Market Surveillance Committee
Monthly Market Assessment Report

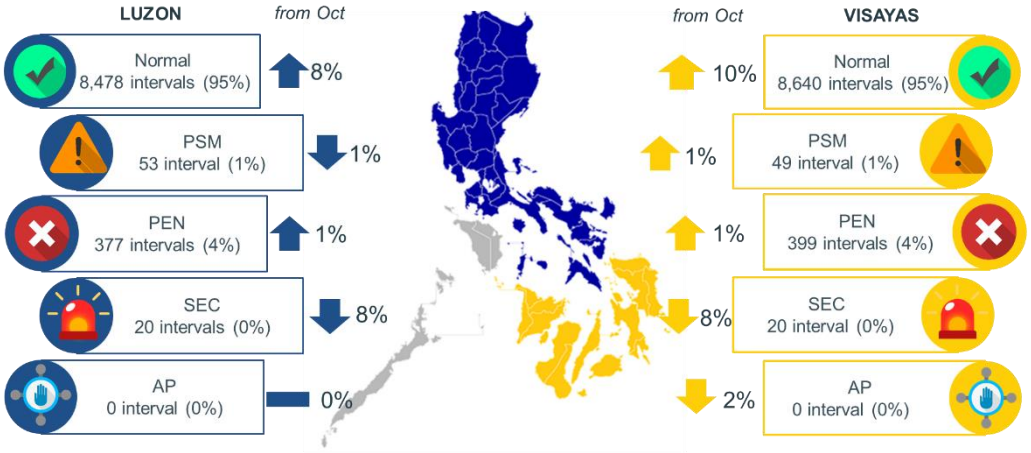
26 October to 25 November 2021

AUGUST 2022

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

ASSESSMENT OF THE MARKET

SUMMARY OF PRICING CONDITIONS



- **Price Substitution Methodology (PSM) was imposed on 7 intervals due to network congestion constraints.** The latest change in the Price Determination Methodology (PDM) now excludes radial lines in the PSM criteria upon commercial operations of the Enhanced WESM Design and Operations (EWDO).
- Intervals with **pricing error notices** were mainly due to **inappropriate input data** which affected prices and schedules for 376 intervals of the system.
- The cumulative 3-day (8,640 intervals) average computation of generator-weighted average prices (GWAP) breached the PHP9,000/MWh threshold and resulted to the imposition of **secondary price cap** to **20 intervals** from 725 intervals last month, in both Luzon and Visayas. The decrease in impositions was brought about by **sufficient system supply** that led to much lower prices in the market thereby decreasing the chances of triggering the cap's threshold.
- No market intervention (MI) was noted for November 2021 billing.

NOTABLE HIGHLIGHTS

1. SPEX Malampaya resumed its operations in November 2021 allowing natural gas plants to operate and contribute to the improvement in the supply margin, and subsequent low market prices.
2. System Demand was observed to have increased by an average of 1.2%
   - Attributable to more economic activities due to the entry of the festive months coupled with the government easing the quarantine restrictions in more areas of the country from alert level 3, further downgraded to alert level 2.
3. The effective supply increased by 4.8 percent mainly caused by the decline in outage levels brought about by the resumption in the operation of SPEX Malampaya.
4. The intervals imposed with price substitution methodology increased to 49 intervals from 7 intervals in October
5. Market prices declined by 20 percent due to sufficient level of effective supply
   - Notable decrease from PHP6,749/MWh last October to PHP5,408/MWh in November
   - Year-on-year comparison of monthly average price posted a 172.7 percent increase from an average of PHP1,983/MWh last year during the height of the pandemic with strict implementation of quarantine measures.

The price substitution methodology or PSM is 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.

MONTHLY MARKET ASSESSMENT REPORT

(26 October – 25 November 2021)

MARKET OUTCOME

SUPPLY MARGIN

620 MW

(393 MW in October)

EFFECTIVE SUPPLY

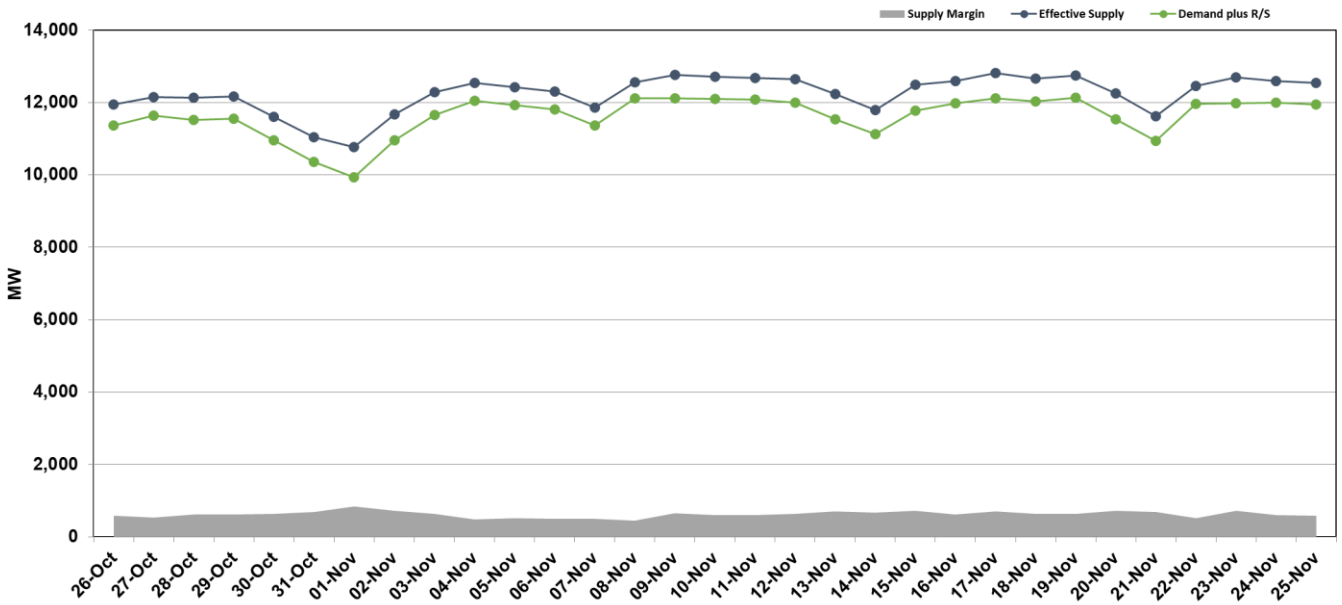
12,246 MW

(11,729 MW in October)

DEMAND PLUS RESERVE SCHEDULE

11,626 MW

(11,336 MW in October)



- Electricity demand with consideration of reserve schedules increased by an average of 2.6 percent or from an average of 11,336 MW last month to 11,626 this month.
- Effective supply improved as the level of outage capacity decreased brought about by, among others, the resumption of operation of SPEX Malampaya.
- Average Supply Margin is generally observed to have improved and increased by 58 percent or an average of 620 MW from 393 MW last October billing.

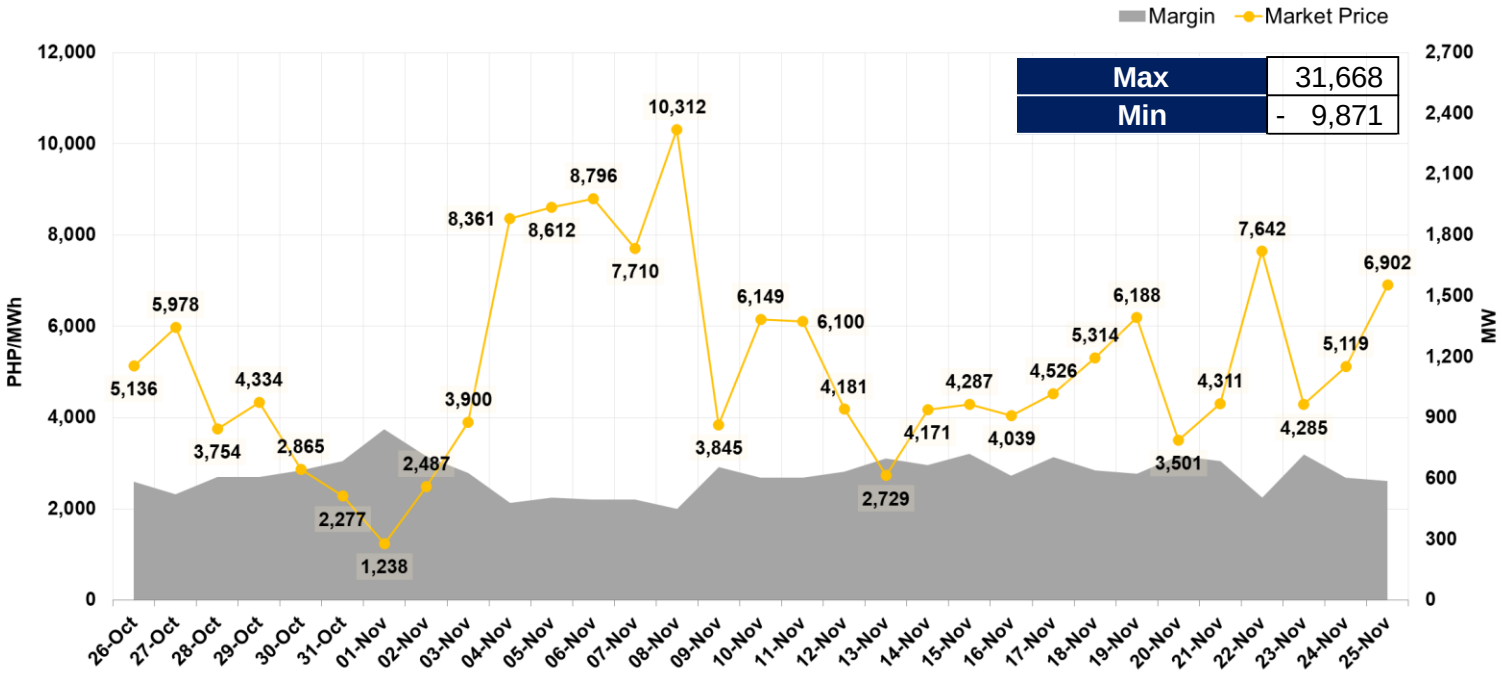
Zone	Average LWAP (PHP/MWh)
NLUZON	5,160.59
MMANILA	5,265.02
SLUZON	5,178.20
LEYTE	5,173.15
CEBU	4,910.93
NEGROS	4,778.63
BOHOL	5,785.01
PANAY	4,898.95

MARKET OUTCOME

With the dynamics between the supply and demand, the former having experienced an increase while the latter remained stable, the November billing month opened with relatively low level of market prices which is highly attributable to the resumption of SPEX Malampaya's operations, allowing dependent generators to operate, resulting to wider supply margin, and subsequently causing the electricity price to fall by an average of 20.3 percent from previous month's PHP6,204/MWh to PHP4,943/MWh. However, episodes of price spikes were also observed on days when the demand was notably high and caused the supply margin to plunge.

On another note, imposition of secondary price cap in the month of November declined by 97 percent or only 20 intervals from 725 intervals in October 2021.

The 15 June 2021 incident involving the underwater drilling operations of DPWH that damaged one of the submarine cables of NGCP connecting the Cebu-Negros islands, affected the power rates in some areas of the Visayas region and subsequently led to the price discrepancy between Bohol and the rest of the grid.



PRICE

4,943
PHP/MWh
(PHP6,204/MWh in October)

MARKET OUTCOME

RAMP LIMITED CAPACITY

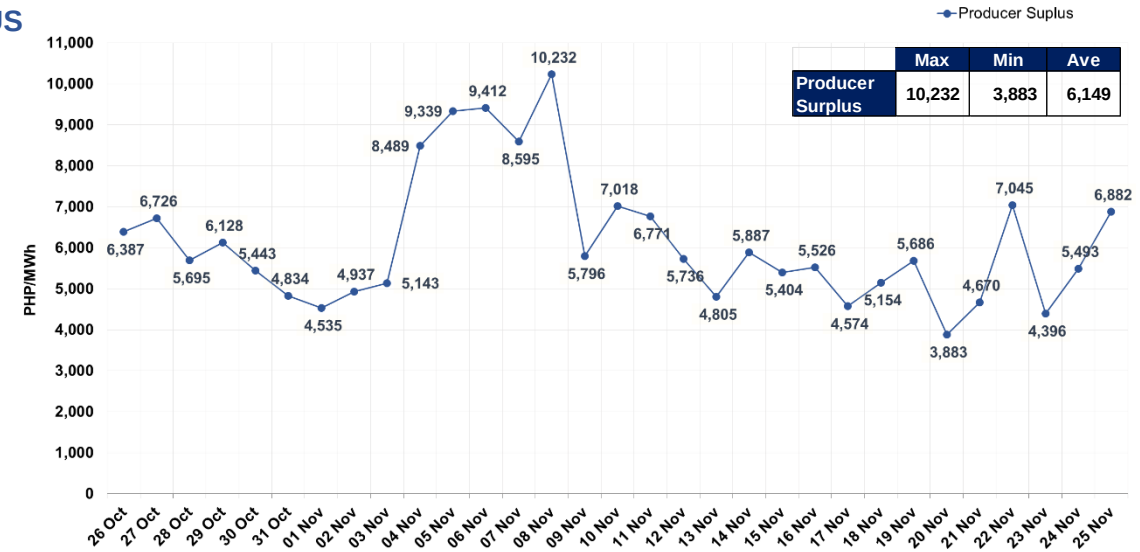
1,981 MW

(1,625MW in October)

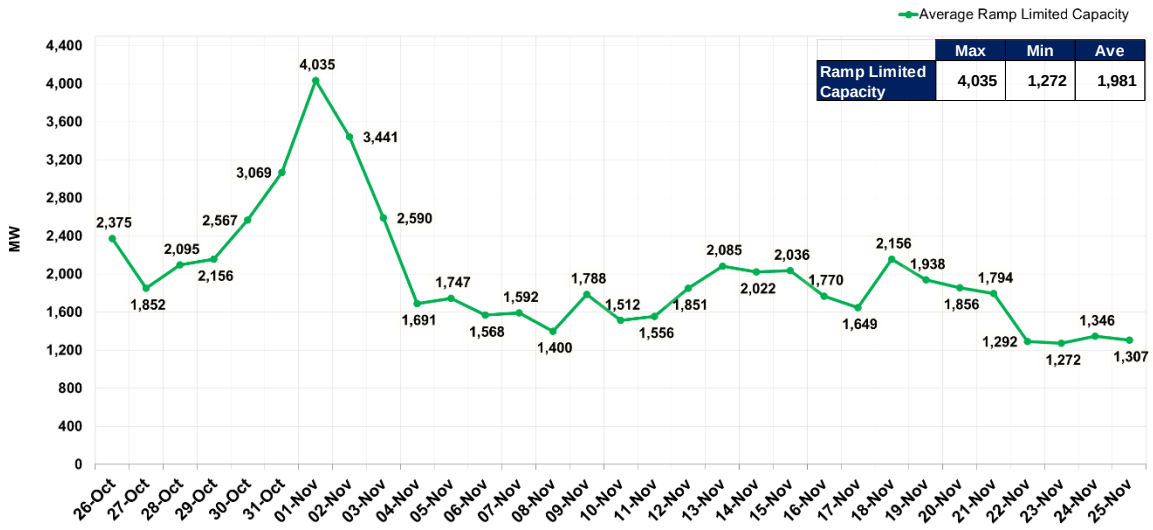
PRODUCER SURPLUS

6,149 PHP

(6,925MW in October)



	Max	Min	Ave
Producer Surplus	10,232	3,883	6,149



	Max	Min	Ave
Ramp Limited Capacity	4,035	1,272	1,981

Ramp limited capacities for the month of November increased by 22 percent. Occurrences of ramp limited capacities were more evident in the new market regime due to shorter intervals requiring for faster delivery of scheduled generations. Notwithstanding, capacities offered/nominated went up which was mainly attributed to the decline in the level of outage capacities.

Producer/generator surplus derived from the difference between market price and offer price, averaged at PHP6,149/MWh across all generators during the month.

Daily average price of the producer/generator surplus was 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.

MONTHLY MARKET ASSESSMENT REPORT

(26 October – 25 November 2021)

MARKET SURVEILLANCE COMMITTEE
MMAR-2021-11

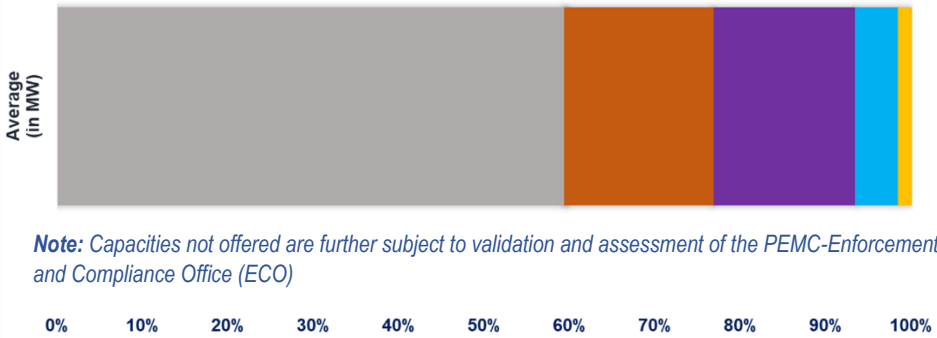
CAPACITY PROFILE

63%
Capacity Offered/ Nominated
13,449 MW
(12,668 MW in October)

17%
Capacity Not Offered/ Not Nominated
3,552 MW
(3,738 MW in October)

13%
Outage Capacity
2,820 MW
(3,526 in October)

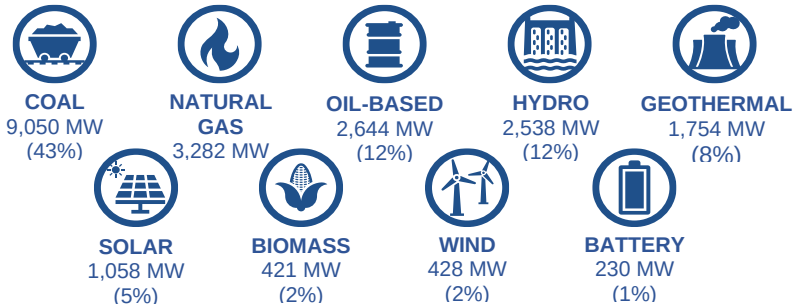
5%
Capacity of Plants on Commissioning
1,208 MW
(1,077 MW in October)



2%
Malaya Capacity (for MRU)
350 MW
(350 MW in October)

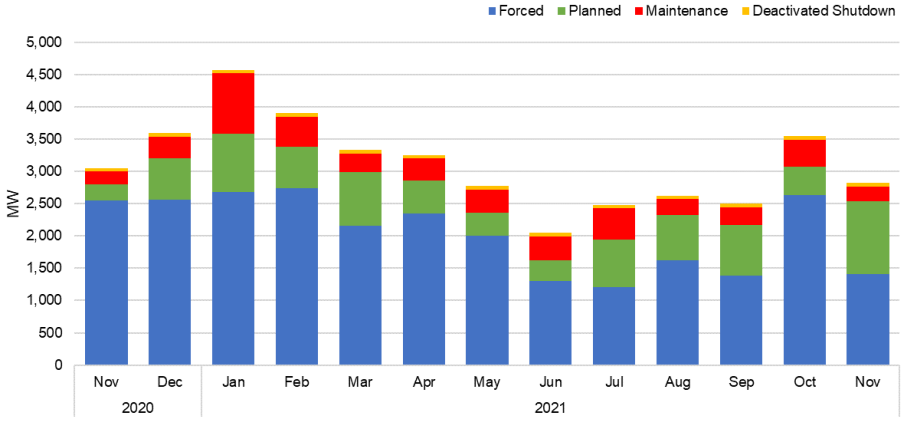
Note: *Capacities not offered are further subject to validation and assessment of the PEMC-Enforcement and Compliance Office (ECO)*

Generators on testing and commissioning (T&C) slightly dropped and constituted just 6 percent of the total registered capacity. Four (4) plants were noted with expired T&C status for the month of November.



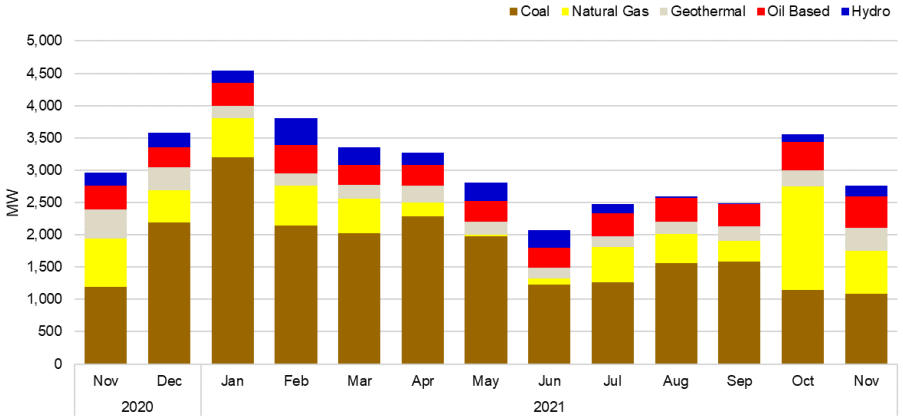
- The WESM registered capacity increased by 49 MW from a total of 21,356 MW to 21,405 MW. The net increase resulted from the change in capacity of a power plant.
- Plants that decreased their capacities were the 2 units of Avion, Universal Robina, Victoria's Milling, and Ecopark-Tagalag Solar power plant.
- Giga Ace and Universal power solutions battery plants were added to the capacity mix.
- Outage capacities posted a notable decrease for the month of November mainly attributed to the resumption of SPEX Malampaya's operation.

OUTAGE CAPACITY BY OUTAGE CATEGORY



Average outage capacity was generally observed to decrease for the November billing. However, planned outages posted an increase due to preventive maintenance activities approved and incorporated in the Grid Operating and Maintenance Plan. For ease of reference, Annex A shows the detailed information on plant outages in all categories.

OUTAGE CAPACITY BY PLANT TYPE



Natural gas recorded with the highest decrease in the outage capacity brought about by the operation of the SPEX Malampaya.

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MONTHLY MARKET ASSESSMENT REPORT

(26 October – 25 November 2021)

MARKET SURVEILLANCE COMMITTEE
MMAR-2021-11

MARKET TRANSACTIONS

BCQ

85.4%

(89.2% in October)

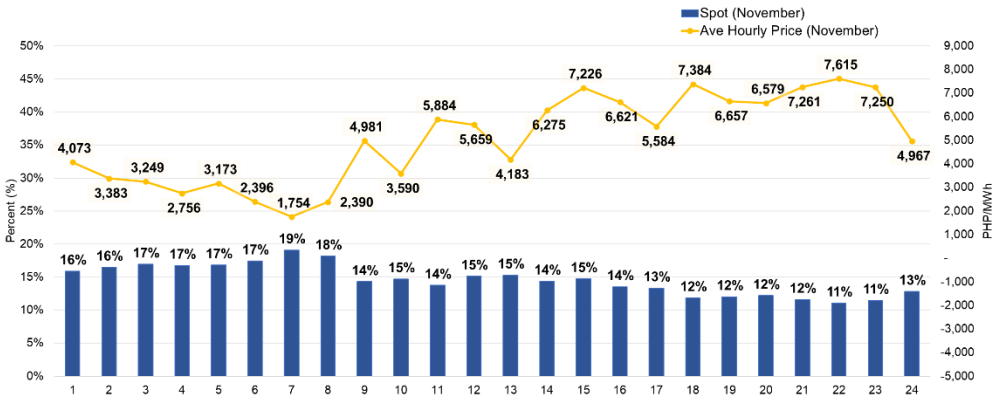
SPOT

14.6%

(10.8% in October)

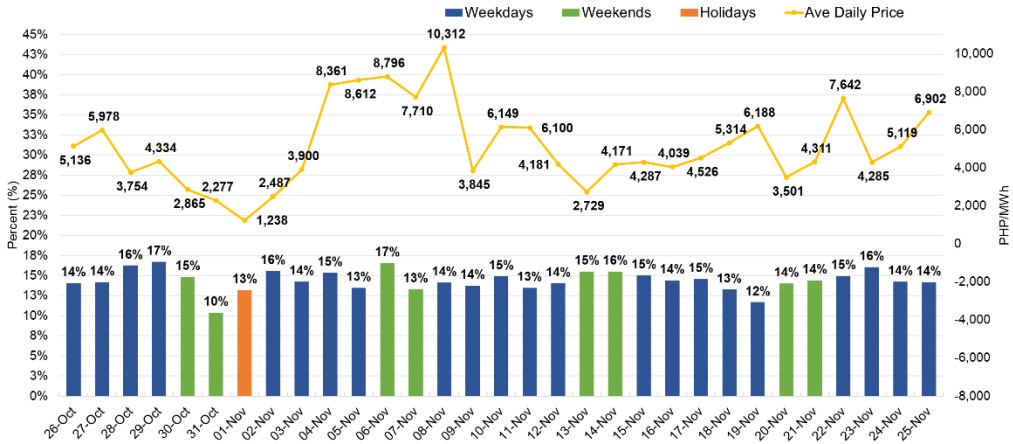
Note: *Spot share percentage is computed as the ratio of spot over the metered quantity in MWh.*

HOURLY SPOT

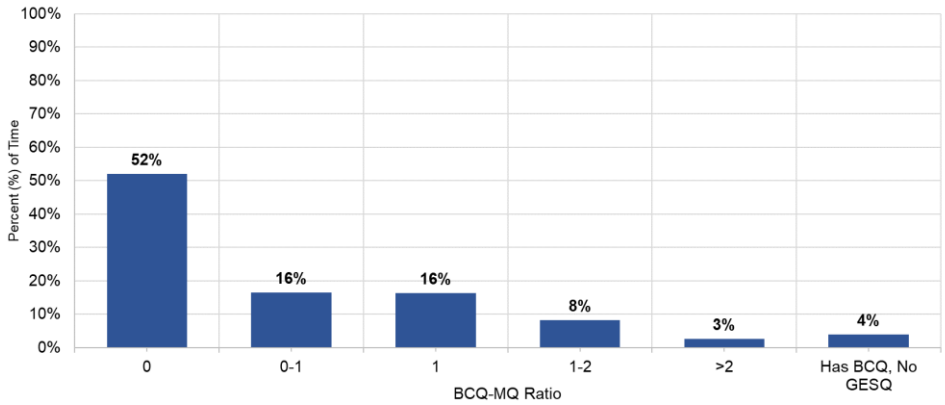


Total spot quantities of generator participants in October stood at an average of 10.9 percent during off-peak and 10.6 percent during peak hours. In general, the trend shows high spot transactions during periods of relatively low prices.

DAILY SPOT



Spot share during weekdays and weekends both averaged at 14.4 percent. The relatively low market prices due to adequate level of supply, may have contributed to the increase in the spot quantities in the market.



BCO-MO RATIO

- The resulting BCQ to MQ ratio of 0 demonstrates that the entire generations were fully sold in the market 52 percent of the time.
- Roughly 16 percent of the time had a BCQ to MQ ratio of 1 which means that metered quantities were entirely allocated to serve bilateral contract obligations.
- Generators with no MQ and fully bought energy in the market to serve their bilateral contract obligations were accounted at 4 percent of the time.
- The remaining 27 percent accounted for BCQs consuming a fraction of their MQ (16 percent), declared BCQs up to twice their MQ (8 percent), and declared BCQs more than twice their MQ (3 percent).

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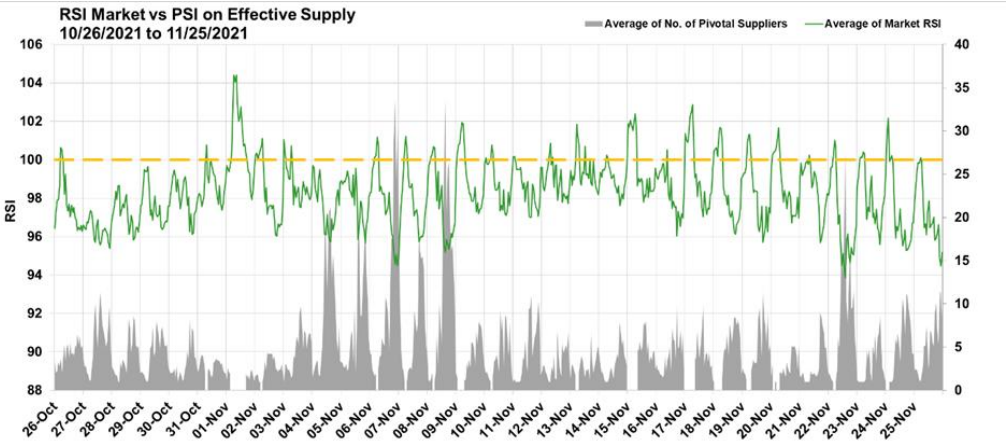
STRUCTURAL COMPETITION INDICES

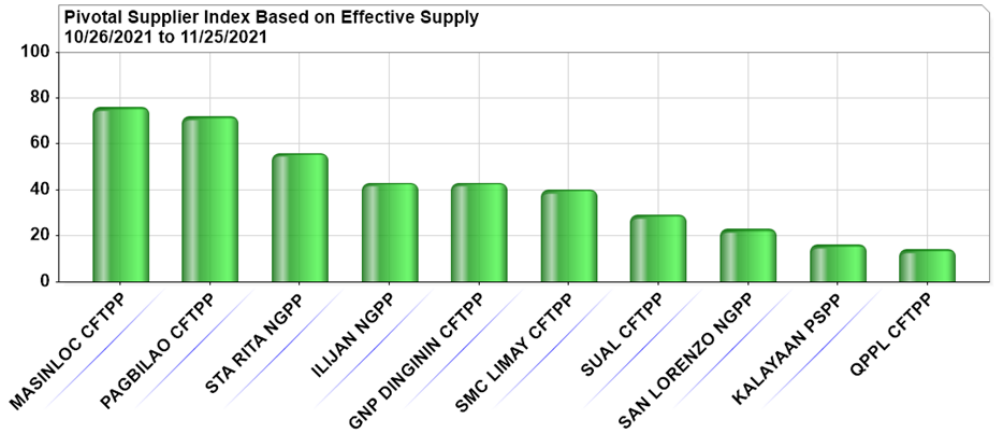
MARKET RSI



Out of the 8,928 trading intervals in November 2021 billing month, 7,513 intervals had a Residual Supply Index (RSI) below the 100 percent mark, indicating presence of pivotal suppliers.

The average market prices for intervals with RSI below 100 percent was PHP5,749/MWh while those with RSI above 100 was PHP1,704/MWh.

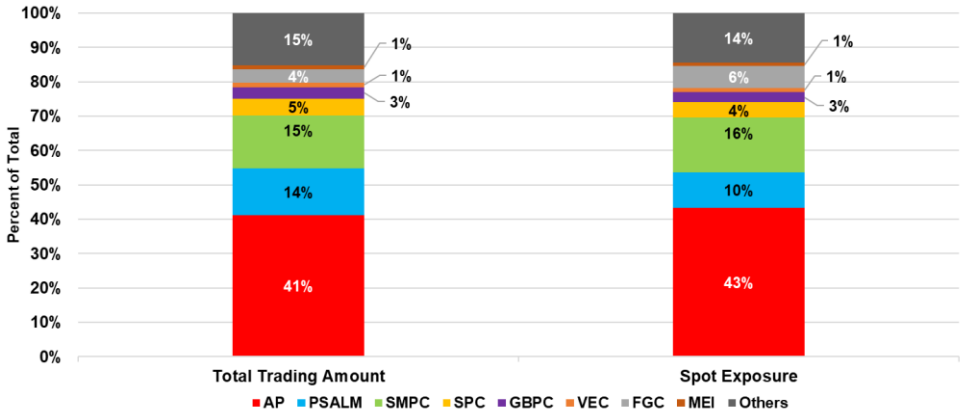
PIVOTAL PLANTS



A total of 145 power plants were pivotal during the period with 99 coming from Luzon and 46 from Visayas.

The notable increase in effective supply due to low outage level translated to a high RSI and low number of pivotal suppliers per 5-min dispatch interval.

TTA AND SPOT SHARE



- Aboitiz Power Corporation (AP) topped the list as the entity with the highest TTA share of sellers in the market with approximately 41 percent.
- San Miguel Power Corp. (SMPC) came in as the second highest TTA share of around 15 percent.
- Power Sector Assets and Liabilities and Management (PSALM) became third place this month, ending with a 14 percent of TTA share.
- The top 3 highest TTA shares comprised 70% of the total shares in the market.
- Total trading amount is derived from the total energy sold and purchased in the market.

DEFINITIONS, REFERENCES, AND INTERPRETATION

- **Pricing Error Notice (PEN)**
  - Pricing errors is 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)**
  - is 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**
  - Producer surplus represents the difference between the price a generator receives and their willingness to sell for each quantity.

- **Price Substitution Methodology (PSM)**
  - is 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**
  - are generators 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.

Annex A. List of Major Plant Outages

Region	Plant Type	Plant/ Unit Name	Capacity (MW)	Date Out	Date In	Duration (Days)	Outage Type	Remarks
CVIS	BIOF	HPCO	3	11/19/2021 0:40	11/22/2021 14:41	3.58	Forced Outage	Auto tripped due to internal problem
CLUZ	COAL	SLPGC 1	150	11/18/2021 10:27	11/22/2021 2:59	3.69	Forced Outage	Tripped due to HP differential expansion
CLUZ	COAL	GN Power 2	316	11/17/2021 10:02	11/22/2021 10:10	5.01	Forced Outage	IDF high vibration
CLUZ	COAL	SLPGC 1	150	11/15/2021 3:23	11/17/2021 16:25	2.54	Forced Outage	Under investigation
CLUZ	COAL	GN Power 2	316	11/14/2021 4:35	11/16/2021 9:02	2.19	Forced Outage	Tripped due to CWP trouble
CVIS	SOLR	San Carlos 2	19.8	11/12/2021 6:54	11/21/2021 6:45	8.99	Forced Outage	Isolated due to tripping of 69KV Cadiz-San Carlos Sub TL
CVIS	SOLR	San Carlos 1	19.8	11/12/2021 6:54	11/21/2021 6:42	8.99	Forced Outage	Isolated due to tripping of 69KV Cadiz-San Carlos Sub TL
CVIS	OIL	TPVI 5	6.8	11/11/2021 18:34	11/17/2021 19:53	6.05	Forced Outage	Emergency cut-out due to knocking sound at cylinder B4
CLUZ	COAL	GN Power 1	316	11/11/2021 0:01	11/14/2021 5:49	3.24	Forced Outage	CWP failure
CLUZ	HYD	Kalayaan 2	180	11/09/2021 0:01	11/13/2021 17:29	4.73	Planned Outage	Maintenance Outage until 13 November 2021
CVIS	BIOF	VMC	2.5	10/21/2021 15:35	11/11/2021 20:09	21.19	Maintenance Outage	Auto-isolate due to activation of SS overvoltage relay during Lagging Reactive Power Capability Testing.
CLUZ	HYD	Ambuklao 3	35	11/07/2021 8:03	11/22/2021 20:01	15.50	Maintenance Outage	Cleaning of power intake trash rack
CLUZ	NATG	Ilijan A1	190	11/06/2021 23:35	11/09/2021 16:55	2.72	Forced Outage	Emergency shutdown due to SPEX Malampaya Gas Supply Restriction.
CLUZ	OIL	Limay 1	60	11/06/2021 0:01	11/12/2021 19:09	6.80	Planned Outage	Hot pot gas inspection
CVIS	OIL	PB101 Unit 1	6	11/05/2021 18:03	11/09/2021 13:53	3.83	Forced Outage	Excessive water egressing at crankcase breather
CVIS	OIL	TPVI 6	6.8	11/04/2021 15:06	11/23/2021 9:09	18.75	Forced Outage	TC PROBLEM
CLUZ	NATG	Ilijan B1	190	11/04/2021 10:16	11/22/2021 13:19	18.13	Forced Outage	Affected by the SPEX Malampaya gas restriction.
CLUZ	NATG	San Gabriel	420	11/03/2021 21:30	11/06/2021 2:02	2.19	Forced Outage	Gas rectriction
CLUZ	COAL	GN Power 1	316	11/03/2021 0:48	11/05/2021 22:23	2.90	Forced Outage	Tripped from 78MW load due to overspeed while on stabilization.
CLUZ	HYD	Kalayaan 1	180	11/02/2021 0:01	11/06/2021 16:26	4.68	Planned Outage	Planned outage until 06 November 2021.
CVIS	GEO	Malitbog 3	72	10/31/2021 0:19	11/04/2021 23:07	4.95	Forced Outage	Emergency cut-out from the system
CLUZ	OIL	BPPC 9	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 8	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 7	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 6	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 5	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 4	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 3	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 21	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 20	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 2	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 19	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 18	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 17	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 16	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 15	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 14	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 13	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 12	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 11	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 10	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	BPPC 1	10	10/30/2021 6:51	11/02/2021 14:10	3.30	Maintenance Outage	Maintenance of activities of 1590EC Plant switchyard.
CLUZ	OIL	SLPGC 4	25	10/26/2021 12:01	11/09/2021 14:59	14.12	Planned Outage	PM
CLUZ	OIL	SLPGC 3	25	10/26/2021 12:01	11/09/2021 15:13	14.13	Planned Outage	PM
CVIS	OIL	TPVI 6	6.8	10/21/2021 17:47	10/27/2021 18:08	6.01	Forced Outage	FUEL LEAK
CLUZ	NATG	Sta. Rita 4	264	09/29/2021 3:56	11/08/2021 12:01	40.34	Maintenance Outage	PM and inspection of generator transformer and switchyard
CLUZ	COAL	SLPGC 2	150	10/16/2021 9:28	10/26/2021 22:55	10.56	Forced Outage	Emergency shutdown due to boiler tube leak
CLUZ	NATG	San Gabriel	420	10/01/2021 22:31	10/30/2021 10:24	28.50	Forced Outage	Malampaya Gas. SPEX Turn Around Activity from 02-21 October 2021.
CVIS	SOLR	San Carlos Sun	46.8	10/24/2021 6:11	11/21/2021 6:10	28.00	Maintenance Outage	SACASUN North line only. isolate from the grid due to APMS of 138kV Bacolod-Cadiz TL.
CVIS	WIND	PWind	36.7	10/23/2021 20:01	10/29/2021 22:30	6.10	Forced Outage	Auto tripped due to line fault.
CVIS	GEO	Malitbog 1	72	10/09/2021 0:14	11/22/2021 5:47	44.23	Planned Outage	PMS
CLUZ	GEO	Makban 5	55	10/18/2021 9:05	10/26/2021 18:38	8.40	Forced Outage	High turbine vibration.
CVIS	GEO	Mahanagdong B1	5	10/02/2021 15:03	10/27/2021 18:51	25.16	Forced Outage	total plant outage. under investigation
CLUZ	OIL	Limay 2	60	09/20/2021 1:01	10/31/2021 9:55	41.37	Planned Outage	Maintenance Outage until 03 November 2021
CLUZ	NATG	Ilijan B3	220	10/01/2021 22:22	10/30/2021 14:06	28.66	Forced Outage	Malampaya Gas. SPEX Turn Around Activity from 02-21 October 2021.
CLUZ	NATG	Ilijan B2	190	10/01/2021 22:08	11/02/2021 10:12	31.50	Forced Outage	Malampaya Gas. SPEX Turn Around Activity from 02-21 October 2021.
CLUZ	NATG	Ilijan B1	190	10/01/2021 22:33	10/30/2021 10:24	28.49	Forced Outage	Malampaya Gas. SPEX Turn Around Activity from 02-21 October 2021.
CLUZ	COAL	GN Power 1	316	10/18/2021 22:14	11/02/2021 23:43	15.06	Forced Outage	Suspected boiler tube leak.
CVIS	OIL	CENPRI 2	4.5	10/25/2021 15:28	11/08/2021 16:01	14.02	Forced Outage	Auto-tripped due to busted exhaust pipe
CLUZ	NATG	Avion 1	50.3	10/24/2021 0:05	10/30/2021 20:30	6.85	Maintenance Outage	Maintenance outage.