.5	02/24/2023 9:09			Maintenance Outage	PMS(Non-GOP). ETC Feb.28 2023.
HYD	AG1 U2	35	02/16/2023 8:03			Maintenance Outage	PMS (GOP). ETC March 02 2023.
HYD	AG2 U1	60	02/01/2023 13:05			Maintenance Outage	PMS(Non-GOP). ETC March 31 2023
HYD	AG2 U2	60	02/01/2023 9:40			Maintenance Outage	PMS(Non-GOP). ETC March 31 2023
HYD	AG2 U3	60	02/01/2023 9:25			Maintenance Outage	PMS(Non-GOP). ETC March 31 2023
OIL	TM1 U2	50	02/15/2023 0:01	02/17/2023 22:00	3	Planned Outage	PMS(GOP) Transformer Annual PMS and Breaker Annual Testing. ETA 02-17-2023 23:59
OIL	TM1 U2	50	02/15/2023 0:01	02/17/2023 22:00	3	Maintenance Outage	PMS(GOP) Transformer Annual PMS and Breaker Annual Testing. ETA 02/17/2023 2359
OIL	TM1 U1	49	02/12/2023 0:01	02/14/2023 22:00	3	Planned Outage	Affected by PMS(GOP) Transformer Annual PMS and Breaker Annual Testing. ETA 14 Feb 2023 2359H.
OIL	TM1 U1	50	02/12/2023 0:01	02/14/2023 22:00	3	Forced Outage	Affected by PMS(GOP) Transformer Annual PMS and Breaker Annual Testing. ETA 14 Feb 2023 2359H.

Notes:

- List of Major Plant Outages includes all generating units with capacities above 10MW located in Luzon and above 5MW for plants located in Visayas.
- Outages with duration of 1 day and below were not included in the list of Major Plant Outages
- Daily outages with drastic effects to the market are monitored through separate indices.