

# **Market Surveillance Committee Monthly Market Assessment Report**

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**26 October to 25 November 2022**

**March 2023**

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

# MONTHLY MARKET ASSESSMENT REPORT

(26 October – 25 November 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 – November 2022

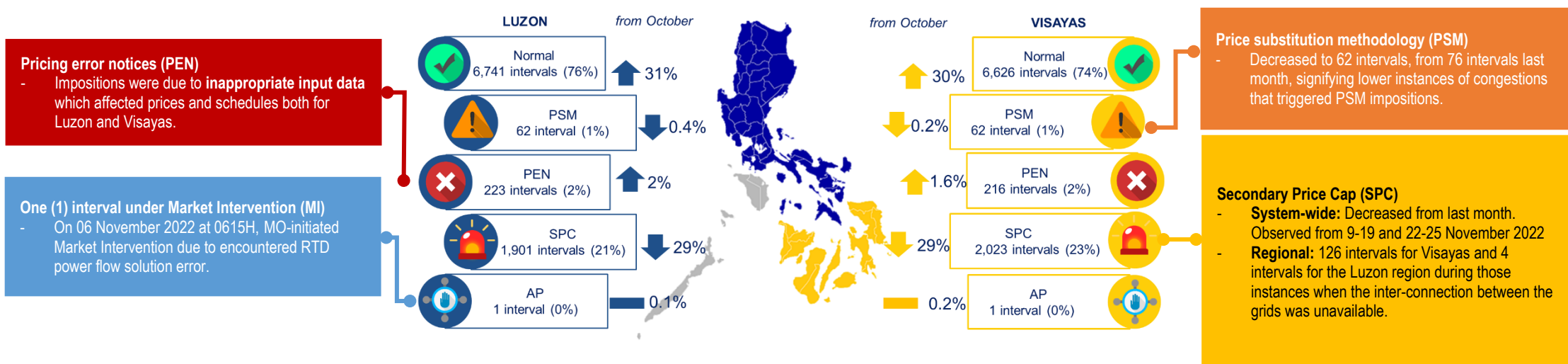
# MONTHLY MARKET ASSESSMENT REPORT

(26 October – 25 November 2022)

## ASSESSMENT OF THE MARKET NOTABLE HIGHLIGHTS

- Blue Alert Notice was declared on 28 October 2022 at 1100H.**
  - SO declared blue alert notice in anticipation of the landfall of Typhoon Paeng.
- Two (2) weather disturbances were noted during the billing period.
  - Typhoon Queenie:** 31 October 2022 at 1100H and was eventually lifted on 01 November 2022, 1700H.
  - Typhoon Paeng:** Largely affected the system and the market on 26 October 2022 causing some **Luzon Transmission Lines to be unavailable**.
- Monthly Average Price declined by 7.5%**
  - Due to relatively cooler temperature, demand level declined, which offset the decrease in level of effective supply brought about by high level of capacities on outage.
  - Lesser imposition of secondary price cap was noted during the month.
- 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 follow:
  - Maasin-Ubay line 1 was congested for 4,778 intervals or equivalent to 54% of the time brought about by the frequent maximization of the line's capacity limit.

## SUMMARY OF PRICING CONDITIONS

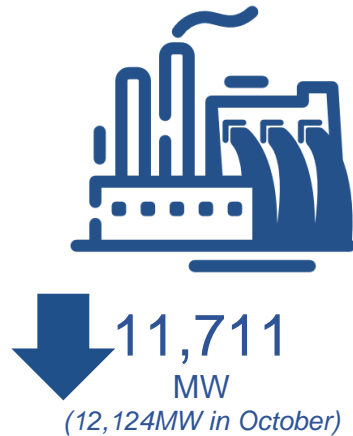


# MONTHLY MARKET ASSESSMENT REPORT

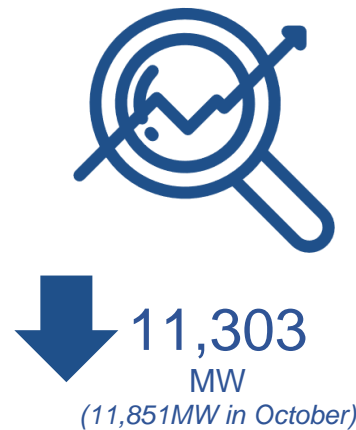
(26 October – 25 November 2022)

## MARKET OUTCOME

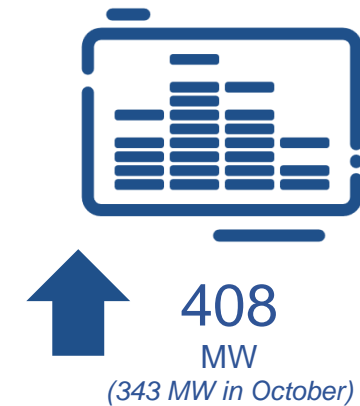
### EFFECTIVE SUPPLY



### DEMAND PLUS RESERVE SCHEDULE



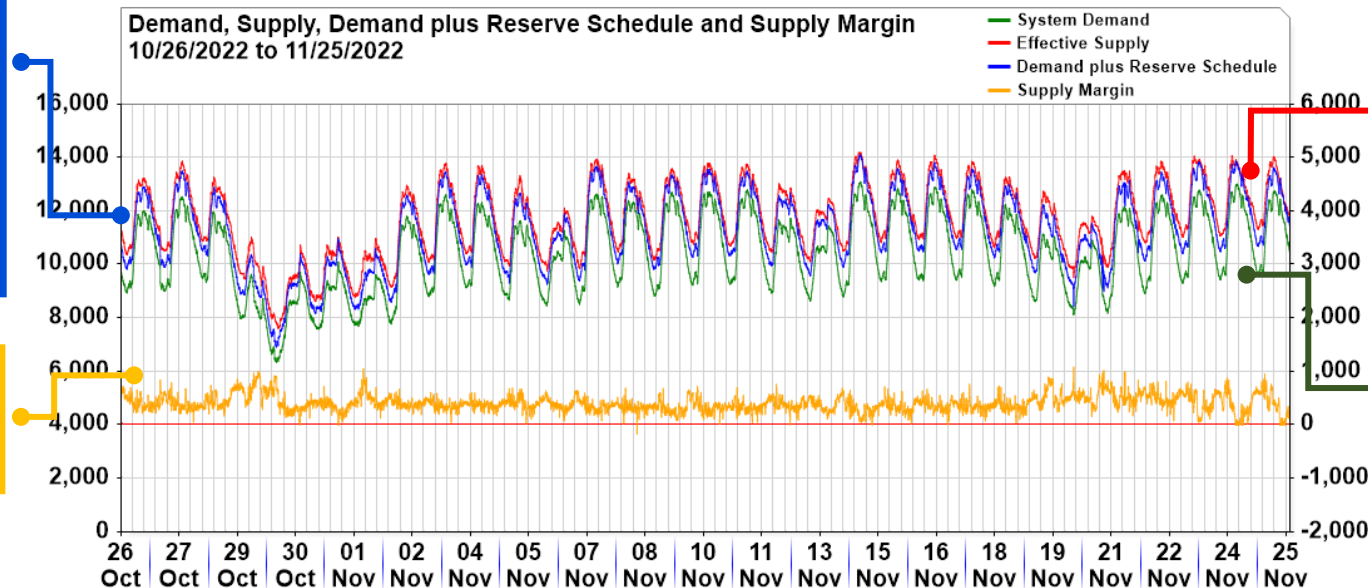
### SUPPLY MARGIN



#### Demand plus Reserve Schedules

- Decreased by an average of 4.6% caused mainly by the cooler temperature during the rainy season which influenced the electricity consumption for the month
- Averaged at 11,303 MW as compared to last month's 11,851 MW

Supply Margin improved by 18.4%, considering the dynamics between supply and demand.



#### Effective Supply

- Decreased by an average of 4.0% or equivalent to an average of 11,171MW from 12,194MW last month.
- Among the noted reasons for the depleted supply were 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 decreased by an average of 4.7% or was noted to be at 10,462 MW from 10,984 MW last month during the rainy season.

# MONTHLY MARKET ASSESSMENT REPORT

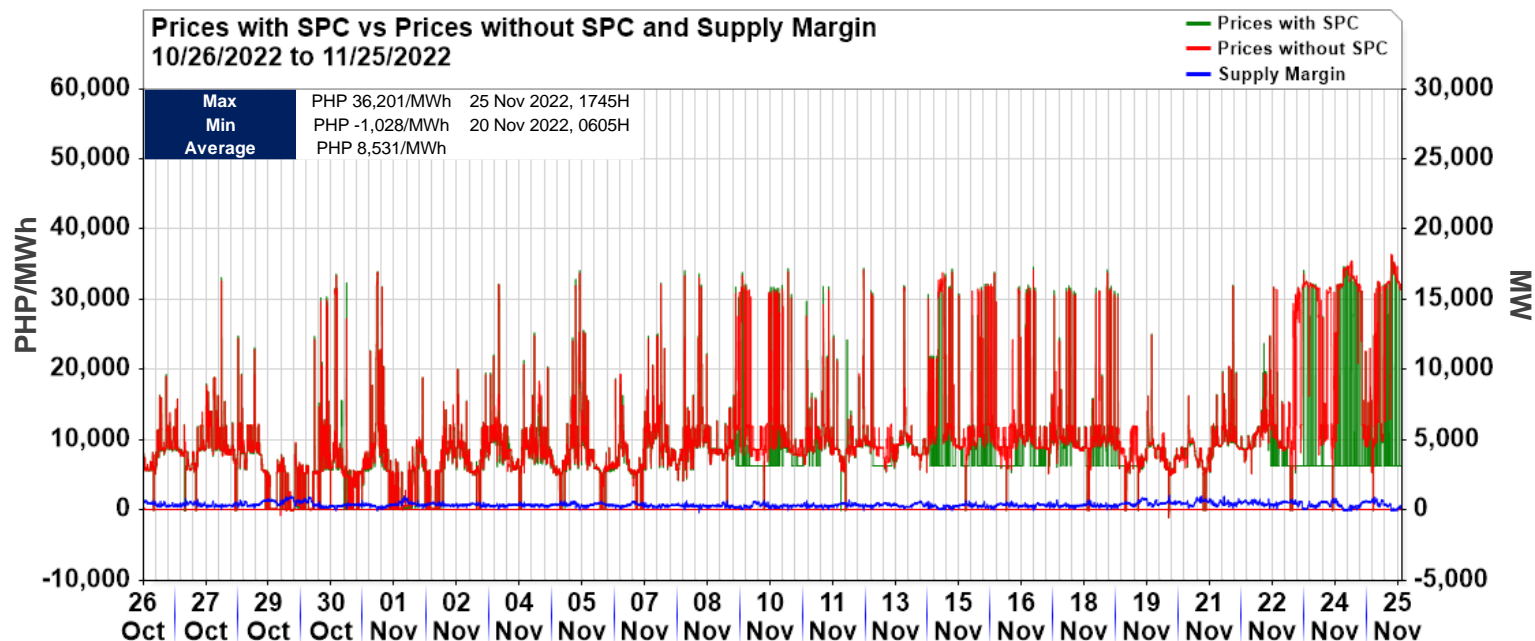
(26 October – 25 November 2022)

Zone	Average LWAP (PHP/MWh)
NLUZON	8,341.25
MMANILA	8,549.33
SLUZON	8,466.66
LEYTE	8,657.31
CEBU	8,596.88
NEGROS	8,606.19
BOHOL	14,706.42
PANAY	8,680.42

## MARKET OUTCOME

Given the dynamics of supply and demand, the level of market prices decreased, on average, by 7.5% or was noted at an average of PHP8,531/MWh from PHP9,222/MWh last month. The estimated monthly average price would have been at PHP10,783/MWh if SPC was not imposed. Year-on-year comparison posted a 72.6% increase from an average price of PHP4,943/MWh last year noting that outages this year were significantly higher than in November 2021, coupled with the expected economic growth, resulting in higher consumption this year.

Congestion in the 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 Bohol grid causing disparity, as depicted in the table of prices.



**PRICE**



**8,531**  
PHP/MWh  
(PHP9,222/MWh in October)


# MONTHLY MARKET ASSESSMENT REPORT

(26 October – 25 November 2022)

## MARKET OUTCOME

### RAMP LIMITED CAPACITY

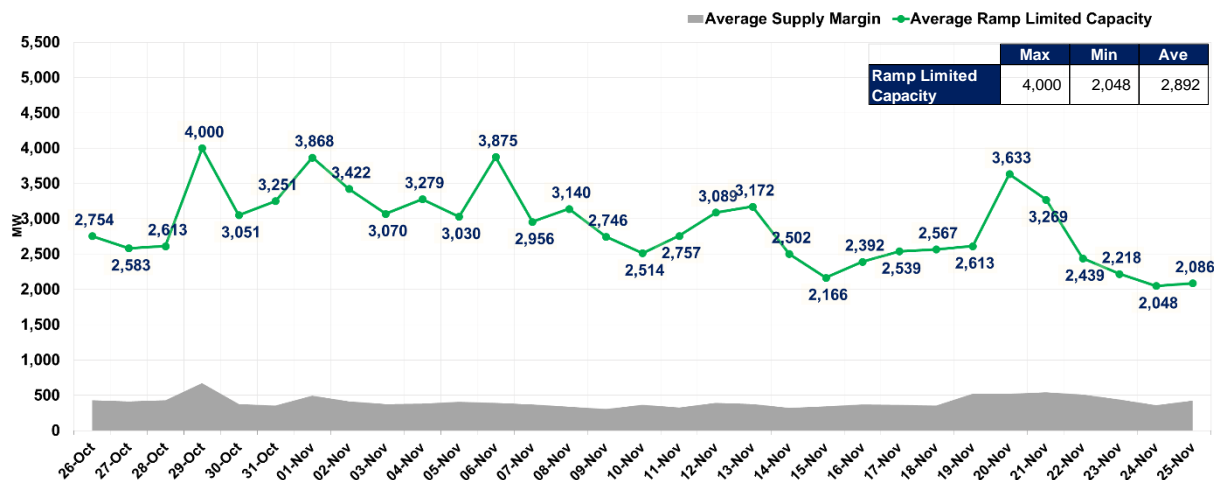
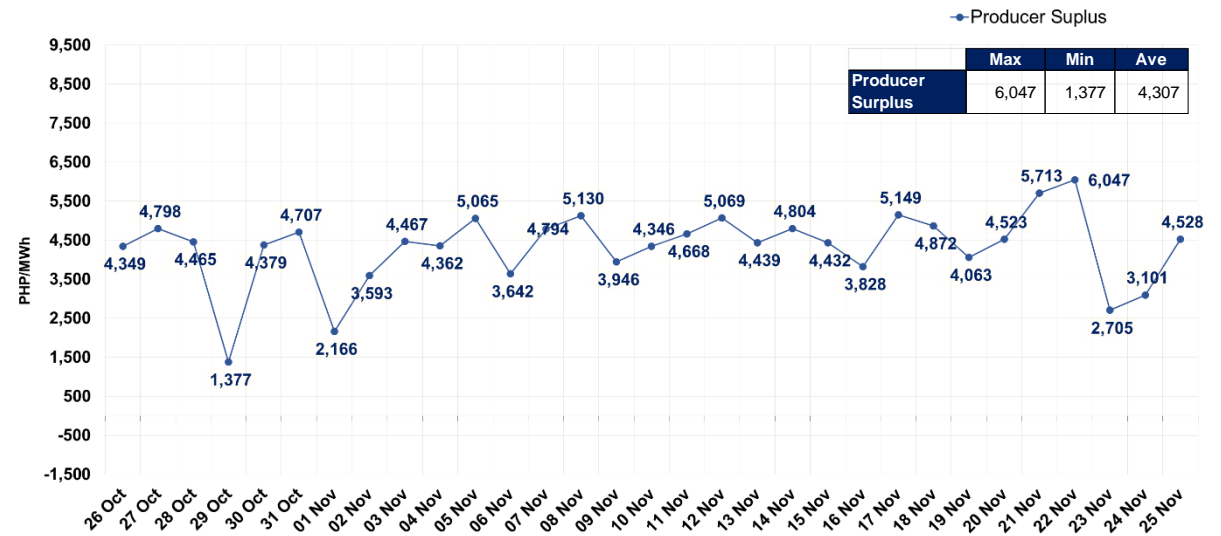


 **2,919**  
MW  
(2,152MW in October)

### PRODUCER SURPLUS



 **4,307**  
PHP/MWh  
(PHP3,612/MWh in October)



**Producer/generator surplus**, averaged at PHP4,307/MWh this month from PHP3,612/MWh last month. This is an average of 19% increase as compared to October 2022 as affected by the changes in offered prices and resulting prices in the market. Offers from Oil-based power plants had the most significant changes in its offer pattern which contributed to the aforementioned changes.

For the month of November, **ramp-limited capacities** increased by an average of 36% from an average of 2,152 MW last month to 2,919 MW this month which may be affected by the behavior in submitting ramp rates that are considered in the optimization of the market.

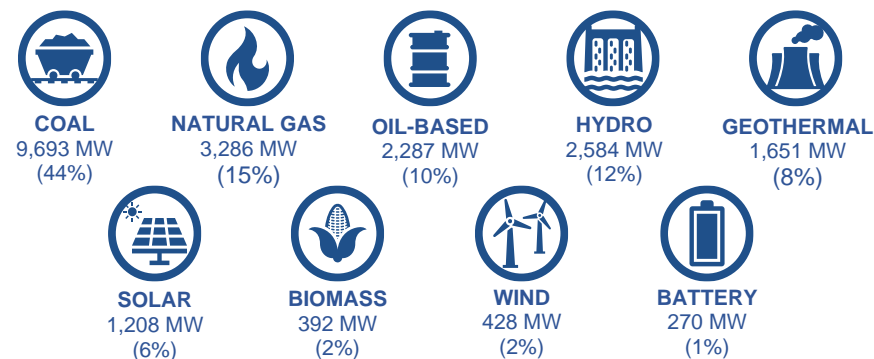
# MONTHLY MARKET ASSESSMENT REPORT

(26 October – 25 November 2022)

## CAPACITY PROFILE

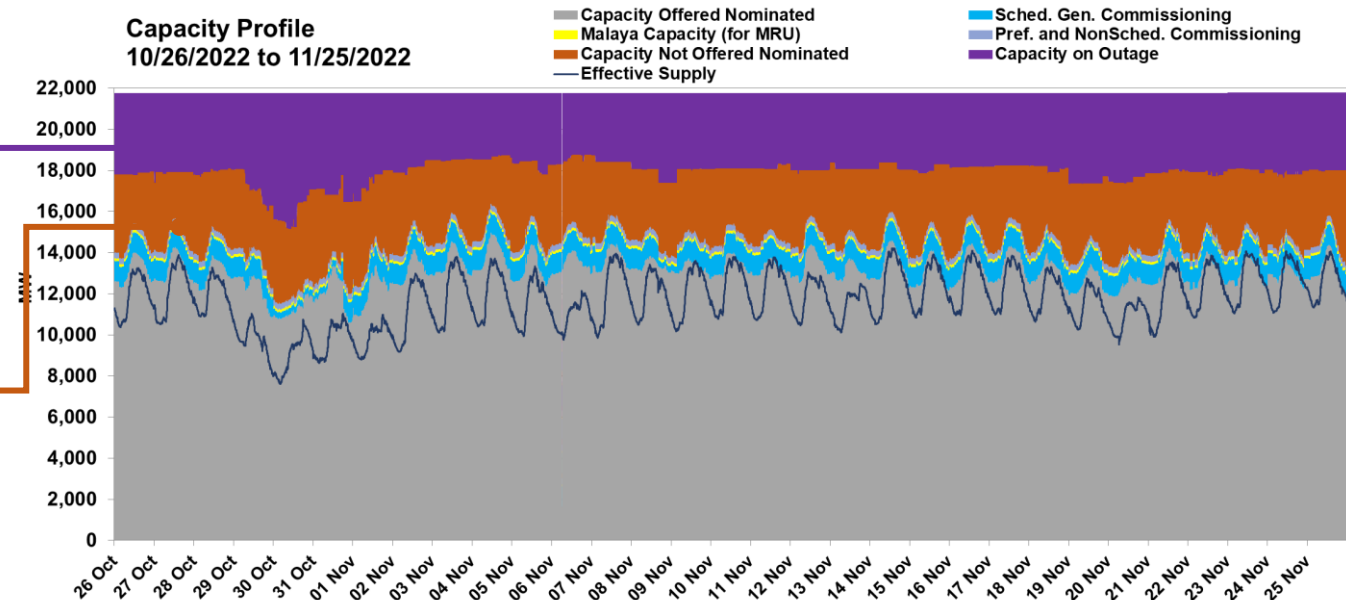
The WESM's registered capacity recorded changes in November 2022 from 21,750.8 MW to 21,798 MW due to the net registration changes from the following plants:

Status	Market Participant Name	Market Trading Node	Plant Type	Pmax (MW)		Change (MW)
				Old	New	
Increased	SN Aboitiz Power - Benguet, Inc.	01AMBUK_U01	Hydro	35	37.5	2.5
		01AMBUK_U02	Hydro	35	37.5	2.5
		01AMBUK_U03	Hydro	35	37.5	2.5
Decreased	Isabela Biomass Energy Corporation	01IBEC_G01	Biomass	18.3	18	(0.3)
New	Universal Power Solutions, Inc.	01MAGAPIT_BAT	Battery	0	40	40
TOTAL						47.2



**Capacity on Outage (18% of Registered Capacity)** decreased by 1.1%, which was mostly due to the decrease in outages from Coal and Geothermal power plants under forced and maintenance outage categories.

**Capacity NOT Offered/Nominated (16% of Registered Capacity)** decreased by an average of 0.6% or from an average of 3,543 MW last month to 3,521 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)** decreased from 1,312 MW last month to 1,227 MW this month due to outages 30-31 October and 08-09 November 2022

**Capacities Offered/Nominated (60% of Registered Capacity)** increased by an average of 0.5% or was noted at 13,026 MW as compared to last month's 12,960 MW.

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

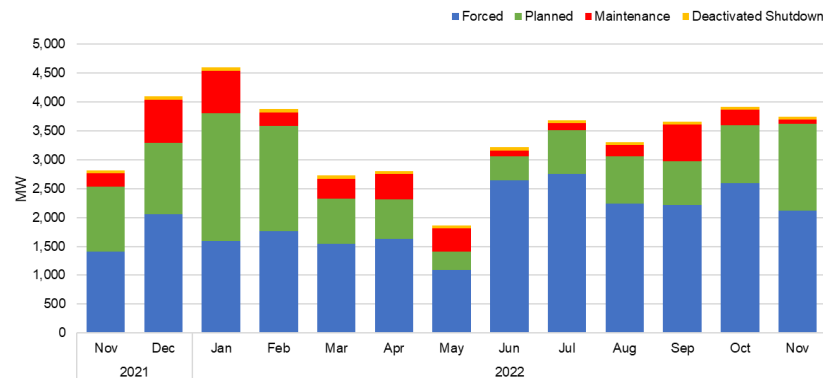


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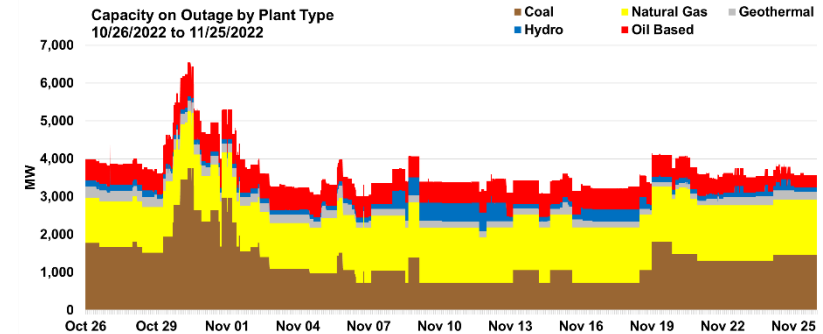
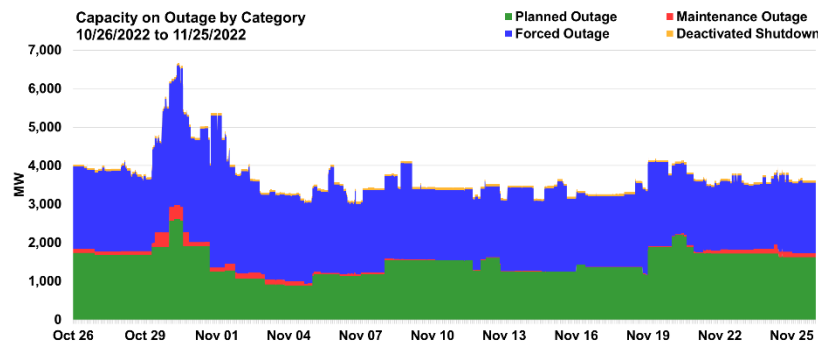
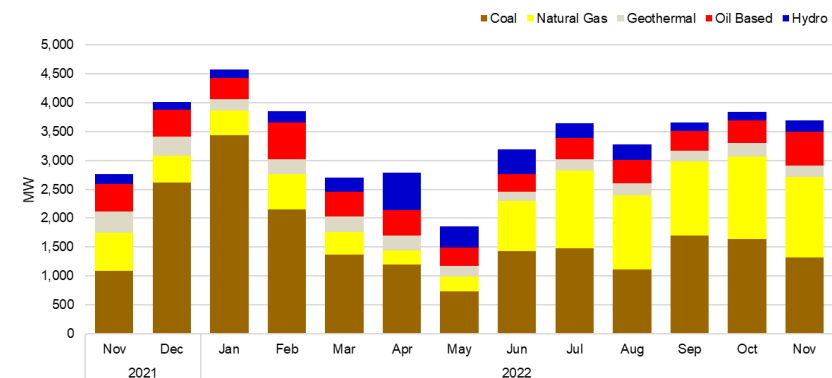
(26 October – 25 November 2022)

## CAPACITY PROFILE

CAPACITY ON OUTAGE BY CATEGORY



CAPACITY ON OUTAGE BY PLANT TYPE



The November 2022 billing month opened with relatively high level of capacities on outage at around 4,000MW. Outage levels continued to increase on 29 to 31 October 2022 at around 6,600 MW due to the effects of Typhoon Paeng which caused weather disturbance to the grid and subsequently led to force outages of large Coal and Natural gas power plants.

The recorded average capacities on outage were 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 4,000 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 October – 25 November 2022)

## MARKET TRANSACTIONS

### BILATERAL CONTRACT QUANTITIES



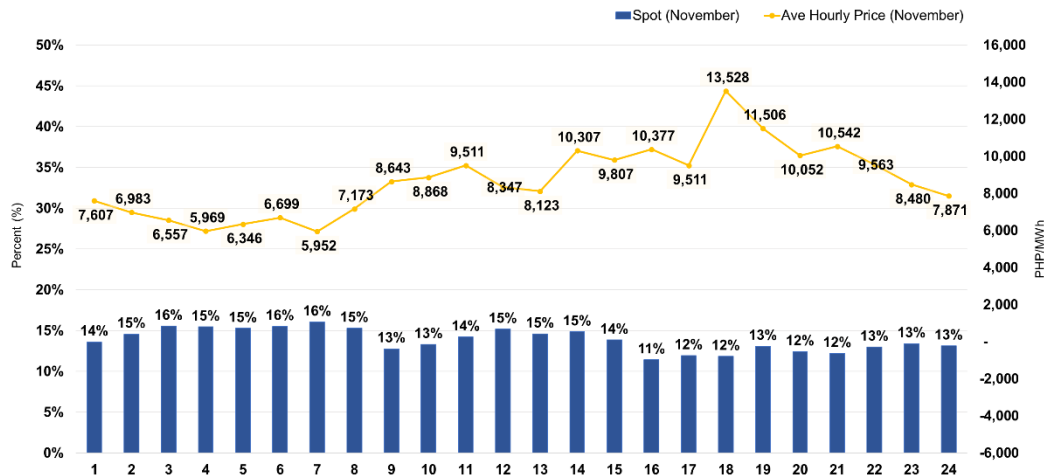
**86.2%**  
(84.7% in October)

### SPOT EXPOSURES



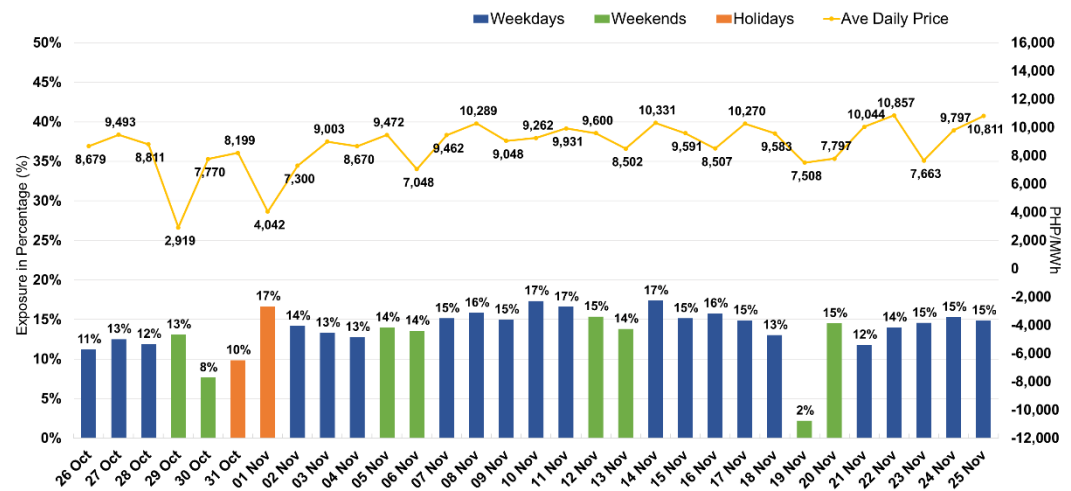
**13.8%**  
(15.3% in October)

### HOURLY SPOT



Total spot quantities of generator participants in November posted an average of 14.4% during off-peak hours and 13.3% during peak hours.

### DAILY SPOT

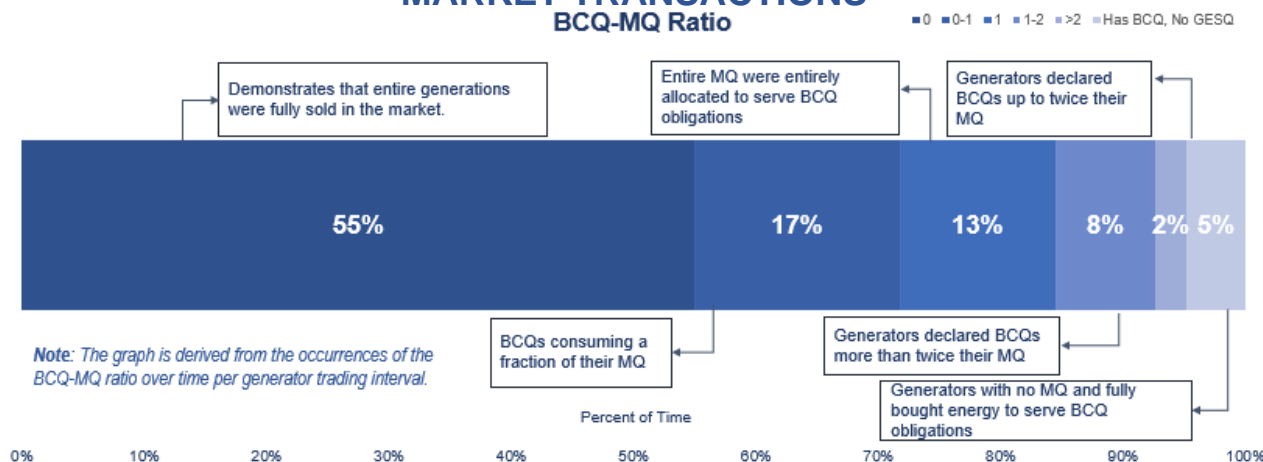


Spot exposures during weekdays averaged at 14.4% while it was 11.9% during the weekends. The dip in the spot exposure on 19 November 2023, resulted from the sudden increase in the BCQ declarations noted from the available data.

# MONTHLY MARKET ASSESSMENT REPORT

(26 October – 25 November 2022)

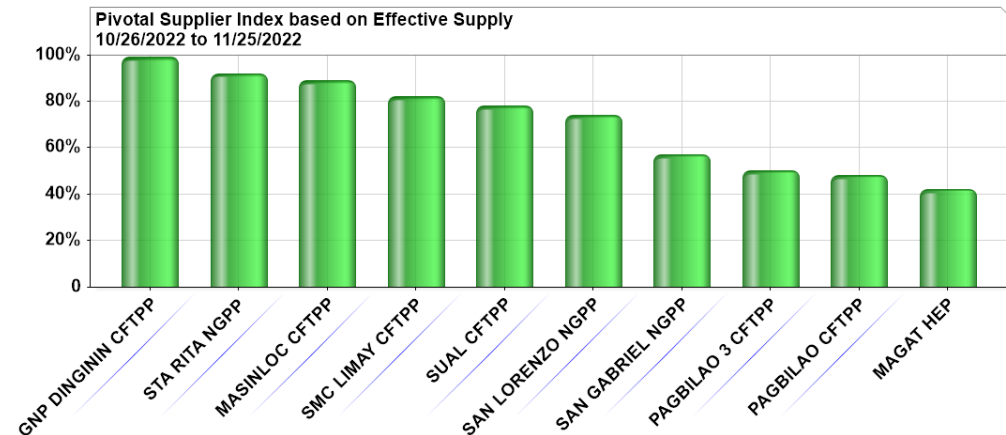
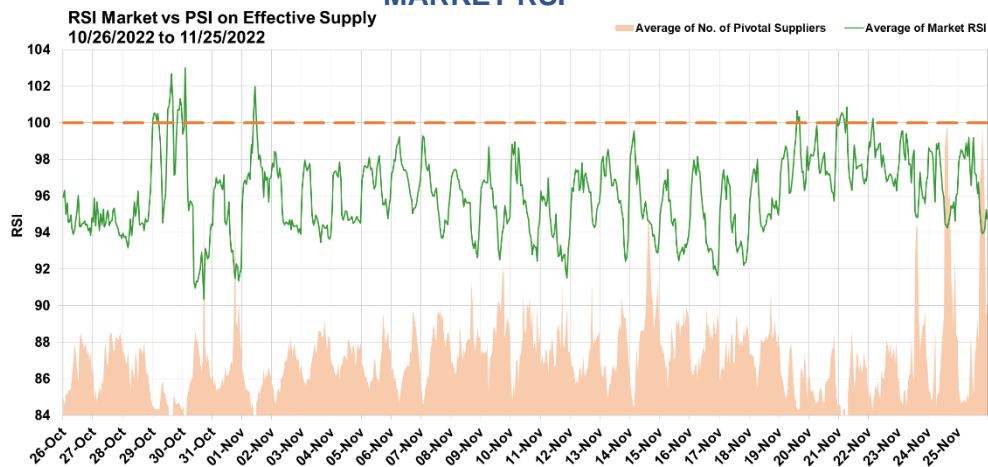
## MARKET TRANSACTIONS BCQ-MQ Ratio



## MARKET RSI

## STRUCTURAL COMPETITION INDICES

## PIVOTAL PLANTS



- The market Residual Supply Index (RSI) was below the 100% mark for about 96.2% of the time this month compared to about 98.9% last month.
- During the November 2022 billing month, the market resulted in RSIs ranging from 90.4% to 103% and averaged at 96%. The average market prices for intervals with RSI below 100% was PHP9,005/MWh but would have been at an average price of PHP11,591/MWh if SPC was not imposed, while those with RSIs above 100 had recorded average price of PHP3,379/MWh which would have been PHP3,505/MWh without the imposition of SPC.

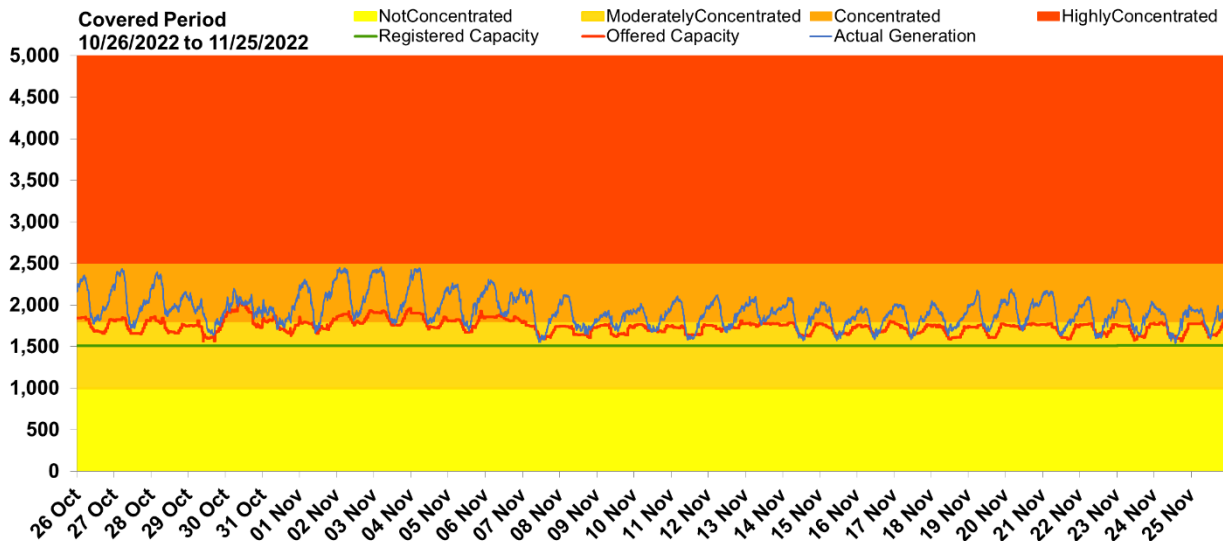
- A total of 157 power plants were pivotal during the period from 158 last month, with 70% or 110 plants coming from the Luzon region and 47 plants from the Visayas region.
- The noted decrease in effective supply, due to technical limitations of the plants, among others, the effects of ramp limited capacities, translated to a low RSI and high number of pivotal suppliers per dispatch interval.

# MONTHLY MARKET ASSESSMENT REPORT

(26 October – 25 November 2022)

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

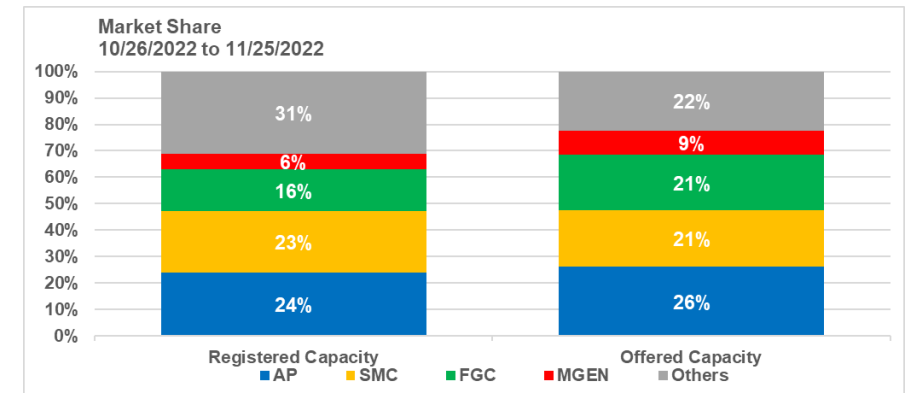
### MARKET HHI



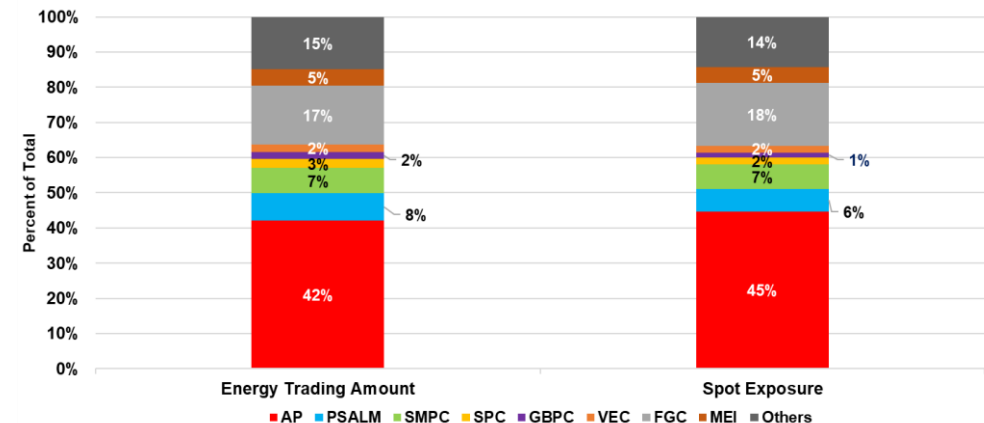
### Herfindahl-Hirschman Index (HHI), by major participant grouping

- Based on Offered Capacity: **moderately concentrated market** for 58% of the time (5,186 intervals) this month from 60% of the time last month, and **concentrated market** for 42% of the time or for 3,741 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: **moderately concentrated market** for 25% of the time (2,192 intervals) and **concentrated market** for 75% of the time or for 6,736 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.
- Based on Registered Capacity: **moderately concentrated market** for the whole month of November 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 major participant remained similarly close to last month.



The top 3 participants with highest shares in terms of ETA and spot exposure comprised about 67% of the total shares in both measures. This may also indicate high level of market concentration that affects market competition.

# MONTHLY MARKET ASSESSMENT REPORT

(26 October – 25 November 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 October – 25 November 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							
COAL	SBPL	455	11/25/2022 11:52			Planned Outage	Planned Outage.
GEO	Makban 1	57	11/21/2022 7:16			Maintenance Outage	On Maintenance Outage until November 30 2022.
COAL	Sual 2	647	11/18/2022 23:39			Planned Outage	Planned Outage
HYD	Kalayaan 3	180	11/15/2022 0:00	11/18/2022 18:30	4	Planned Outage	Maintenance Outage
HYD	Caliraya 1	14	11/14/2022 16:45			Forced Outage	Unplanned shutdown due to high vibration.
OIL	Limay 7	60	11/12/2022 5:31	11/16/2022 9:33	4	Planned Outage	Planned Outage Hot gas path inspection.
NATG	Sta. Rita 4	264	11/12/2022 0:05			Planned Outage	Planned Outage.
HYD	Kalayaan 2	180	11/08/2022 0:00	11/12/2022 20:16	5	Planned Outage	Planned outage as per GOP until November 12 2022 at 2400H.
HYD	Kalayaan 1	180	11/08/2022 0:00	11/12/2022 19:45	5	Planned Outage	Planned outage as per GOP until November 12 2022 at 2400H.
NATG	Sta. Rita 1	257.3	11/04/2022 23:51	11/11/2022 16:22	7	Planned Outage	Planned Outag ETDat Nov. 9 2022 2350H.
OIL	Ingrid 6	28	11/03/2022 0:01	11/21/2022 10:24	18	Forced Outage	Outage extended until November 24 2022 due to delay on the release of equipment at the BOC.
OIL	Ingrid 5	22	11/03/2022 0:01	11/21/2022 10:24	18	Forced Outage	
OIL	Ingrid 4	28	11/03/2022 0:01	11/21/2022 10:24	18	Forced Outage	
OIL	Ingrid 3	22	11/03/2022 0:01	11/21/2022 10:24	18	Forced Outage	
OIL	Ingrid 2	22	11/03/2022 0:01	11/21/2022 10:24	18	Forced Outage	
OIL	Ingrid 1	28	11/03/2022 0:01	11/21/2022 10:24	18	Forced Outage	
COAL	Pagbilao 3	420	10/29/2022 6:47	11/01/2022 12:53	3	Forced Outage	Due to IDF-B high vibration.
OIL	BPCC 9	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 8	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 7	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 6	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 5	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 4	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 3	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 21	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 20	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 2	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 19	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 18	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 17	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 16	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 15	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 14	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 13	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 12	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 11	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 10	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
OIL	BPCC 1	10	10/29/2022 6:48	11/01/2022 18:01	3	Planned Outage	Planned Outage.
GEO	Makban 9	20	10/27/2022 0:04	10/31/2022 1:56	4	Forced Outage	AVR trouble
GEO	Makban 10	20	10/27/2022 0:04	10/31/2022 1:56	4	Forced Outage	AVR trouble
GEO	Tiwi 1	60	11/30/2021 18:32			Forced Outage	Steam supply diverted to Unit 2.
COAL	Sual 1	647	10/07/2022 23:31	10/30/2022 14:16	23	Planned Outage	Planned Outage until November 7 2022.
COAL	SMC 3	150	09/28/2022 3:08	10/28/2022 9:54	30	Forced Outage	Suspected tube leak.
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.
COAL	SLPGC 1	150	10/25/2022 14:37	11/06/2022 10:58	12	Forced Outage	Emergency shutdown due to boiler tube leak.
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
GEO	Makban 8	20	10/22/2022 8:41			Maintenance Outage	Affected by the shutdown of Makban C-Makban D 230kV tie line.
GEO	Makban 6	55	04/11/2013 22:44			Deactivated Shutdown	Conducted Gas compressor test.
OIL	Limay 4	87	10/24/2022 0:01	11/24/2022 14:25	32	Planned Outage	Minor overhauling of steam turbine.
OIL	Ingrid 6	28	10/14/2022 1:16	11/03/2022 0:00	20	Planned Outage	Planned Outage until November 3 2022.
OIL	Ingrid 5	22	10/14/2022 1:16	11/03/2022 0:00	20	Planned Outage	Planned Outage until November 3 2022.
OIL	Ingrid 4	28	10/14/2022 1:16	11/03/2022 0:00	20	Planned Outage	Planned Outage until November 3 2022.
OIL	Ingrid 3	22	10/14/2022 1:16	11/03/2022 0:00	20	Planned Outage	Planned Outage until November 3 2022.
OIL	Ingrid 2	22	10/14/2022 1:16	11/03/2022 0:00	20	Planned Outage	Planned Outage until November 3 2022.
OIL	Ingrid 1	28	10/14/2022 1:16	11/03/2022 0:00	20	Planned Outage	Planned Outage until November 3 2022.
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			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	GN Power 2	316	10/15/2022 0:17			Planned Outage	General maintenance outage.
HYD	Caliraya 2	14	10/03/2022 0:00	11/21/2022 20:00	50	Planned Outage	Planned shutdown to facilitate major overhauling.
COAL	Calaca 1	240	10/01/2022 4:46			Planned Outage	Planned Outage Correction of burner and replacement of boiler tube
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 M 2	50	10/10/2022 15:10	10/28/2022 20:40	18	Forced Outage	Tripped due to high temperature at thrust bearing
HYD	Angat A 1	6	08/22/2022 8:01			Planned Outage	Planned Outage until April 21 2023
Visayas							
BIOF	South Negros	25	11/25/2022 8:18			Forced Outage	Offline due to main steam temp. very low
COAL	PEDC 3	150	11/24/2022 3:08			Forced Outage	Possible tube leak
GEO	Upper Mahiao 2	32	11/23/2022 9:50			Maintenance Outage	Emergency shutdown due to problem in control valve
GEO	Leyte 3	40.2	11/22/2022 0:31	11/25/2022 0:47	3	Maintenance Outage	MAINTENANCE DERATING
COAL	Kepeco Salcon 1	103	11/19/2022 0:00			Planned Outage	Manually Shutdown for APMS-GOMP
OIL	East Asia 3	11.5	11/18/2022 19:01	11/21/2022 19:00	3	Maintenance Outage	Maintenance Outage
OIL	TPVI 5	6.8	11/14/2022 18:44			Forced Outage	UNIT TRIPPED
OIL	East Asia 3	11.5	11/11/2022 19:01	11/14/2022 19:00	3	Maintenance Outage	Maintenance Outage
GEO	Leyte 2	39.3	11/05/2022 0:53	11/19/2022 21:25	15	Planned Outage	Annual PMS ETC Nov. 14 2022
OIL	PB101 Unit 1	6	11/05/2022 0:01	11/26/2022 0:00	21	Maintenance Outage	Extended maintenance outage
OIL	East Asia 3	11.5	11/04/2022 19:01	11/08/2022 19:00	4	Maintenance Outage	Maintenance Outage

# MONTHLY MARKET ASSESSMENT REPORT

(26 October – 25 November 2022)

## Annex A. List of Major Plant Outages

Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Days)	Outage Type	Remarks
<b>Visayas</b>							
BIOF	San Carlos Bio	20	11/04/2022 16:31			Forced Outage	Isolate from the grid due to emergency shutdown of 69KV Cadiz-San Carlos Sub TL ( CO).
COAL	Kepco Salcon 1	103	11/01/2022 23:57	11/06/2022 9:36	4	Forced Outage	Unit manually shutdown due to possible tube leak
OIL	TPVI 6	6.8	11/01/2022 8:00	11/05/2022 8:00	4	Maintenance Outage	Maintenance Outage
OIL	TPVI 4	6.8	11/01/2022 8:00	11/05/2022 8:00	4	Maintenance Outage	Maintenance Outage
OIL	TPVI 2	6.7	11/01/2022 8:00	11/05/2022 8:00	4	Maintenance Outage	Maintenance Outage
OIL	TPVI 1	6.7	11/01/2022 8:00	11/05/2022 8:00	4	Maintenance Outage	Maintenance Outage
OIL	PB101 Unit 2	6	10/28/2022 0:01	11/02/2022 21:00	6	Planned Outage	Force outage at 2154H Nov. 2 & resumption of operation Nov 4 @ 1627H due to excessive Fuel leak at fuel injector of Cyl. 6L.
OIL	TPVI 5	6.8	10/26/2022 10:46	11/14/2022 10:37	19	Forced Outage	Unit cut-out due to fuel leak at cylinder B2 injection pump priming bolt
BIOF	VMC	2.5	03/13/2022 9:38			Maintenance Outage	Offline due to weekly maintenance.
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
COAL	THVI 1	169	10/10/2022 0:10	11/20/2022 21:55	42	Planned Outage	UNIT 1 MANUALLY SHUTDOWN FOR APMS FROM OCT 10 TO NOV 03 2022
BIOF	South Negros	25	10/11/2022 12:16	11/21/2022 9:00	41	Forced Outage	Emergency offline due to poor fuel(bagasse) quality.
BIOF	SCBE	7.4	05/06/2022 6:45	11/03/2022 10:53	181	Forced Outage	Offline due to internal problem
BIOF	San Carlos Bio	20	06/27/2022 0:28	11/01/2022 12:43	128	Forced Outage	Emergency offline due to poor fuel quality.
GEO	PGPP2 Unit 3	20	10/15/2022 0:57	11/06/2022 7:00	22	Forced Outage	Auto tripped due to tripping of 138kV Kabankalan Line 1 & Line 2.
GEO	Malitbog 1	72	10/25/2022 0:14	11/04/2022 15:45	11	Maintenance Outage	PMS
GEO	Mahanagdong A	5	10/02/2022 12:34	11/14/2022 3:46	43	Forced Outage	Tripped affected by the tripping of 350kV HVDC line.

### 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