Market Surveillance Committee
Monthly Market Assessment Report

26 September to 25 October 2022

February 2023

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

MONTHLY MARKET ASSESSMENT REPORT

(26 September – 25 October 2022)

Philippine Electricity Market Corporation

MMAR-2022-10

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ASSESSMENT OF THE MARKET

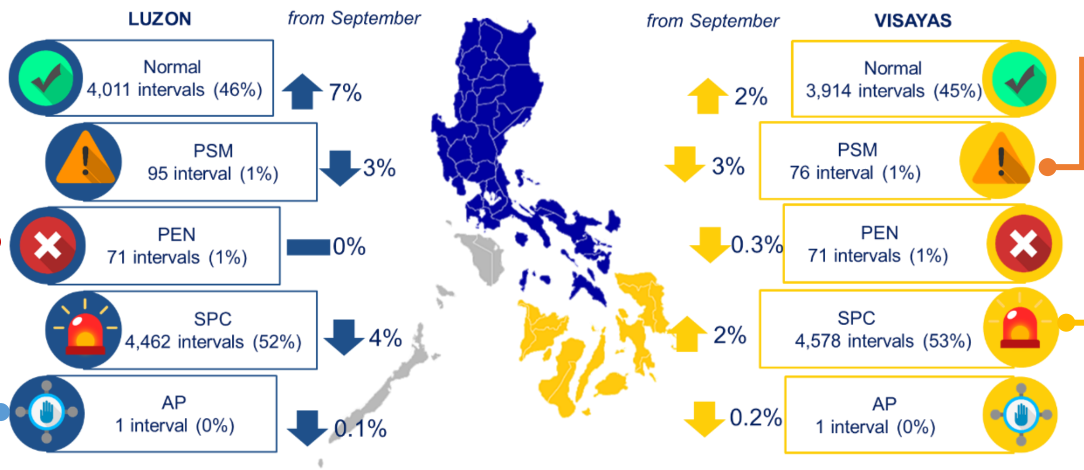
NOTABLE HIGHLIGHTS

1. **NGCP restored the damaged 138kV Samboan-Amlan submarine line in Visayas**.
   - Successful energization was done on 02 October 2022 from its unavailability on 15 June 2021 due to the dredging and re-channeling activities of the Department of Public Works and Highways which limited the flow of power between the islands of Negros and Cebu into half from 180MW to just 90MW.
2. Two (2) weather disturbances
   - **Typhoon Karding:** Largely affected the system and the market on 26 September 2022 causing some **Luzon Transmission Lines to be unavailable**.
   - **Typhoon Neneng: Seven (7) Ilocos Norte towns experienced black out** on 16 October 2022.
3. **Sustained high prices persisted** during the month in review as high capacities on outage affected the level of effective supply and subsequently led to the frequent imposition of secondary price cap.
4. Congestions 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 7% of the time or equivalent to 606 intervals from 3,019 intervals last month, as Samboan-Amlan line 1 became available.
   - Maasin-Ubay line 1 was congested for 2,881 intervals or equivalent to 33% 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 both for Luzon and Visayas.

One (1) interval under Market Intervention (MI)
- On 06 October 2022 at 0135H, MO-initiated Market Intervention due to failure in Data Transfer of Load forecast to Market Run.



Price substitution methodology (PSM)
- Decreased to 76 intervals, from 344 intervals last month, in Luzon and Visayas, signifying lower instances of congestions that triggereds PSM impositions.
- Regional impositions of PSM for 19 intervals were imposed when the inter-connection between the grids was unavailable.

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:** increased from last month, due to depleted supply margin from 28 September to 15 October and 17-25 October 2022
- **Regional:** 117 intervals for Visayas region during those instances when the inter-connection between the grids was unavailable.

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MARKET OUTCOME

EFFECTIVE SUPPLY

12,124
MW
(12,194MW in September)

DEMAND PLUS RESERVE SCHEDULE

11,851
MW
(11,723MW in September)

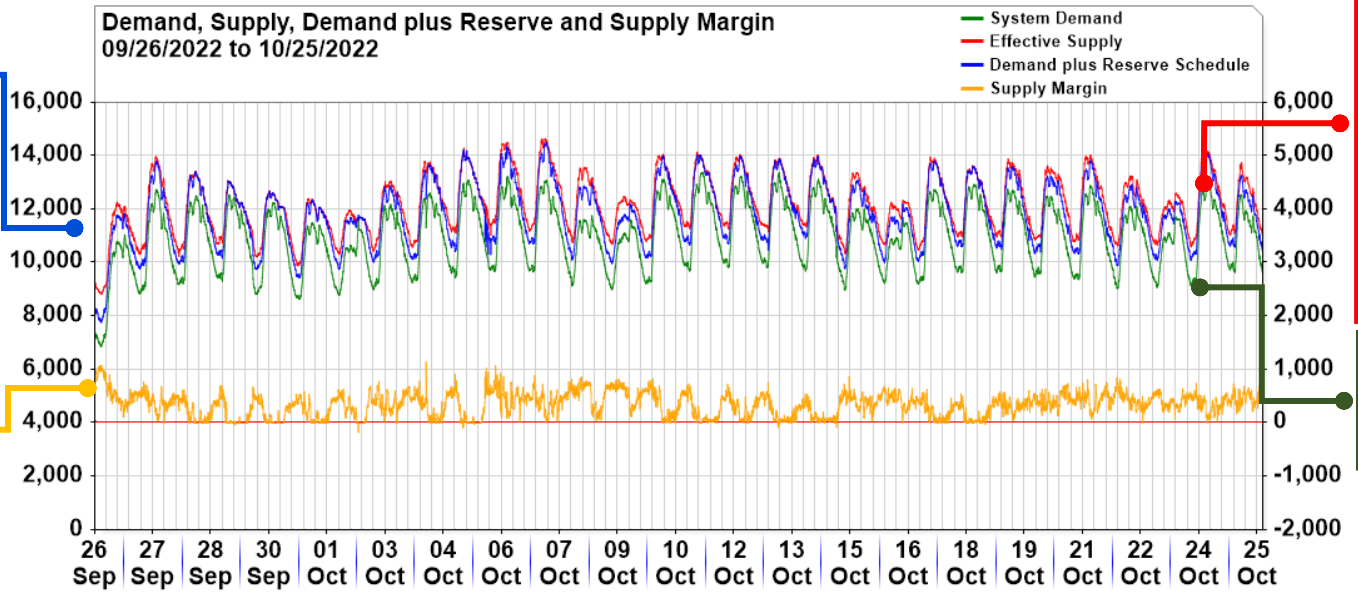
SUPPLY MARGIN

343
MW
(403 MW in September)

Demand plus Reserve Schedules

- **Increased by an average of 1.1%** caused mainly by the **higher economic activities** which influenced the electricity consumption for the month
- Averaged at 11,851 MW as compared to last month's 11,723 MW

Supply Margin declined by 14.4%, considering the dynamics between supply and demand.



Effective Supply

- 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. Effective Supply slightly increased by an average of 0.6% or also equivalent to an average of 12,194MW from 12,124MW last month.

System Demand increased by an average of 1.5% or was noted to be at 10,984 MW from 10,822 MW last month, even with the onset of the rainy season.

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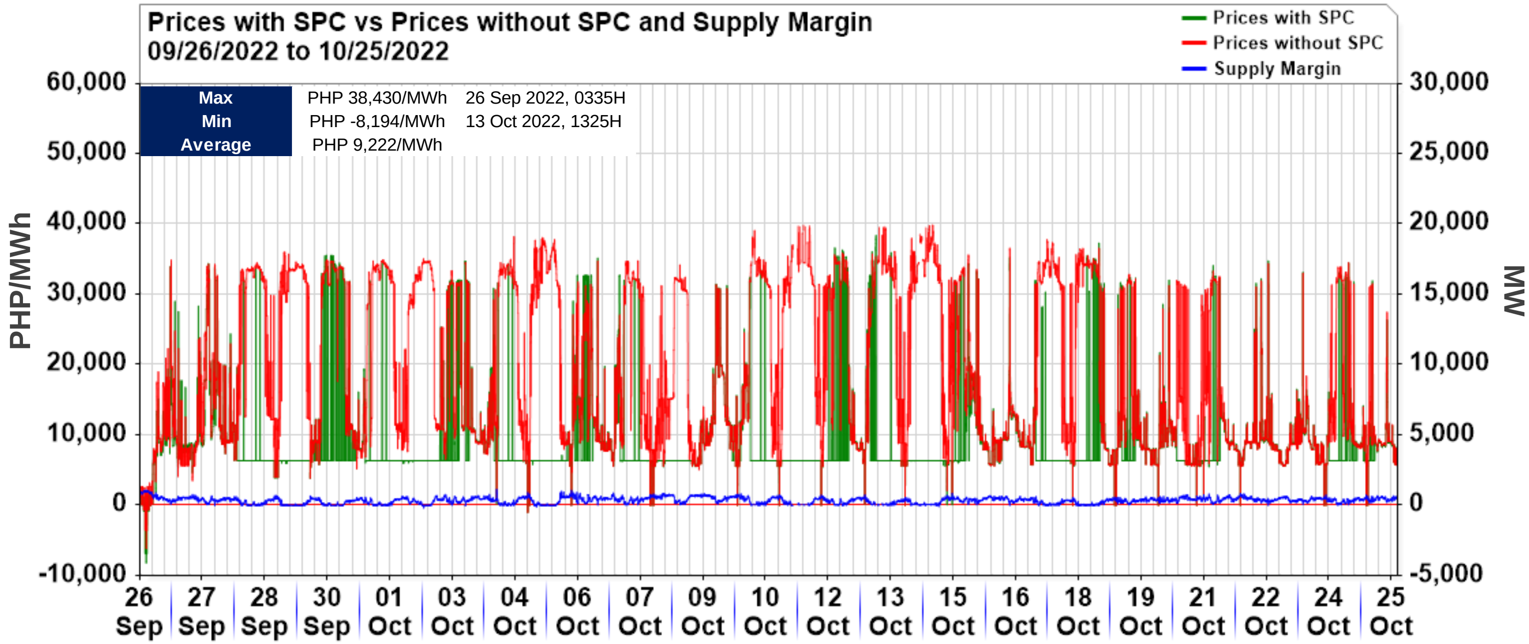
Zone	Average LWAP (PHP/MWh)
NLUZON	9,072.59
MMANILA	9,254.52
SLUZON	9,181.91
LEYTE	9,389.90
CEBU	9,261.63
NEGROS	9,296.97
BOHOL	11,613.75
PANAY	9,410.30

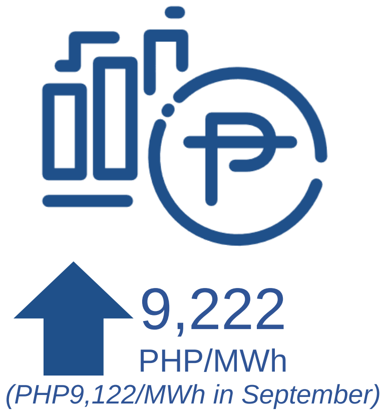
MARKET OUTCOME

Given the dynamics of supply and demand, the level of market prices increased, on average, by 1.1% or was noted at an average of PHP9,222/MWh from PHP9,122/MWh last month. The estimated monthly average price would have been at PHP20,091/MWh if SPC was not imposed. Year-on-year comparison posted a 48.6% increase from an average price of PHP6,204/MWh last year noting that outages this year were significantly higher than in October 2021, coupled with the expected economic growth resulting in higher consumption this year.

Even with the restoration of the damaged Cebu-Negros submarine cable of NGCP on 02 October 2022, congestion events in the area still became persistent due to tight supply situation in the Bohol region which, in turn, continuously affected the power rates in the Visayas region causing disparity, as depicted in the table of prices.



PRICE



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MARKET OUTCOME

RAMP LIMITED CAPACITY

2,152

MW

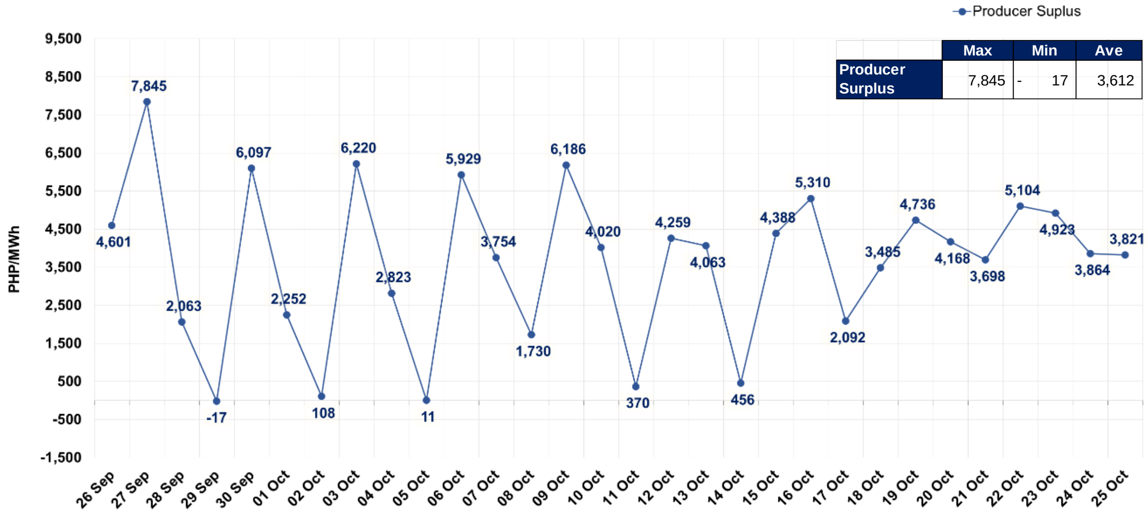
(2,891MW in September)

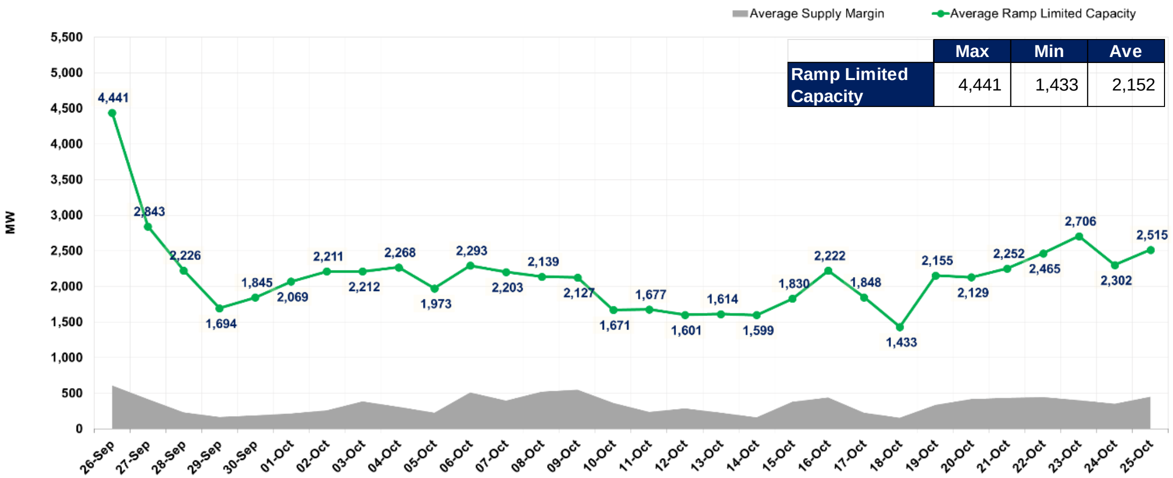
PRODUCER SURPLUS

3,612

PHP

(PHP3,693/MWh in September)





Producer/generator surplus, averaged at PHP3,612/MWh this month from PHP3,693/MWh last month. This is an average of 2% decrease as compared to September 2022.

For the month of October, **ramp-limited capacities** decreased by an average of 7% from an average of 2,320 MW last month to 2,152 MW this month.

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CAPACITY PROFILE

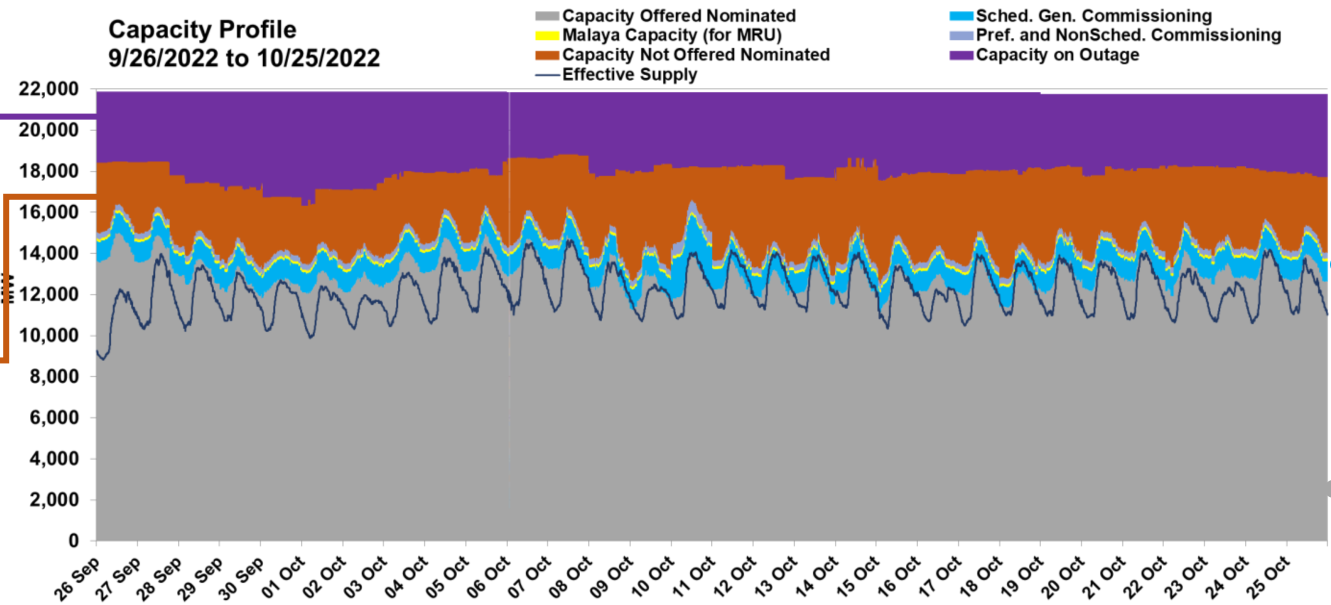
The WESM's registered capacity recorded changes in October 2022 from 21,880.6 MW to 21,750.8 MW due to the net registration changes in the following plants:

Status	Market Participant Name	Market Trading Node	Plant Type	Pmax (MW)		Change (MW)
				Old	New	
Decreased	AP Renewables Inc.	03MKBN_A	Geothermal	126.4	114	(12.4)
	AP Renewables Inc.	03MKBN_B	Geothermal	126.4	116	(10.4)
	AP Renewables Inc.	03MKBN_C	Geothermal	110	30	(80)
	Asia Pacific Energy Corporation	01APEC_G01	Coal	52	25	(27)
TOTAL						(129.8)

COAL 9,693 MW (44%)
NATURAL GAS 3,286 MW (15%)
OIL-BASED 2,287 MW (10%)
HYDRO 2,576 MW (12%)
GEOTHERMAL 1,651 MW (8%)
SOLAR 1,208 MW (6%)
BIOMASS 392 MW (2%)
WIND 428 MW (2%)
BATTERY 230 MW (1%)

Capacity on Outage (18% of Registered Capacity) increased by 10.4%, which was mostly due to Coal power plants under forced and maintenance outage categories.

Capacity NOT Offered (16% 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 attributable to market system and resource constraints.



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 MW 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)*

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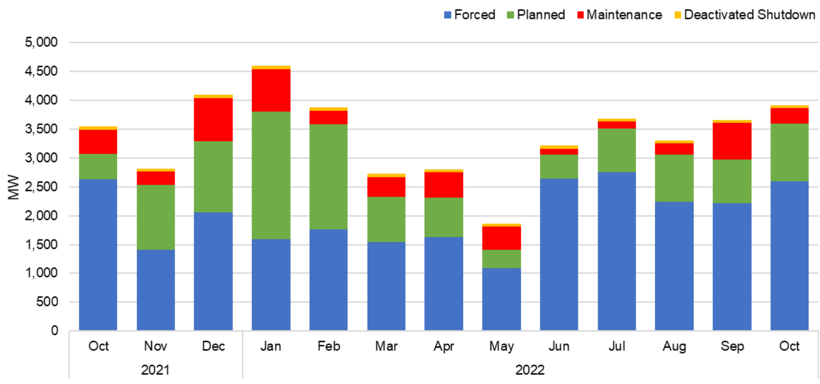
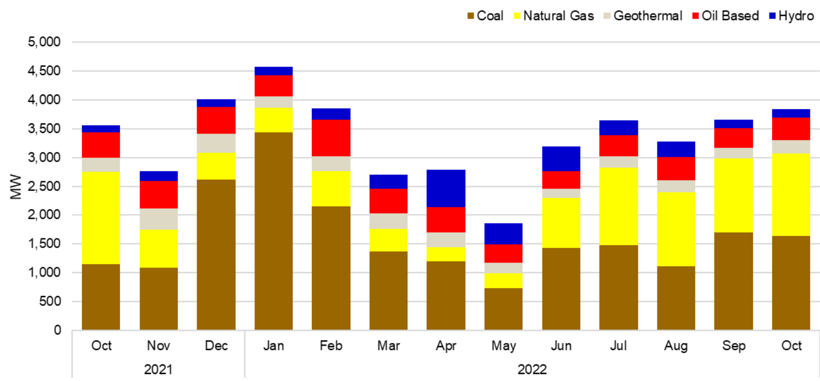
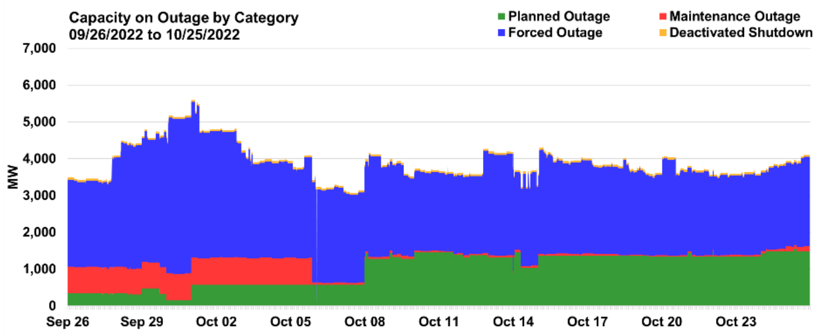
CAPACITY PROFILE

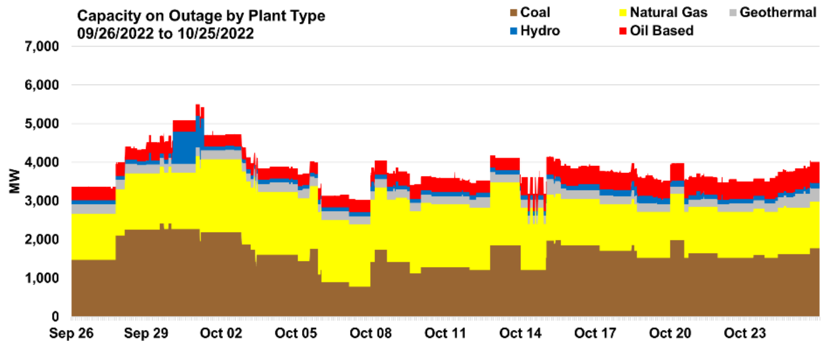
CAPACITY ON OUTAGE BY CATEGORY



CAPACITY ON OUTAGE BY PLANT TYPE







The October 2022 billing month opened with relatively low level of capacities on outage at around 3,300 MW. However, outage levels increased on 28 September-05 October 2022 at around 5,000 MW due to force outages of large Coal and Natural gas power plants which have been observed towards the end of the month.

Average Capacities on Outage accounted for 18% or an average of 3,892 MW, which is higher than the 3,718 MW during the September 2022 billing period. The increase in the average capacities on outage was mainly due to forced outages caused by technical issues of the involved plants. As the month ended, the outage level was at about an average of 4,100 MW.

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

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MARKET TRANSACTIONS

BILATERAL CONTRACT QUANTITIES

84.7%

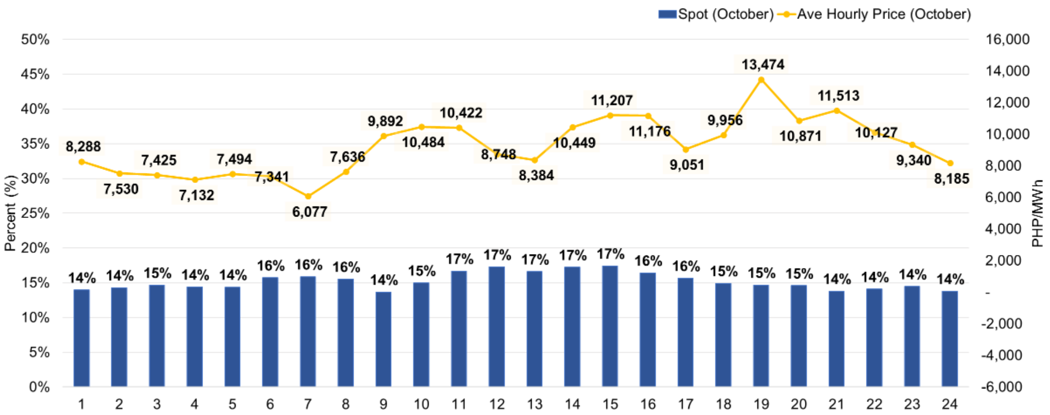
(85.8% in September)

SPOT EXPOSURES

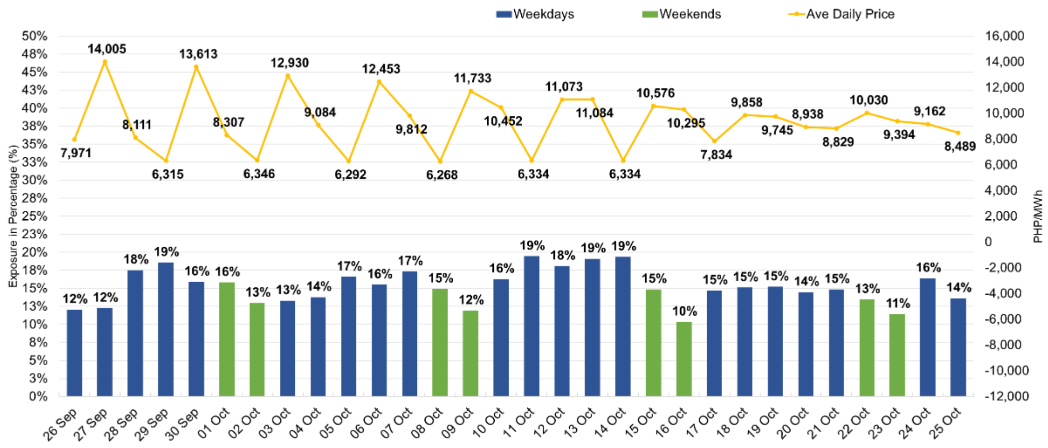
15.3%

(14.2% in September)

HOURLY SPOT



DAILY SPOT



Total spot quantities of generator participants in October posted an average of 14.5% during off-peak hours and 15.9% during peak hours. The resulting increase was mainly influenced by the adjustments in energy sourcing of market participants causing them to be exposed in the market or enter into an emergency power supply agreements due to changes in contractual arrangements with their counterparties.

Spot exposures during weekdays averaged at 16% while it was 13.3% during weekends.

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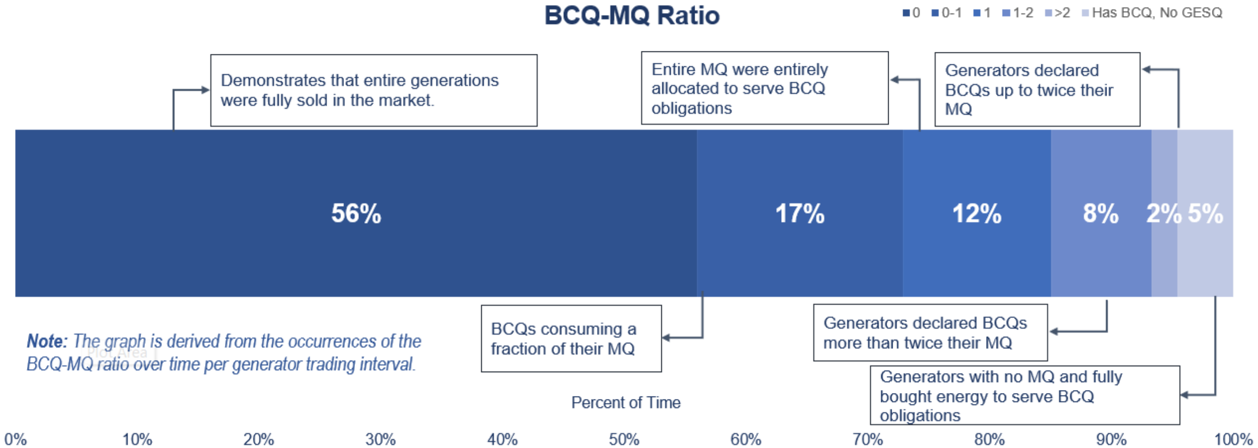
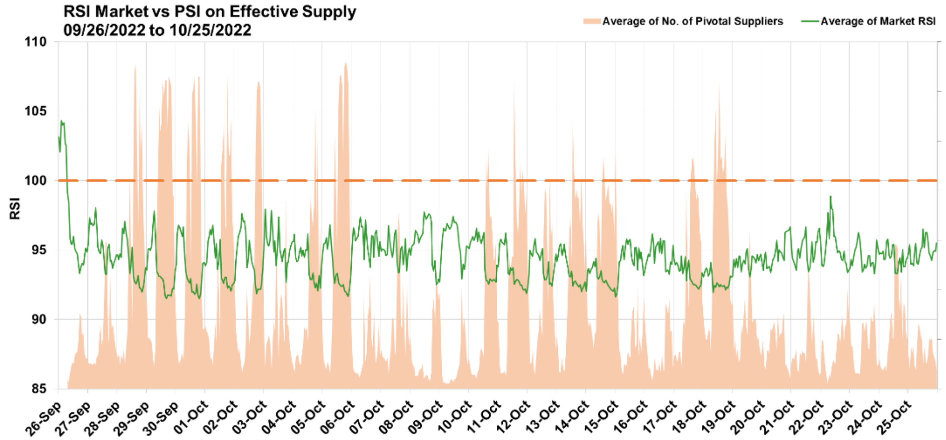
MARKET TRANSACTIONS

BCQ-MQ Ratio



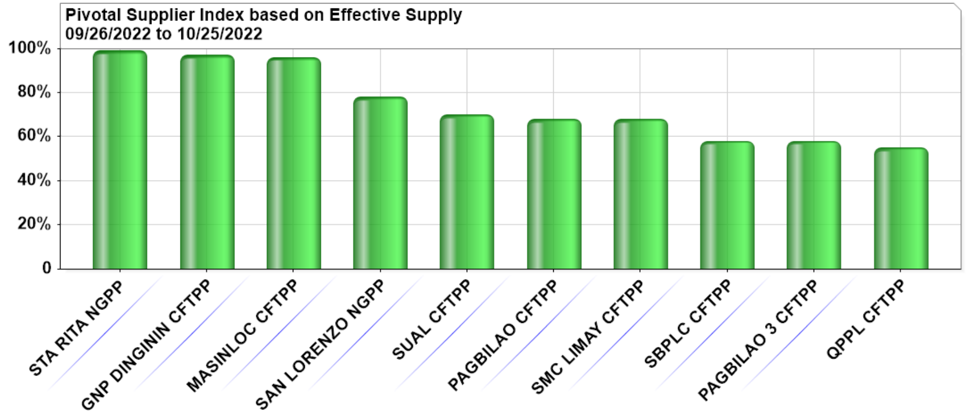
STRUCTURAL COMPETITION INDICES

MARKET RSI



- The market Residual Supply Index (RSI) was below the 100% mark for about 98.9% of the time this month compared to about 99.5% last month.
- During the October 2022 billing month, the market resulted in RSIs ranging from 90.1% to 105.1% and averaged at 94.5%. The average market prices for intervals with RSI below 100% was PHP9,456/MWh but would have been at an average price of PHP20,294/MWh if SPC was not imposed, while those with RSIs above 100 was PHP225/MWh and would have been PHP1,175/MWh without imposition of SPC.

PIVOTAL PLANTS



- A total of 158 power plants were pivotal during the period from 156 last month, with 70% or 111 plants coming from the Luzon region and 47 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.

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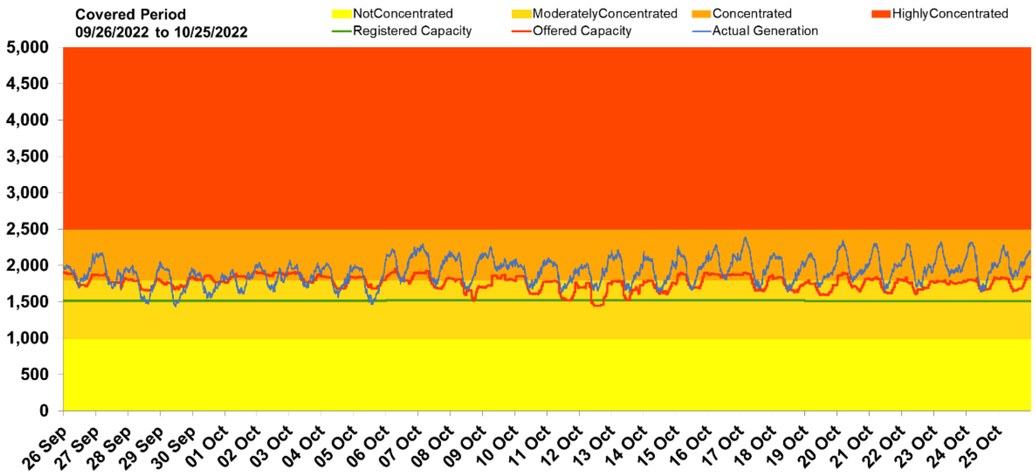
MARKET CONCENTRATION, ENERGY TRADING AMOUNT (ETA), AND SPOT EXPOSURE

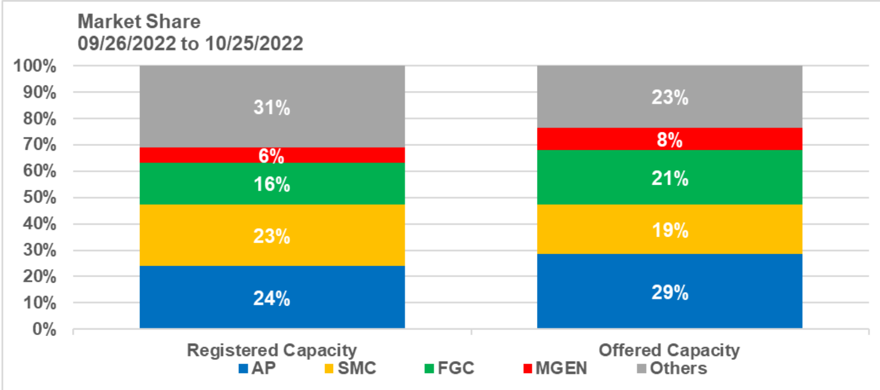
MARKET HHI



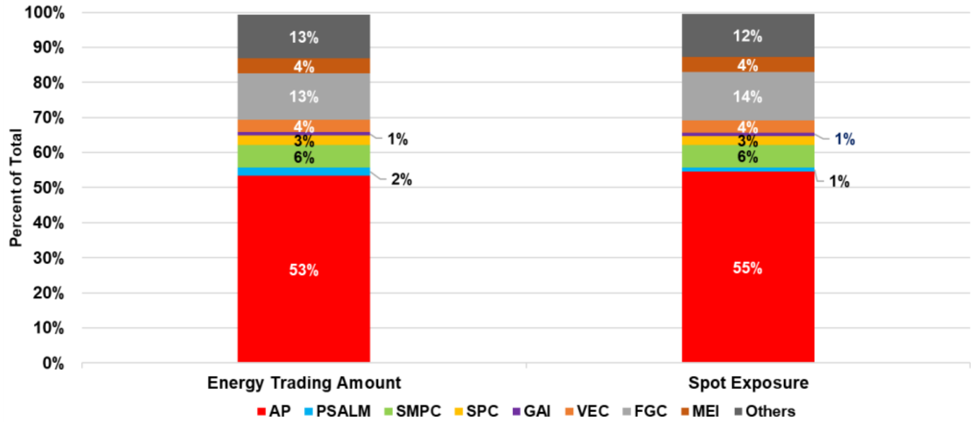
Herfindahl-Hirschman Index (HHI), by major participant grouping

- Based on Offered Capacity: **moderately concentrated market** for 60% of the time (5,186 intervals) this month from 49.8% of the time last month and **concentrated market** for 40% of the time or for 3,453 intervals
  - 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 Metered Quantities: **moderately concentrated market** for 26% of the time (2,269 intervals) and **concentrated market** for 74% of the time or for 6,371 intervals. 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: **moderately concentrated market** for the whole month of October 2022.

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 capacities in the WESM. The shares of the listed market's major participant remained similarly close to last month.



The top 3 participants with highest shares in terms ETA and spot exposure comprised about 70% of the total shares in both measures. This may also indicate high level of market concentration that affects market competition.

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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.

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	SLPGC 1	150	10/25/2022 14:37			Forced Outage	Emergency shutdown due to boiler tube leak.
HYD	Ambuklao 3	35	10/25/2022 12:01			Forced Outage	Declared unavailable due to low water level.
GEO	Bacman 1	60	10/25/2022 8:15			Planned Outage	Planned outage.
OIL	Limay 4	90	10/24/2022 0:01			Planned Outage	Minor overhauling of steam turbine.
GEO	Makban 8	20	10/22/2022 8:41			Maintenance Outage	Affected by the shutdown of Makban C-Makban D 230kV tie line.
COAL	SLTEC 1	122	10/20/2022 16:01			Forced Outage	Tripped due to high vibration of primary air fan B.
HYD	Angat M 1	50	10/16/2022 7:49	10/19/2022 15:22	3	Forced Outage	Water cooling system
COAL	GN Power 2	316	10/15/2022 0:17			Planned Outage	General maintenance outage.
OIL	Ingrid 6	28	10/14/2022 1:16			Planned Outage	Planned Outage
OIL	Ingrid 5	22	10/14/2022 1:16			Planned Outage	Planned Outage
OIL	Ingrid 4	28	10/14/2022 1:16			Planned Outage	Planned Outage
OIL	Ingrid 3	22	10/14/2022 1:16			Planned Outage	Planned Outage
OIL	Ingrid 2	22	10/14/2022 1:16			Planned Outage	Planned Outage
OIL	Ingrid 1	28	10/14/2022 1:16			Planned Outage	Planned Outage
GEO	Makban 2	63.2	10/12/2022 5:07			Planned Outage	Planned Outage.
HYD	Angat A 2	6	10/10/2022 15:10			Forced Outage	Tripped due to high temperature at thrust bearing
OIL	Limay 5	60	10/08/2022 0:00	10/11/2022 13:49	4	Planned Outage	Planned Outage until October 15 2022
COAL	Sual 1	647	10/07/2022 23:31			Planned Outage	Planned Outage until November 7 2022.
COAL	Calaca 2	300	10/03/2022 9:48	10/09/2022 13:43	6	Forced Outage	Tripped while on load stabilization. The unit is on testing and commissioning.
COAL	Calaca 1	240	10/01/2022 4:46			Forced Outage	Planned Outage Correction of burner and replacement of boiler tube
NATG	San Gabriel	420	09/30/2022 23:50	10/14/2022 7:50	13	Planned Outage	Planned Outage To perform minor inspection
NATG	Sta. Rita 4	264	09/28/2022 3:38	10/03/2022 0:06	5	Forced Outage	Tripped by Gas Turbine Protection.
COAL	SMC 3	150	09/28/2022 3:08			Forced Outage	Suspected tube leak.
COAL	GN Power 2	316	09/27/2022 18:32	10/02/2022 19:45	5	Forced Outage	Simultaneous tripping of Lamao-GN Power 230kV Line 1 & 2
COAL	GN Power 1	316	09/27/2022 18:32	10/01/2022 3:35	3	Forced Outage	Simultaneous tripping of Lamao-GN Power 230kV Line 1 & 2
OIL	TMO Unit 4	46.8	09/22/2022 22:12	09/30/2022 0:00	7	Planned Outage	Planned Outage
GEO	Tiwi 1	60	11/30/2021 18:32			Forced Outage	Steam supply diverted to Unit 2.
COAL	SLTEC 1	122	09/25/2022 3:21	10/03/2022 10:08	8	Forced Outage	Tripped due to high bearing temperature.
OIL	SLPGC 4	25	02/10/2022 18:07			Forced Outage	Emergency shutdown due to low bearing lube oil pressure.
OIL	SLPGC 3	25	01/22/2022 21:39			Forced Outage	Declared unavailable due to turbine lube oil sump metal chips detected
COAL	SLPGC 1	150	08/31/2022 23:54	09/29/2022 17:05	29	Planned Outage	Planned Outage until September 30 2022
NATG	San Lorenzo 2	265	08/04/2022 15:51			Forced Outage	Emergency shutdown due to trouble during fuel changeover from gas to oil.
OIL	MGTPP	85	09/29/2021 16:52			Forced Outage	Tripped from 14MW due to turbine bearing shaft vibration
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
GEO	Makban 6	55	04/11/2013 22:44			Deactivated Shutdown	Conducted gas compressor test
GEO	Makban 10	20	08/16/2022 17:21			Forced Outage	Triiped due to actuation of generator bearing vibration very high
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 2	668	09/18/2022 11:59	10/05/2022 21:10	17	Maintenance Outage	Inspection of contaminated turbine. ETD 10-5-2022 .
COAL	Calaca 2	300	09/01/2022 18:01	10/03/2022 8:56	32	Forced Outage	Emergency shutdown due to high generator vibration.
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							
BAT	Kabankalan Bat	20	07/11/2022 10:12			Maintenance Outage	Offline due to scheduled preventive maintenance of equipment.
BIOF	HPCO	2	10/10/2022 8:32	10/13/2022 18:07	3	Maintenance Outage	Offline due to weekly maintenance.
BIOF	South Negros	25	10/07/2022 17:16	10/09/2022 19:52	2	Forced Outage	Auto-tripped due to vibrating great overload.
BIOF	VMC	2.5	03/13/2022 9:38			Maintenance Outage	Offline due to weekly maintenance.
BIOF	South Negros	25	08/11/2022 0:06	09/26/2022 9:01	46	Forced Outage	Emergency offline due to poor fuel quality.
BIOF	SCBE	7.4	05/06/2022 6:45			Forced Outage	Offline due to internal problem
BIOF	San Carlos Bio	19.5	06/27/2022 0:28			Forced Outage	Emergency offline due to poor fuel quality.
COAL	Kepco Salcon 2	103	10/24/2022 7:32			Forced Outage	UNIT TRIPPED DUE TO POSSIBLE BOILER TUBE LEAK AT 3RD FLOOR FRONT WALL AREA
COAL	Kepco Salcon 1	103	10/15/2022 9:19	10/18/2022 15:49	3	Forced Outage	POSSIBLE TUBE LEAK
COAL	PEDC 2	83.7	10/15/2022 0:57	10/18/2022 16:18	4	Forced Outage	Affected by tripping of Bacolod-Kabankalan 138KV L1 L2
COAL	PALM 1	135	10/15/2022 0:56			Forced Outage	Affected by tripping of Bacolod-Kabankalan 138KV L1 L2
COAL	THVI 1	169	10/10/2022 0:10			Planned Outage	GOMP
COAL	THVI 2	169	09/29/2022 13:18	10/05/2022 2:08	6	Forced Outage	Furnace bed material leak
COAL	PEDC 3	150	09/23/2022 2:01	10/03/2022 4:38	10	Forced Outage	Auto-tripped due to high furnace pressure
COAL	CEDC 2	82	09/22/2022 0:49	10/11/2022 23:06	20	Planned Outage	CUT-OUT FROM THE SYSTEM FOR ANNUAL PMS
GEO	Malitbog 1	72	10/25/2022 0:14			Maintenance Outage	PMS
GEO	PGPP2 Unit 3	20	10/15/2022 0:57			Forced Outage	Auto tripped due to tripping of 138kV Kabankalan Line 1 & Line 2.
GEO	Mahanagdong A1	5	10/02/2022 12:34			Forced Outage	Tripped affected by the tripping of 350kV HVDC line.
GEO	PGPP2 Unit 1	20	09/29/2022 0:05	10/17/2022 17:20	19	Maintenance Outage	Offline to conduct maintenance activites
GEO	Upper Mahiao 2	32	08/13/2022 11:52			Forced Outage	Tripped.
GEO	PGPP2 Unit 2	20	09/18/2022 0:02	10/19/2022 11:25	31	Planned Outage	Offline to conduct maintenance activity.
GEO	PGPP1 Unit 2	37.5	09/19/2022 2:07	09/28/2022 15:20	10	Forced Outage	Auto-tripped AVR trip due to loss of excitation.
GEO	Malitbog BC	14	08/13/2022 11:52	10/02/2022 12:34	50	Forced Outage	Tripped.
GEO	Mahanagdong A2	5	08/13/2022 11:52	10/02/2022 12:34	50	Forced Outage	Tripped.
OIL	CENPRI 5	6.7	10/18/2022 14:06	10/21/2022 18:18	3	Forced Outage	Offline due to abnormal engine sound
OIL	TPVI 3	6.8	10/12/2022 0:11			Forced Outage	UNIT TRIPPED DUE TO ERRATIC MAIN BEARING NO. 7 SUDDEN HIGH TEMPERATURE INDICATION
OIL	Bohol 1	4	10/05/2022 11:29	10/07/2022 16:06	2	Forced Outage	Auto-tripped due to Ground Overcurrent
OIL	Bohol 3	4.2	09/23/2022 15:09	09/27/2022 9:22	4	Forced Outage	Emergency cut out due to cut off bolt at FIP No. 12.
SOLR	San Carlos 2	19.8	07/03/2022 18:20			Maintenance Outage	Offline to conduct maintenance activties
SOLR	San Carlos 1	19.8	07/03/2022 22:17			Forced Outage	Isolated to facilitate load shift of 69kV Escalante-San Carlos Line section
WIND	SLWind	54	07/05/2022 20:33			Forced Outage	Auto tripped due to line fault.

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