



Market Surveillance Committee Monthly Market Assessment Report

26 August to 25 September 2022

January 2023

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

MONTHLY MARKET ASSESSMENT REPORT

(26 August – 25 September 2022)

1 ASSESSMENT OF THE MARKET

Summary of Pricing Conditions
Notable Highlights

4 CAPACITY PROFILE

Registered Capacity

6 MARKET TRANSACTIONS

Daily and Hourly Spot, BCQ-MQ ratio

7 STRUCTURAL INDICES

Market RSI, Pivotal Plants, TTA and Spot Share

9 ANNEX

Monthly Market Assessment Report – September 2022

MONTHLY MARKET ASSESSMENT REPORT

(26 August – 25 September 2022)

ASSESSMENT OF THE MARKET

NOTABLE HIGHLIGHTS

1. **Luzon Grid was placed under Red and Yellow alert levels** due to transmission line outages.
 - Tripping of 500KV Bolo-Nagsaag line that led various power plants to be on forced outage with a total capacity of 3,491 MW
2. **Luzon transmission lines were down** after the onslaught of typhoon Karding.
 - Affected eight (8) 69kV and four (4) 230kV lines.
3. **Sustained high prices persisted** during the month in review and subsequently led to the frequent imposition of secondary price cap
4. Observed congestion in transmission lines and transformer equipment resulted from the nature and current design of the transmission system, as well as N-1 contingency impositions by the System Operator (SO). Some notable congestions were as follows:
 - Samboan-Amlan line 2 was congested 34% of the time or equivalent to 3,019 intervals as a result of the continuous unavailability of Samboan-Amlan line 1.
 - Maasin-Ubay line 1 was congested for 2,745 intervals or equivalent to 31% of the time brought about by the frequent maximization of the line's capacity limit.

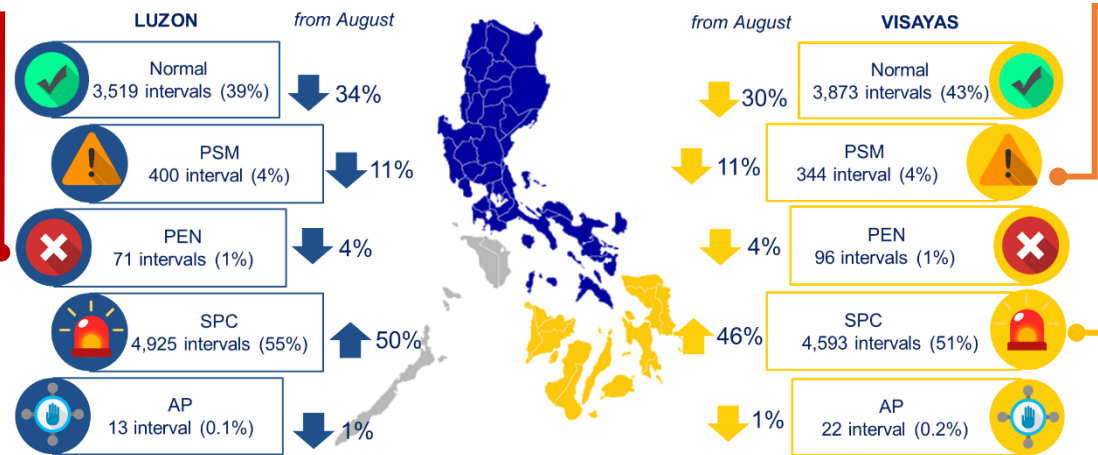
SUMMARY OF PRICING CONDITIONS

Pricing error notices (PEN)

- System-wide: mainly due to **inappropriate input data** which affected prices and schedules across 70 intervals both for Luzon and Visayas
- Regional: issued for 1 interval in Luzon and 26 intervals for Visayas region

22 intervals under Market Intervention (MI)

- 06 September at 1915H, 09 September 2022 0700H, 20 September 2022 from 1000H to 1015H due to Market Participant Interface failure.
- 20 September 2022 from 1400H-1425H and 1745H due to Market Systems Switch-Over from Emergency Back Up Site to its Main Operations Site
- SO initiated market intervention in Visayas due to implementation of emergency manual load dropping (MLD) for 9 intervals on 23 September 2022 from 1815H-1855H.
- Administered prices (AP) were imposed on the market during these instances



Price substitution methodology (PSM) decreased during the month in review, signifying lower instances of congestions.

Secondary Price Cap (SPC)

- Imposed when the cumulative 3-day average computation of the generator-weighted average prices (GWAP) breached the PhP9,000/MWh threshold
- System-wide: 4,348 intervals from 420 intervals last month due to depleted supply margin from 26 August to 02 September and 05-25 September 2022
- Regional: 577 intervals for Luzon and 245 intervals for Visayas region during those instances when the inter-connection between the grids was unavailable

MONTHLY MARKET ASSESSMENT REPORT

(26 August – 25 September 2022)

MARKET OUTCOME

EFFECTIVE SUPPLY



↓
12,124
MW
(12,207MW in August)

DEMAND PLUS RESERVE SCHEDULE



↑
11,723
MW
(11,623MW in August)

SUPPLY MARGIN



↓
403
MW
(584 MW in August)

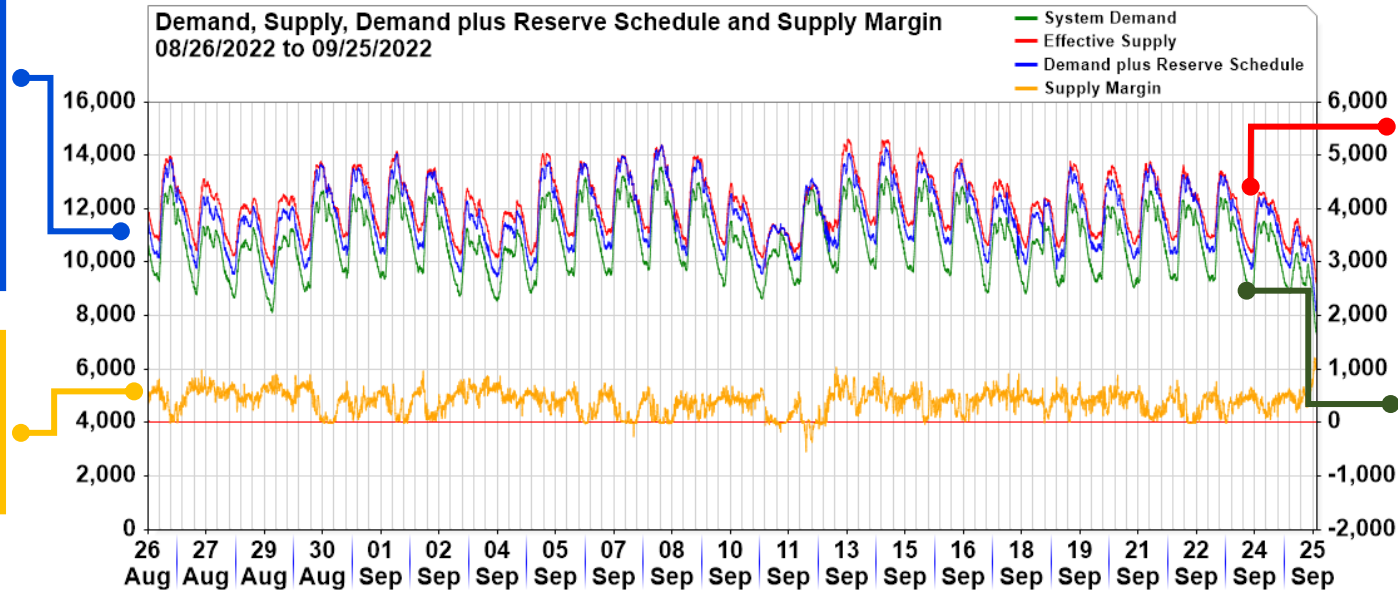
Demand plus Reserve Schedules

- Increased by an average of 0.9% brought about mainly by the higher economic activities which influenced the behavior of electricity consumers
- Average level of 11,723 MW as compared to last month's 11,623 MW

Supply Margin

- Declined by 31%, considering the dynamics of supply and demand
- Average of 403 MW from 584 MW last billing month

Demand, Supply, Demand plus Reserve Schedule and Supply Margin
08/26/2022 to 09/25/2022



Effective Supply

- Decreased to an average of 12,124 MW from last month's 12,207 MW
- Among the noted reasons for the depleted supply was the higher capacities on outage this month and the effects of ramp limited capacities which are considered in the determination of the effective supply.

System Demand increased by an average of 1.8% or was noted to be at 10,822 MW from 10,629 MW last month, even with the onset of the rainy season

MONTHLY MARKET ASSESSMENT REPORT

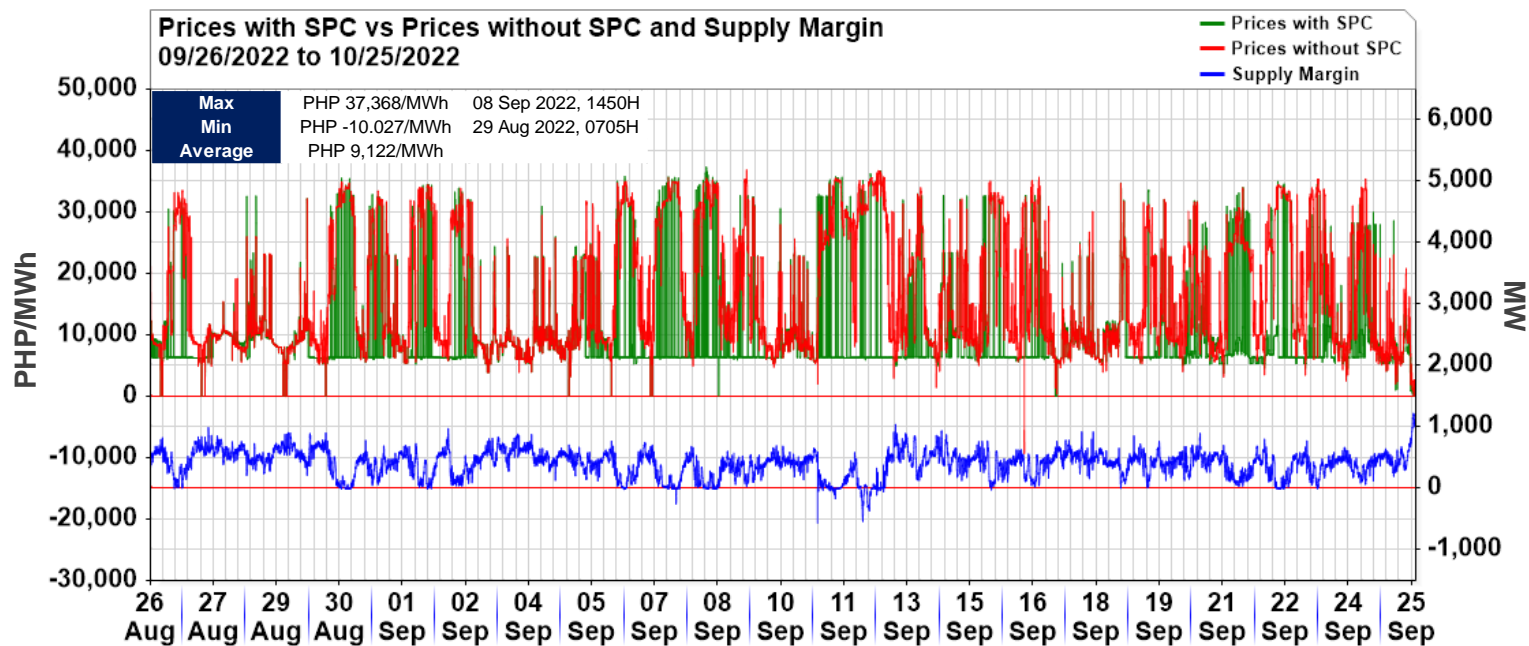
(26 August – 25 September 2022)

Zone	Average LWAP (PHP/MWh)
NLUZON	9,051.34
MMANILA	9,194.69
SLUZON	9,098.26
LEYTE	9,290.74
CEBU	9,083.40
NEGROS	8,704.37
BOHOL	10,754.82
PANAY	8,802.86

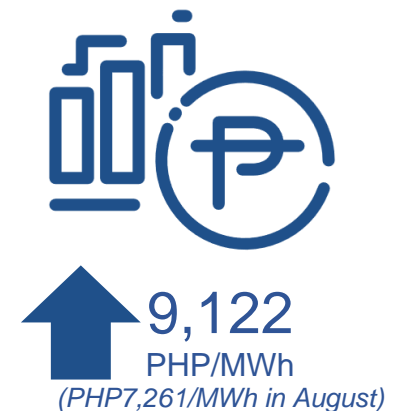
MARKET OUTCOME

Given the dynamics of supply and demand, the level of market prices increased, on average, by 25.6% or was noted at an average of PHP9,122/MWh from PHP7,261/MWh last month. The estimated monthly average price would have been at PHP16,826/MWh if SPC was not imposed. Year-on-year comparison posted a 186.2% increase from an average price of PHP3,187/MWh last year noting that outages this year were significantly higher than in September 2021 coupled with the expected economic growth resulting in higher consumption this year.

The 15 June 2021 incident involving the underwater drilling operations of the DPWH that damaged one of the submarine cables of NGCP connecting the Cebu-Negros islands has kept congestion events persistent in the area which, in turn, continuously affected the power rates in the Visayas region causing disparity, as depicted in the table of prices.



PRICE



MONTHLY MARKET ASSESSMENT REPORT

(26 August – 25 September 2022)

MARKET OUTCOME

RAMP LIMITED CAPACITY

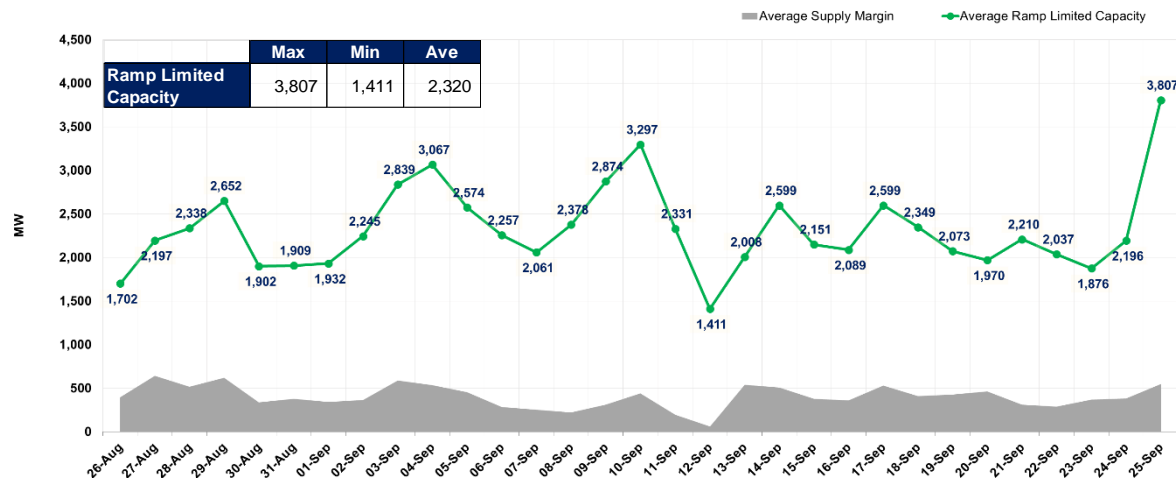
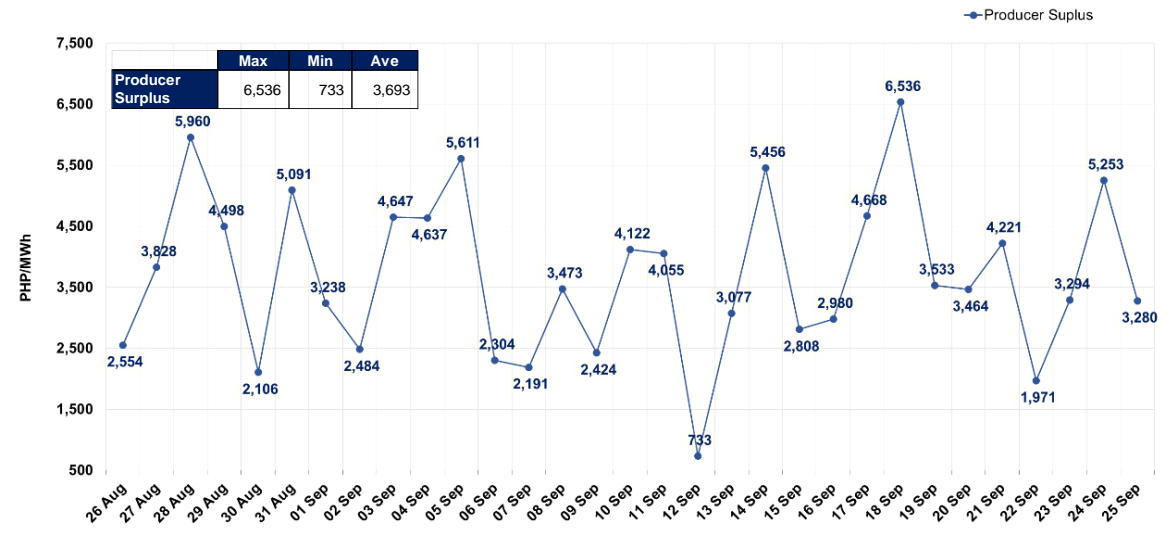


2,320 MW
(2,891 MW in August)

PRODUCER SURPLUS



3,693 PHP
(PHP3,968/MW in August)



Producer/generator surplus, averaged at PHP3,693/MWh this month from PHP3,968/MWh last month. This is an average of 7 percent decrease as compared to August 2022.

For the month of September, **ramp-limited capacity** likewise decreased by an average of 20% from an average of 2,891 MW last month to 2,320 MW this month.

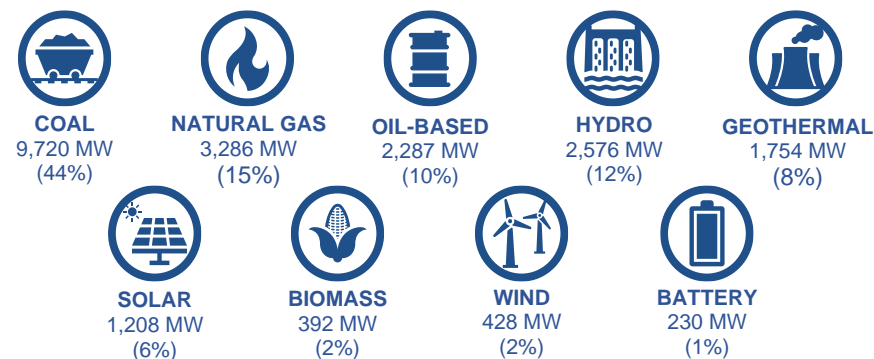
MONTHLY MARKET ASSESSMENT REPORT

(26 August – 25 September 2022)

CAPACITY PROFILE

- The WESM's registered capacity experienced minimal changes in September 2022 from 21,880.9 MW to 21,880.6 MW due to the net registration changes in the following plants:

Status	Market Participant Name	Market Trading Node	Plant Type	Pmax (MW)		Change (MW)
				Old	New	
Increased	HyperGreen Energy Corporation	01HYPGRN_G01	Biomass	12.6	13.4	0.8
Decreased	Sulu Electric Power and Light (Phils.), Inc.	04SEPSOL_G01	Solar	41.6	40.5	(1.1)
TOTAL						(0.3)

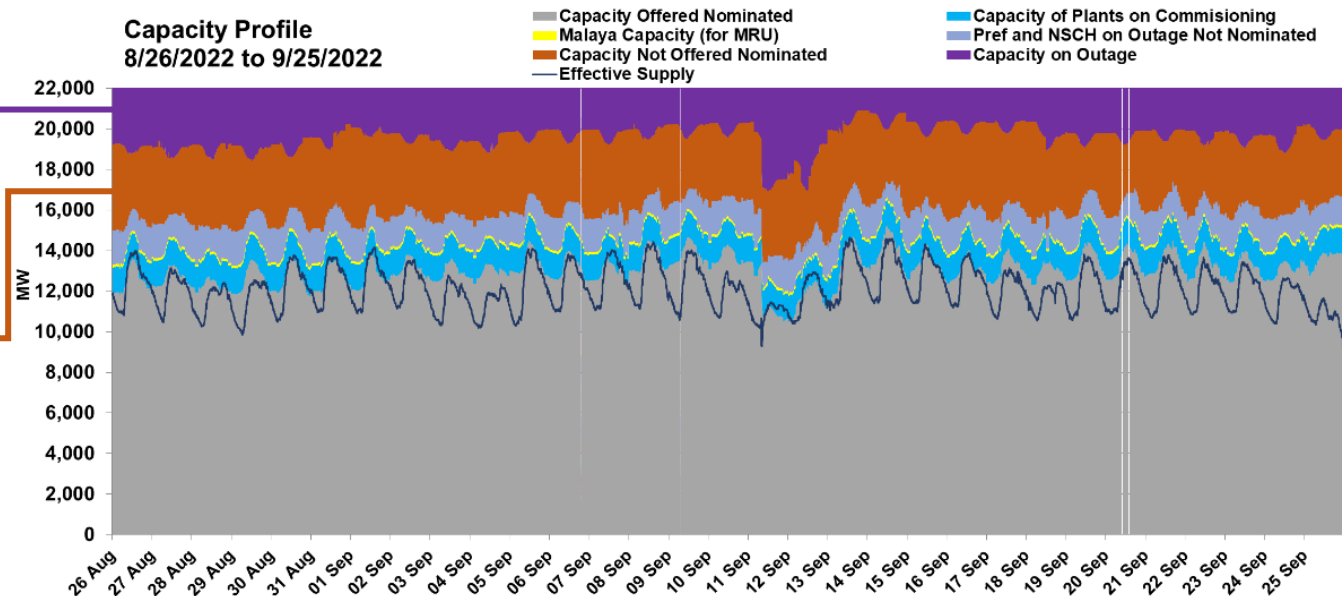


Capacity on Outage (17% of Registered Capacity)

- Increased by 10.4%, which was mostly due to the increased capacities on outage of Coal power plants under forced and maintenance outage categories

Capacity NOT Offered (17% of Registered Capacity)

- increased by an average of 2% or from an average of 3,664 MW last month to 3,739 MW this month



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

Capacities under Testing and Commissioning (6% of Registered Capacity) almost maintained its level from 1,265 MW last month to 1,267 this month.

Capacities Offered/Nominated (59% of Registered Capacity)

- Declined by an average of 3.4% or was noted at 13,008 MW as compared to last month's 13,466 MW

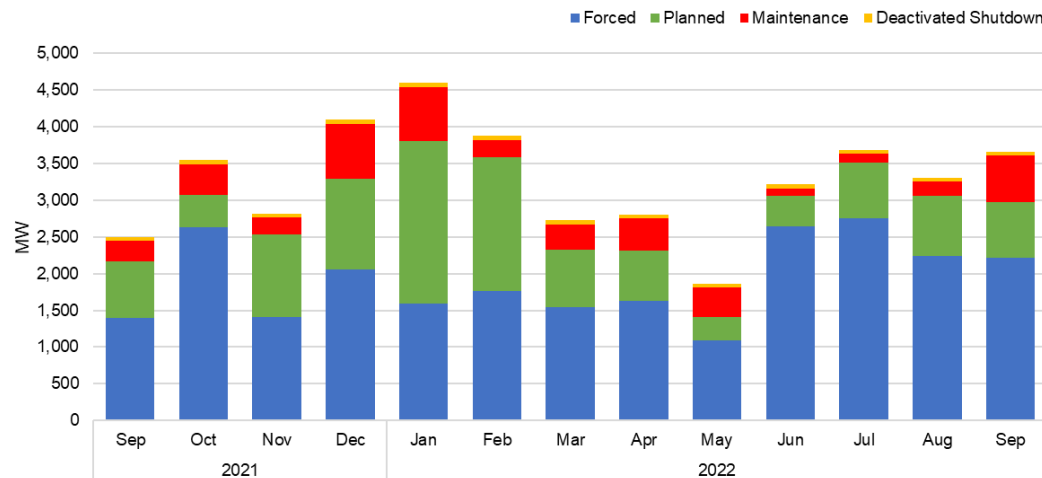
Note: Capacities not offered are further subject to validation and assessment of the PEMC-Enforcement and Compliance Office (ECO)

MONTHLY MARKET ASSESSMENT REPORT

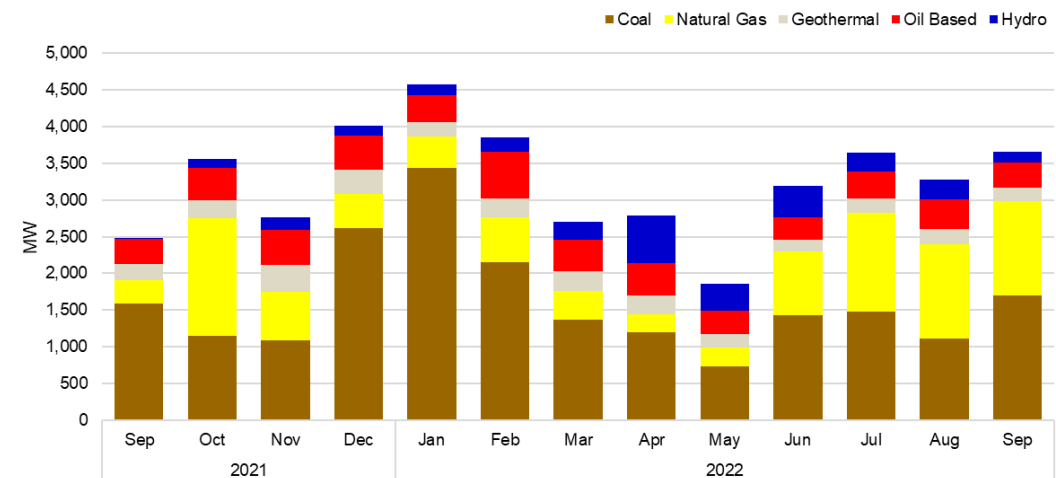
(26 August – 25 September 2022)

CAPACITY PROFILE

CAPACITY ON OUTAGE BY CATEGORY



CAPACITY ON OUTAGE BY PLANT TYPE



The September 2022 billing month opened with a relatively high level of capacities on outage at around 4,200 MW. However, outage levels declined on 13-14 September 2022 at around 2,800 MW following the resumption of large Coal and Natural gas power plants that were previously on outage which then again went on outage towards the end of the month.

Average Capacities on outage accounted for 17% of the total registered capacity, or an average of 3,718 MW, which is higher than the 3,368 MW during the August 2022 billing period. The increase in the average capacities on outage was mainly due to the increase in Coal power plants under forced outage category previously caused by technical issues of the plants as aggravated by the deration of natural gas power plants.

As the month ended, the outage level was at about an average of 3,300 MW.

	September 2022		
	Min	Max	Average
Capacity on Outage	2,529 MW	5,982 MW	3,659 MW

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

MONTHLY MARKET ASSESSMENT REPORT

(26 August – 25 September 2022)

MARKET TRANSACTIONS

BILATERAL CONTRACT QUANTITIES



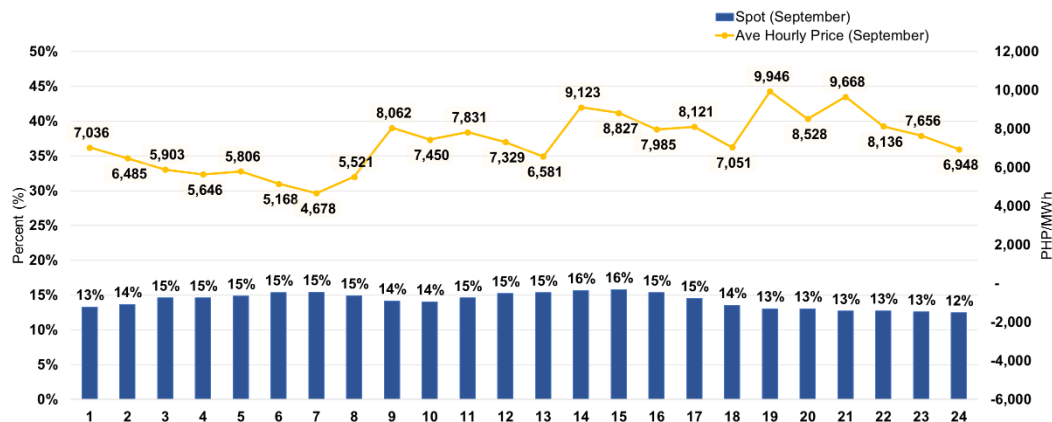
85.8%
(83.8% in August)

SPOT EXPOSURES



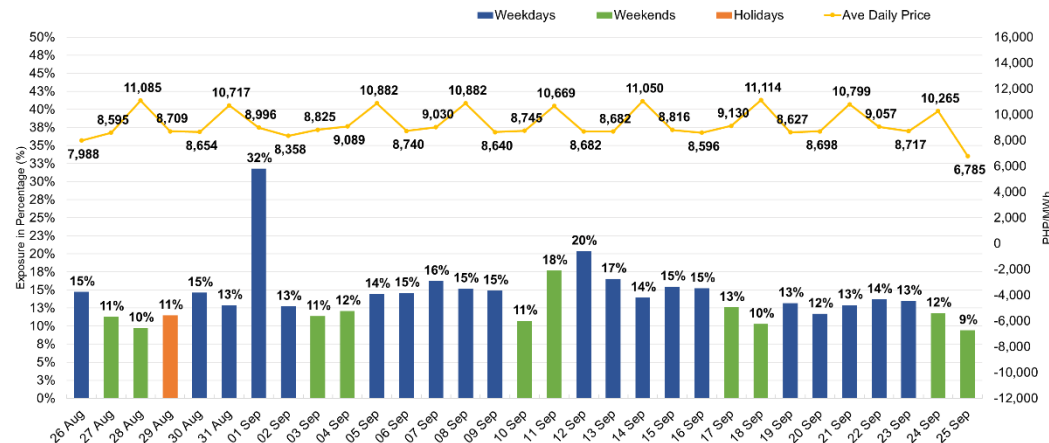
14.2%
(16.2% in August)

HOURLY SPOT



Total spot quantities of generator participants in September posted an average of 14% during off-peak hours and 14.4% during peak hours – the resulting increase was mainly influenced by the adjustment in energy sourcing which caused market participants to be exposed in the market or enter into an emergency power supply agreements due to changes in contractual arrangements with their counterparty.

DAILY SPOT

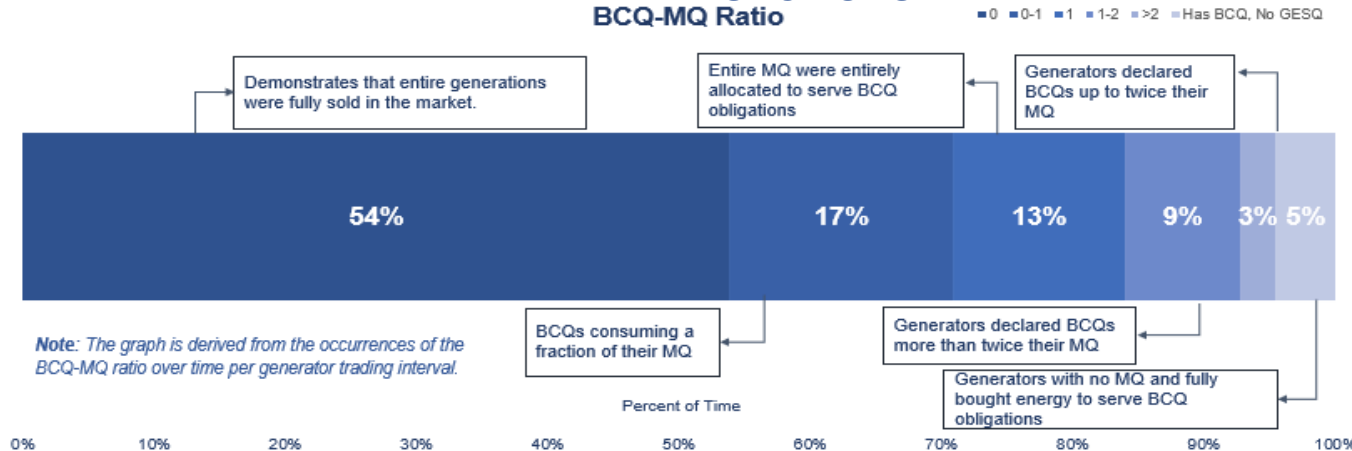


Spot exposures during weekdays averaged at 15.3% while it was 11.7% during weekends. Due to high level of capacities on outage, brought about by transmission line outage which subsequently led to the forced outages of various power plants by an average of 3,300MW with contractual obligation, spot exposures on 01 September 2022 climbed to 32%.

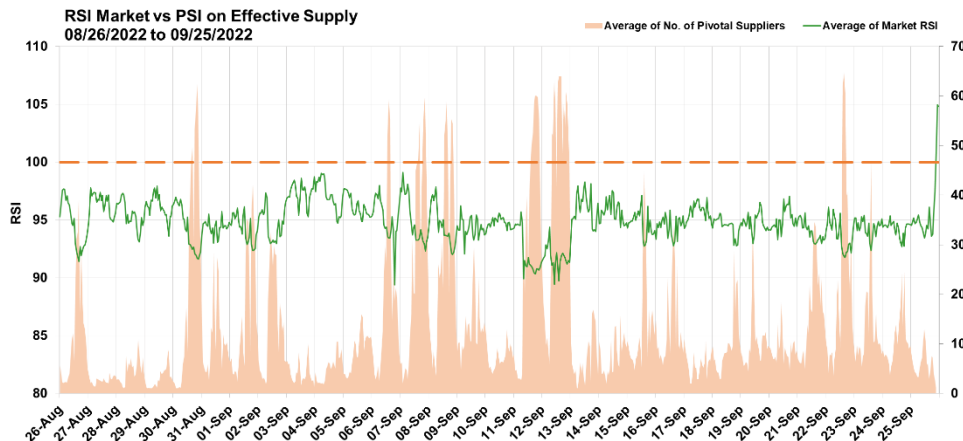
MONTHLY MARKET ASSESSMENT REPORT

(26 August – 25 September 2022)

MARKET TRANSACTIONS BCQ-MQ Ratio



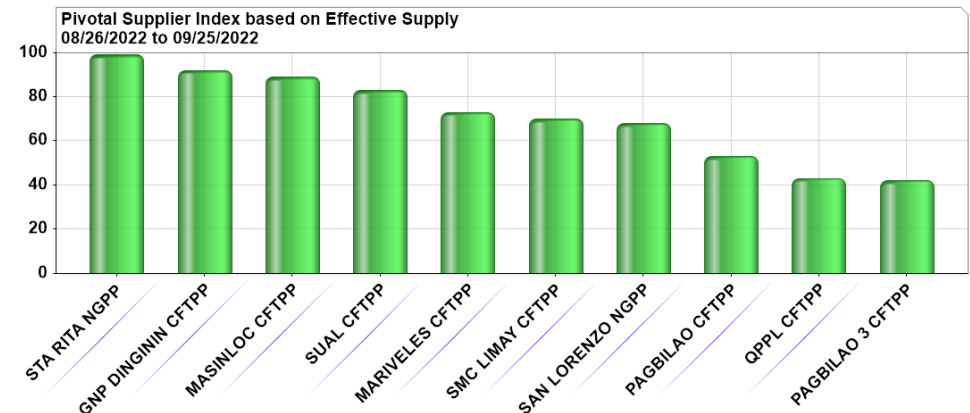
MARKET RSI



- The market Residual Supply Index (RSI) was below the 100% mark for about 99.5% of the time this month compared to about 99.1% last month.
- During the September 2022 billing month, the market resulted in RSIs ranging from 89.1% to 106.1% and averaged at 94.9%. The average market prices for intervals with RSI below 100% was PHP9,306/MWh but would have been at an average price of PHP16,886/MWh if SPC was not imposed, while those with RSIs above 100 was PHP1,413/MWh and would have been PHP2,252/MWh without imposition of SPC.

STRUCTURAL COMPETITION INDICES

PIVOTAL PLANTS



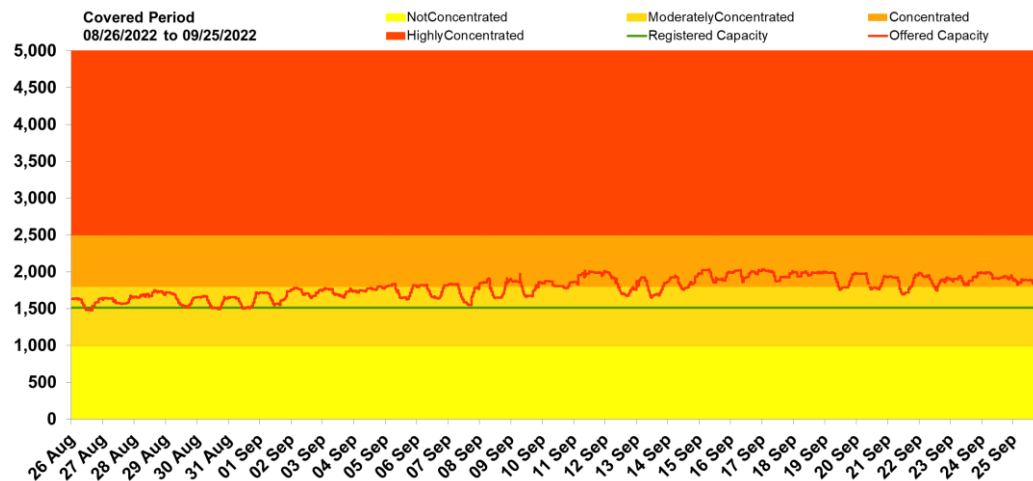
- A total of 156 power plants were pivotal during the period from 151 last month, with 71% or 110 plants coming from the Luzon region and 46 plants from the Visayas region.
- The noted decrease in effective supply, due to higher level of capacities on outage and the effects of ramp limited capacities, translated to a low RSI and high number of pivotal suppliers per dispatch interval.

MONTHLY MARKET ASSESSMENT REPORT

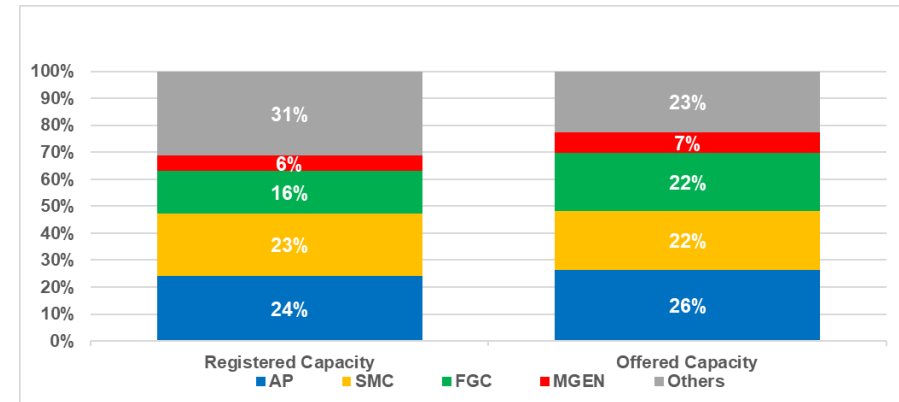
(26 August – 25 September 2022)

MARKET CONCENTRATION, ENERGY TRADING AMOUNT (ETA), AND SPOT EXPOSURE

MARKET HHI



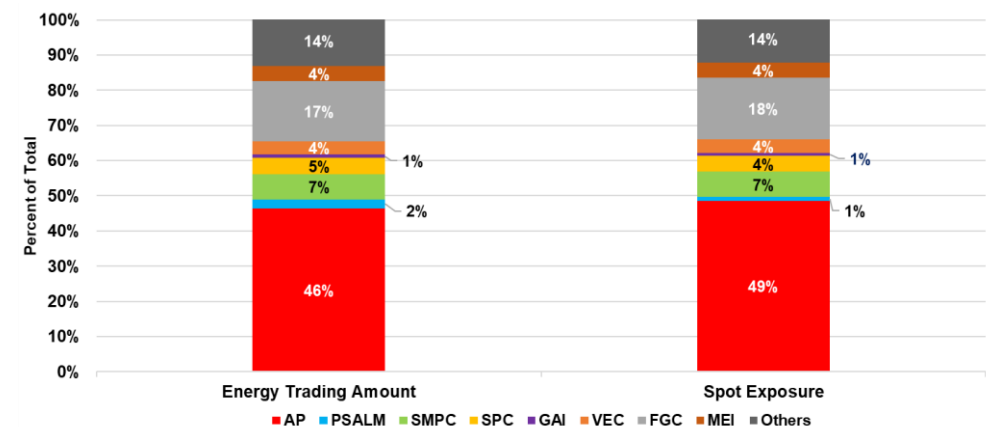
MARKET SHARE



Aboitiz Power (AP), San Miguel Corporation (SMC), First Gen Corporation (FGC), and Meralco PowerGen Corporation (MGEN) dominated the market with their combined market shares comprising 69% of the total registered capacity in the WESM. The shares of the listed market's major participant remained similarly close to last month.

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

- Based on Offered Capacity: **moderately concentrated market** for 49.8% of the time (4,448 intervals) this month from 66.8% of the time last month and **concentrated market** for 50.1% of the time or for 4,470 intervals
 - o Brought about by the effects of **changes in the availability of generators** which subsequently affected the resulting market shares coupled with the changes in offer behavior of market participants which may have been an effect of the frequent imposition of the SPC
- Based on Registered Capacity: **moderately concentrated market** for the whole month of September 2022



The top 3 participants with highest shares in both measures comprised 71% of the total ETA and spot exposure which may indicate high level of market concentration that affects market competition.

MONTHLY MARKET ASSESSMENT REPORT

(26 August – 25 September 2022)

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

(26 August – 25 September 2022)

Annex A. List of Major Plant Outages

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Days)	Outage Type	Remarks
Luzon							
GEO	Bacman 2	60	09/25/2022 4:26	09/25/2022 18:01	1	Forced Outage	Tripped during Black Start Ancillary Test with Generator 87 Stator Differential Alarm
COAL	SLTEC 1	122	09/25/2022 3:21			Forced Outage	Tripped due to high bearing temperature.
OIL	TMO Unit 2	49	09/22/2022 22:12			Planned Outage	Planned Outage
COAL	GNP Dinginin 2	668	09/18/2022 11:59			Maintenance Outage	Inspection of contaminated turbine. ETD 10-5-2022 .
GEO	Tiwi 2	60	09/18/2022 7:01	09/18/2022 21:15	1	Planned Outage	Planned Outage
OIL	TMO Unit 1	63.8	09/17/2022 0:06	09/23/2022 0:31	6	Planned Outage	Planned Outage until September 22. 2022.
OIL	Limay 3	60	09/17/2022 0:01	09/20/2022 16:30	4	Planned Outage	Planned Outage until September 23. 2022.
COAL	SBPL	455	09/15/2022 0:01	09/24/2022 18:56	10	Planned Outage	Planned Outage until September 24. 2022.
COAL	Sual 2	647	09/11/2022 7:52	09/12/2022 3:37	1	Forced Outage	Affected by double outage of Bolo-Nagsaag 500kV L1.L2
COAL	Sual 1	647	09/11/2022 7:52	09/13/2022 9:10	2	Forced Outage	Affected by double outage of Bolo-Nagsaag 500kV L1.L2
COAL	Masinloc 3	335	09/11/2022 7:52	09/13/2022 6:44	2	Forced Outage	Affected by double outage of Bolo-Nagsaag 500kV L1.L2
COAL	Masinloc 2	344	09/11/2022 7:52	09/12/2022 13:42	1	Forced Outage	Affected by double outage of Bolo-Nagsaag 500kV L1.L2
COAL	Masinloc 1	315	09/11/2022 7:52	09/12/2022 0:39	1	Forced Outage	Affected by double outage of Bolo-Nagsaag 500kV L1.
COAL	QPPL	460	09/11/2022 2:05	09/12/2022 19:04	2	Forced Outage	Tripped due to loss of primary air flow.
OIL	Limay 6	60	09/03/2022 0:07	09/07/2022 14:09	5	Planned Outage	Planned Outage up to Sept.7. 2022.
NATG	Sta. Rita 2	255.7	09/02/2022 23:44	09/08/2022 2:32	5	Planned Outage	Planned Outage
COAL	Calaca 2	300	09/01/2022 18:01			Forced Outage	Emergency shutdown due to high generator vibration.
COAL	SLPGC 1	150	08/31/2022 23:54			Planned Outage	Planned Outage until September 30. 2022
GEO	Tiwi 6	57	08/30/2022 8:06	08/31/2022 17:35	1	Planned Outage	Affected by planned outage of Man Unit transformer.
COAL	Calaca 2	300	08/28/2022 17:54	08/30/2022 19:27	2	Forced Outage	Emergency shutdown due to high generator vibration
HYD	Angat M 2	50	08/28/2022 17:01	08/28/2022 13:50	2	Forced Outage	Due to oil cooler leakage.
BIOF	VS Grupal	5.4	08/18/2022 0:01	09/10/2022 12:24	24	Planned Outage	Planned outage.
GEO	Tiwi 1	60	11/30/2021 18:32			Forced Outage	Steam supply diverted to Unit 2.
COAL	SMC 1	150	08/06/2022 14:10	09/01/2022 8:48	26	Forced Outage	Tripped from 146MW load due to furnace pressure high.
COAL	SLTEC 1	122	08/11/2022 23:43	09/24/2022 17:06	44	Planned Outage	Maintenance Outage until September 20. 2022
HYD	San Roque 1	145	03/14/2022 0:01	08/30/2022 0:01	169	Planned Outage	Planned outage from 14 March–09 September 2022.
COAL	Pagbilao 2	382	08/06/2022 0:46	09/04/2022 12:14	29	Planned Outage	On planned outage on August 6 - September 4. 2022.
OIL	MGTPP	85	09/29/2021 16:52			Forced Outage	Tripped from 14MW due to turbine bearing shaft vibration
COAL	Masinloc 1	315	08/24/2022 23:59	08/31/2022 13:17	7	Maintenance Outage	Maintenance outage to repair suspected boiler tube leak.
OIL	Malaya 1	300	05/03/2019 18:21			Forced Outage	Declared unavailable due to motorization of unit generator caused by the non-opening
GEO	Makban 6	55	04/11/2013 22:44			Deactivated Shutdown	Conducted gas compressor test
GEO	Makban 4	63.2	08/13/2022 16:19	09/21/2022 3:53	38	Planned Outage	Maintenance Outage until September 25. 2022
NATG	Ilijan B3	220	06/05/2022 0:01			Forced Outage	End of Cooperation Period of Ilijan NGPP.
NATG	Ilijan B2	190	06/05/2022 0:01			Forced Outage	End of Cooperation Period of Ilijan NGPP.
NATG	Ilijan B1	190	05/02/2022 20:08			Forced Outage	Malampaya Natural Gas Supply Restriction
NATG	Ilijan A3	220	06/04/2022 22:42			Forced Outage	End of Cooperation Period of Ilijan NGPP.
NATG	Ilijan A2	190	06/04/2022 19:45			Forced Outage	End of Cooperation Period of Ilijan NGPP.
NATG	Ilijan A1	190	06/04/2022 22:53			Forced Outage	End of Cooperation Period of Ilijan NGPP.
COAL	GNP Dinginin 1	668	08/20/2022 23:45	09/12/2022 23:55	23	Maintenance Outage	Maintenance outage to address critical vibration issue on turbine bearing no.1
COAL	GN Power 2	316	08/23/2022 18:30	08/31/2022 13:08	8	Forced Outage	Emergency shutdown due to boiler tube leak.
HYD	Caliraya 1	14	08/02/2022 8:01	09/17/2022 20:38	47	Planned Outage	Planned Outage
COAL	Calaca 2	300	11/18/2021 7:49	08/28/2022 14:25	283	Forced Outage	Tripped due to generator stator ground fault
NATG	Avion 1	47.2	08/21/2022 0:07	09/16/2022 19:05	27	Planned Outage	To conduct annual inspection.
HYD	Angat M 4	50	02/14/2022 0:01			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
Visayas							
COAL	HPCO	2	09/25/2022 19:30			Maintenance Outage	Offline due to weekly maintenance.
GEO	Leyte 2	39.3	09/23/2022 22:14	09/25/2022 10:14	2	Forced Outage	Ruptured/burst steam scrubber
OIL	Bohol 3	4.2	09/23/2022 15:09			Forced Outage	Emergency cut out due to cut off bolt at FIP No. 12.
OIL	Isabel 6	10.18	09/23/2022 11:01			Forced Outage	Reserve shutdown
COAL	PEDC 3	150	09/23/2022 2:01			Forced Outage	Auto-tripped due to high furnace pressure
OIL	Bohol 4	4	09/22/2022 15:29	09/23/2022 10:10	1	Forced Outage	Emergency cut out due to high temperature of main bearing.
OIL	TPVI 4	6.8	09/22/2022 8:29	09/22/2022 20:51	1	Forced Outage	Force outage. Unit cut-out due to internal inspection as part of first stage running in pro
COAL	CEDC 2	82	09/22/2022 0:49			Planned Outage	CUT-OUT FROM THE SYSTEM FOR ANNUAL PMS
GEO	PGPP1 Unit 2	37.5	09/19/2022 2:07			Forced Outage	Auto-tripped. AVR trip due to loss of excitation.
BIOF	FFHC	9	09/19/2022 0:26	09/20/2022 12:48	2	Maintenance Outage	Offline due to weekly shutdown
OIL	Isabel 6	10.18	09/18/2022 18:58	09/19/2022 7:08	1	Forced Outage	Reserve shutdown.
OIL	Isabel 4	10.17	09/18/2022 18:58	09/19/2022 7:08	1	Forced Outage	Reserve shutdown.
BIOF	HPCO	2	09/18/2022 5:34	09/19/2022 16:52	1	Maintenance Outage	Offline due to weekly maintenance.
GEO	PGPP2 Unit 2	20	09/18/2022 0:02			Planned Outage	Offline to conduct maintenance activity.
OIL	Isabel 5	15.12	09/17/2022 23:07	09/18/2022 18:16	1	Forced Outage	Cut-out. reserve shutdown.
OIL	Isabel 3	15.06	09/17/2022 23:07	09/18/2022 18:11	1	Forced Outage	Cut-out. reserve shutdown.
OIL	TPVI 6	6.8	09/16/2022 18:22	09/18/2022 20:36	2	Forced Outage	EMERGENCY CUT-OUT DUE TO FUEL LEAK
OIL	CENPRI 2	4.5	09/15/2022 19:51	09/20/2022 18:01	5	Forced Outage	Emergency offline to conduct inspection of governor.
OIL	CENPRI 5	6.7	09/14/2022 17:13	09/15/2022 18:16	1	Forced Outage	Isolated due to tripping of 69kV Bacolod-San Enrique Sub TL. Reconnected back to the
OIL	CENPRI 4	6.7	09/14/2022 17:13	09/15/2022 19:16	1	Forced Outage	Isolated due to tripping of 69kV Bacolod-San Enrique Sub TL. Reconnected back to the
OIL	CENPRI 3	4.5	09/14/2022 17:13	09/15/2022 19:15	1	Forced Outage	Isolated due to tripping of 69kV Bacolod-San Enrique Sub TL. Reconnected back to the
OIL	CENPRI 2	4.5	09/14/2022 17:13	09/15/2022 19:14	1	Forced Outage	Isolated due to tripping of 69kV Bacolod-San Enrique Sub TL. Reconnected back to the
OIL	CENPRI 1	4.5	09/14/2022 17:13	09/15/2022 19:12	1	Forced Outage	Isolated due to tripping of 69kV Bacolod-San Enrique Sub TL. Reconnected back to the
COAL	Keppco Salcon 2	103	09/14/2022 0:56	09/17/2022 5:05	3	Forced Outage	EMERGENCY CUT-OUT DUE TO POSSIBLE BOILER TUBE LEAK
OIL	PDP3 H	13	09/13/2022 16:39	09/14/2022 17:57	1	Forced Outage	Internal trouble
OIL	PDP3 G	13	09/13/2022 16:39	09/14/2022 13:30	1	Forced Outage	Internal trouble
OIL	PDP3 C	12	09/13/2022 16:39	09/14/2022 17:56	1	Forced Outage	Internal trouble
GEO	PGPP1 Unit 2	37.5	09/12/2022 0:02	09/18/2022 20:31	7	Maintenance Outage	Offline to conduct corrective maintenance activities
BIOF	HPCO	2	09/11/2022 11:47	09/12/2022 20:28	1	Maintenance Outage	Offline due to weekly maintenance.
OIL	Bohol 4	4	09/07/2022 17:56	09/09/2022 9:10	2	Forced Outage	Emergency cut-out from the system due to fuel oil leak at delivery pipe on cylinder no. 1
GEO	PGPP2 Unit 3	20	09/06/2022 16:30	09/13/2022 17:24	7	Forced Outage	Auto-tripped. with indication Electrical Protection Trip.
BIOF	HPCO	2	09/04/2022 11:51	09/05/2022 16:52	1	Maintenance Outage	Offline due to weekly shutdown maintenance
OIL	TPVI 4	6.8	08/30/2022 13:40	09/22/2022 8:17	23	Forced Outage	UNIT TRIPPED
COAL	CEDC 1	82	08/29/2022 0:27	09/18/2022 21:55	21	Planned Outage	APMS (GOMP)
BIOF	HPCO	2	08/28/2022 12:03	08/29/2022 21:20	1	Maintenance Outage	Offline due to weekly maintenance.
COAL	TPC-Sangi 1	82	08/27/2022 0:01	08/27/2022 22:21	1	Forced Outage	Unit cut-out from the system to facilitate replacement and repair of Coal Feeder Expans
OIL	TPVI 3	6.8	08/26/2022 14:05	08/31/2022 8:43	5	Forced Outage	Unit unable to cut-in due starting failure due to high temperature of main bearing 3
BIOF	VMC	2.5	03/13/2022 9:38			Maintenance Outage	Offline due to weekly maintenance.
WIND	SLWind	54	07/05/2022 20:33			Forced Outage	Auto tripped due to line fault.
BIOF	SCBE	7.4	05/06/2022 6:45			Forced Outage	Offline due to internal problem
GEO	PGPP2 Unit 1	20	08/15/2022 0:02	09/10/2022 20:22	27	Maintenance Outage	Offline due to PMS.
GEO	Malitbog BC	14	08/13/2022 11:52			Forced Outage	Tripped.
GEO	Mahanagdong A2	5	08/13/2022 11:52			Forced Outage	Tripped.

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