

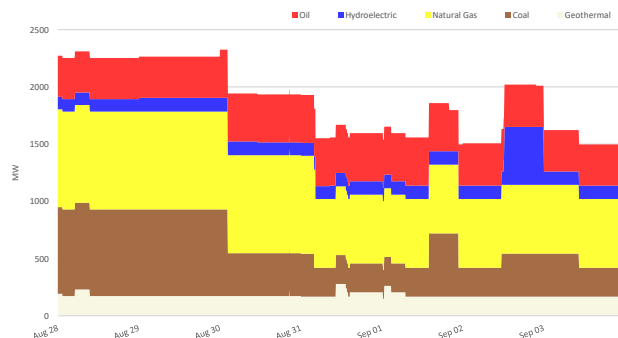
PEMC MARKET ASSESSMENT HIGHLIGHTS

- The average demand and the reserve schedule, recorded at 11,603 MW during the week of 28 Aug -03 Sep 2023, was lower than the previous week at 12,031 MW and higher than the same week last year at 11,569 MW.
- The average effective supply during the week was 12,504 MW, lower than the 12,819 MW of the previous week and higher than the 12,018 MW during the same week last year. Ramping limitations were considered in the calculation of the effective supply.
 - The capacity on outage averaged at 1,878 MW, lower than last week's 2,395 MW. About 38% of the 1,878 MW involved Natural Gas plants, while in terms of category, about 59% were Forced Outages.
- As a result, an average supply margin of 900 MW was observed during the week, which is higher by about 14% relative to the previous week and higher by about 101% in comparison with the same week last year. The minimum supply margin based on MMS solution was 360.47 MW on 31 August 2023 18:30. The average supply margin was 796.44 MW at peak intervals and 964.39 MW at off-peak intervals.
- Correspondingly, average GWAP was recorded at PHP 3,890/MWh from PHP 5,594/MWh last week. This is lower than the PHP8,615/MWh during the same week last year.
 - No secondary price cap was imposed for this week
- The top 5 participant groups accounted for about 79% of the offered capacity. The Herfindahl-Hirschman Index (HHI) by participant group indicated partially concentrated and moderately concentrated market based on the offered and registered capacities respectively.
- The top 5 pivotal plants during the week were –
 - GNP DINGININ CFTPP (about 88.69% of the time)
 - STARITA NGPP (about 23.02% of the time)
 - MARIVELES CFTPP (about 7.74% of the time)
 - MASINLOC CFTPP (about 4.96% of the time)
 - SUAL CFTPP (about 4.51% of the time)
- Based on the MMS Solution, the top 5 congested equipment during the week were –
 - 138kV Maasin-Ubay Line 1 (about 27.6% of the time)
 - 138kV Samboan-Amlan Line1 (0.1% of the time)
 - Calbayog_Transformer 1 (0.1% of the time)
 - PGPP1_Transformer 2 (0.05% of the time)
 - 230 kV Tabango_Daan Bantayan (0.05% of the time)
- OPA ANALYSIS
 - Biofuel were purely in preferential nomination for the whole week.
 - Coal plants offered around 300MW of its effective capacity at price range Php25,000/MWh to Php 30,000/MWh on September 02 in the evening peak.
 - Natural gas plants had less offered capacity on August 30.
 - Oil-based plants' highest effective capacity was recorded on August 22.
 - Solar plants' highest peak nomination was recorded on September 1.
 - Wind plants' highest nomination was recorded on August 30.

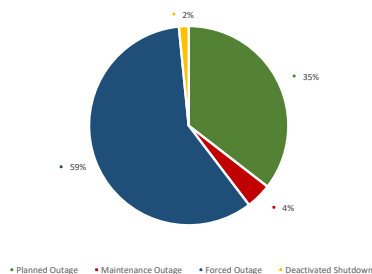
IEMOP MARKET SYSTEMS ADVISORY

- No IT-related issue was advised in IEMOP's market systems from 28 Aug -03 Sep 2023.

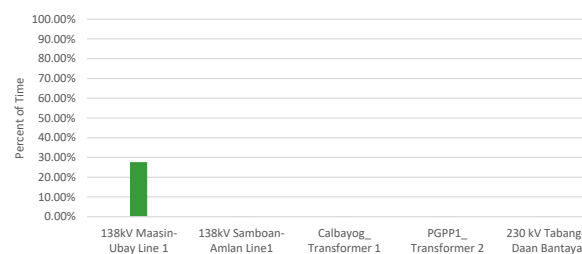
CAPACITY ON OUTAGE BY PLANT TYPE



CAPACITY ON OUTAGE BY OUTAGE CATEGORY



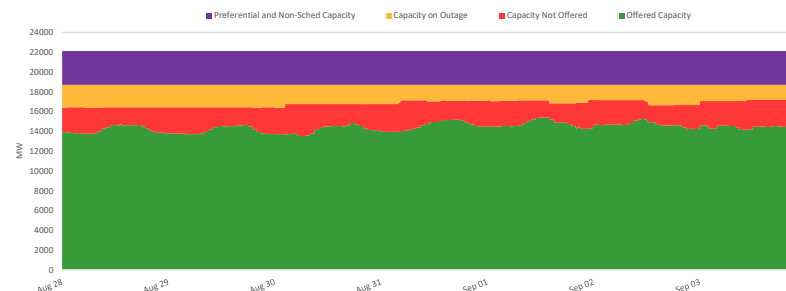
RTD CONGESTION



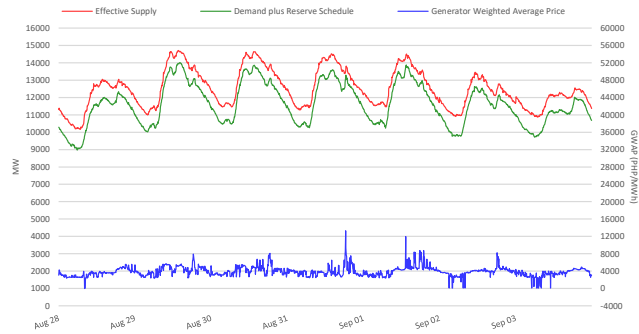
SUMMARY (PRICE, SUPPLY, DEMAND AND RESERVE SCHEDULE)

Particulars		28 Aug -03 Sep 2023	Previous Week (21 - 27 Aug 2023)	Same Week, Previous Year (29 Aug -04 Sep 2022)	Percent Change From	
					Previous Week	Same Week, Prev Year
GWAP (PHP/MWh)	max	13,289.189	29,427.923	34,149.667	-54.842%	-61.085%
	min	0.000	0.000	-9.762	-	100.000%
	ave	3,889.771	5,594.153	8,614.695	-30.467%	-54.847%
Effective Supply (MW)	max	14,709.580	15,070.954	14,160.535	-2.398%	3.877%
	min	10,163.694	10,738.400	9,832.812	-5.352%	3.365%
	ave	12,503.700	12,818.899	12,017.853	-2.459%	4.043%
System Demand (MW)	max	13,030.960	13,868.160	13,122.280	-6.037%	-0.696%
	min	8,510.960	9,189.630	8,136.250	-7.385%	4.605%
	ave	10,884.362	11,484.512	10,649.847	-5.226%	2.202%
Demand + Reserve Schedule (MW)	max	14,012.818	14,687.938	14,074.111	-4.596%	-0.436%
	min	8,969.480	9,719.510	9,205.750	-7.717%	-2.567%
	ave	11,603.291	12,030.540	11,568.932	-3.551%	0.297%
Supply Margin (MW)	max	1,309.049	1,399.838	976.626	-6.486%	34.038%
	min	360.471	213.448	-2.415	68.880%	15k%
	ave	900.409	788.359	448.921	14.213%	100.572%

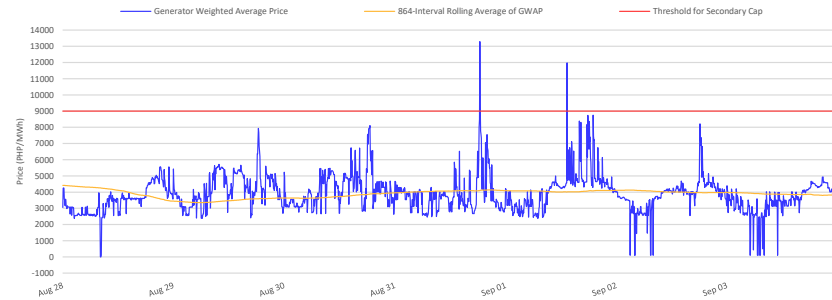
CAPACITY PROFILE



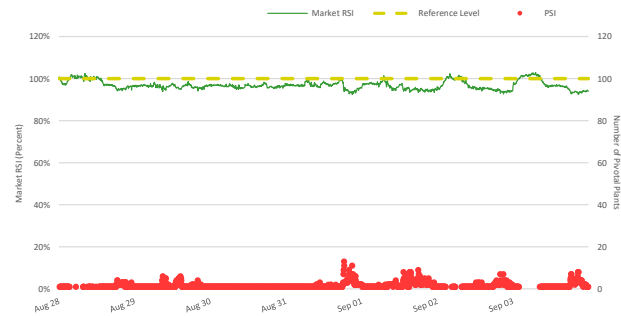
SUPPLY, DEMAND AND PRICE



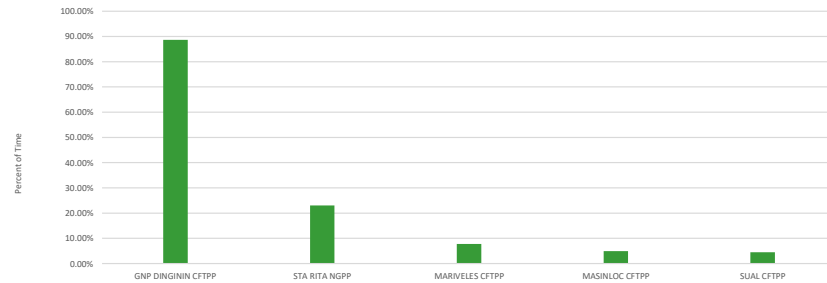
GENERATOR WEIGHTED AVERAGE PRICE



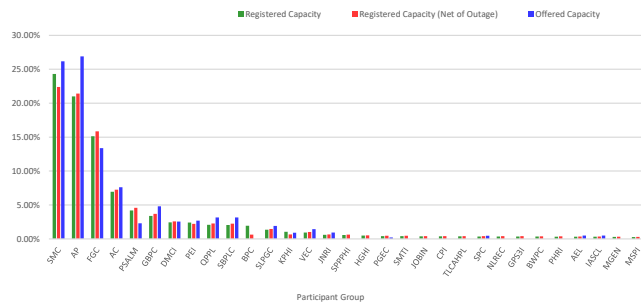
MARKET RSI VS PIVOTAL PLANTS



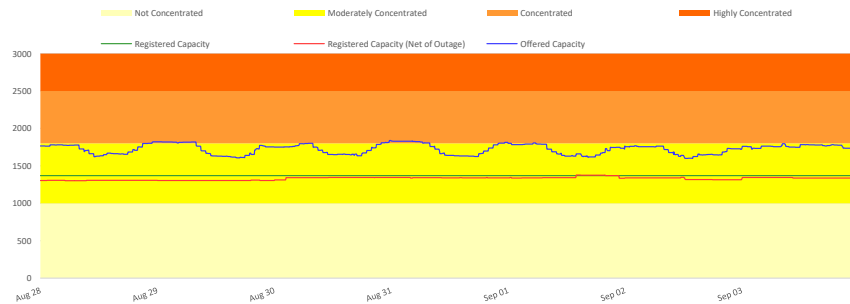
PSI



MARKET SHARE

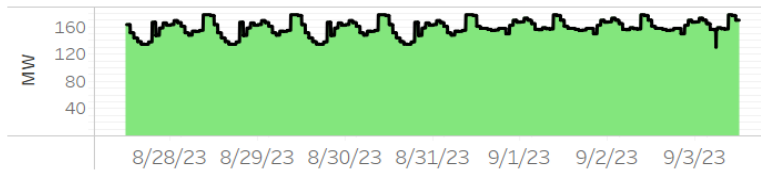


HERFINDAHL-HIRSCHMAN INDEX

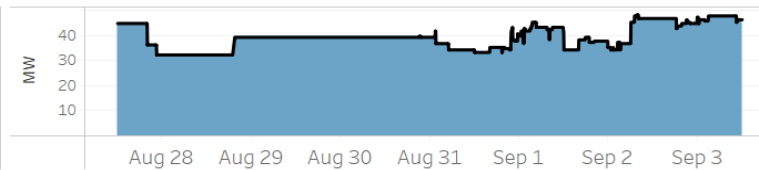


OFFER PATTERN ANALYSIS

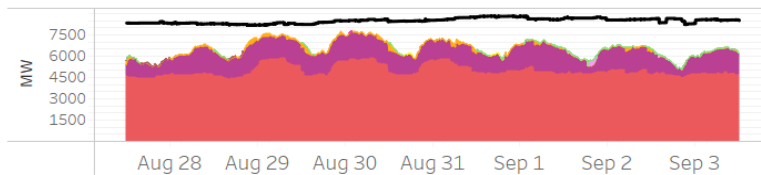
BATTERY



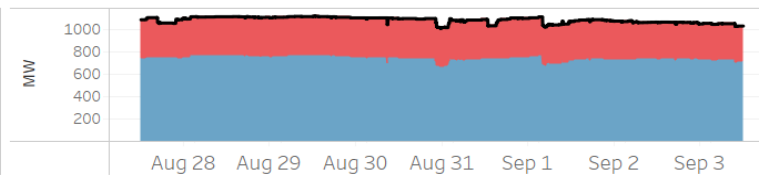
BIOFUEL



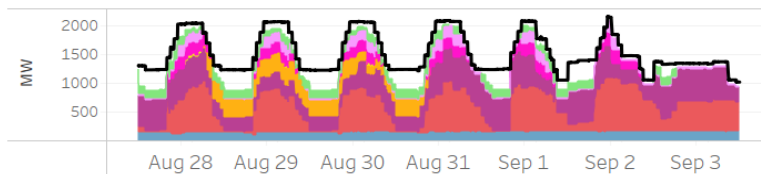
COAL



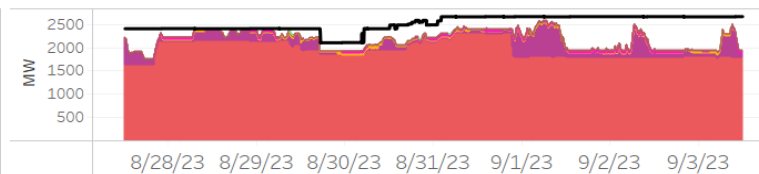
GEOHERMAL



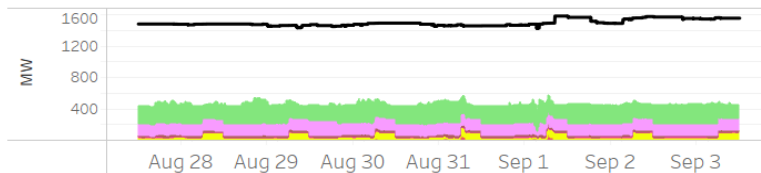
HYDRO



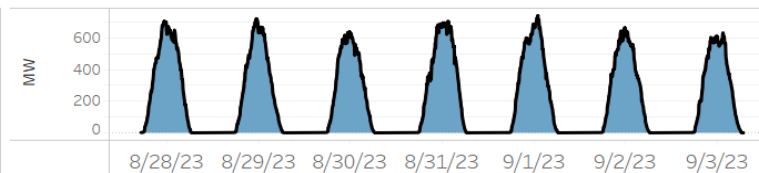
NATURAL GAS



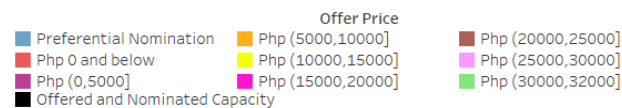
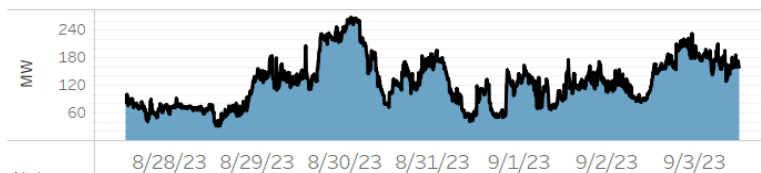
OIL-BASED



SOLAR



WIND



Notes:

1. In Php (X, Y], it includes offer price greater than Php X but less than or equal to Php Y.
2. Reflected capacity includes offered capacity of all scheduled generators, nominated loading level of nonscheduled generators and projected output of preferential dispatch generato..

GLOSSARY OF TERMS

EFFECTIVE SUPPLY - The effective supply is equal to the offered capacity of all scheduled generator resources, nominated loading level of non-scheduled generating units and projected output of preferential dispatch generating units, adjusted for any security limit provided by the System Operator and other constraints considered during MMS simulation such as generator offered ramp rates. Scheduled output of plants on testing and commissioning through the imposition of security limit by SO and scheduled output of Malaya plant when it is called to run as Must Run Unit (MRU) are likewise accounted for in the effective supply.

MARKET RESIDUAL SUPPLY INDEX (Market RSI) - The RSI is a dynamic continuous index measured as ratio of the available generation without a generator to the total generation required to supply the demand. The RSI is measured for each generator. The greater the RSI of a generator, the less will be its potential ability to exercise market power and manipulate prices, as there will be sufficient capacity from the other generators. In contrary, the lower the RSI, the greater the market power of a generator (and its potential benefit of exercising market power), as the market is strongly dependent on its availability to be able to fully supply the demand. In particular, a RSI greater than 100% for a generator means that the remaining generators can cover the demand, and in principle that generator cannot manipulate market price. On the other hand, a RSI less than 100% means that the generator is pivotal in supplying the demand.

The RSI for the whole market (Market RSI) is measured as the lowest RSI among all the generators in the market. A Market RSI less than 100% indicates the presence of pivotal generator/s.

MARKET SHARE - The fraction of the total capacity or energy that a company or related group owns or controls in the market.

MAJOR PARTICIPANT GROUP - The grouping of generators by ownership or control.

PIVOTAL SUPPLIER INDEX (PSI) - The pivotal supplier index is a binary variable (1 for pivotal and 0 for not pivotal) for each generator. The index identifies whether a generator is pivotal in supplying the demand. The PSI is calculated as the percentage of time that a generator is pivotal in a period (i.e. monthly).

HERFINDAHL-HIRSCHMAN INDEX (HHI) - is a commonly accepted measure of market concentration that takes into account the relative size and distribution of participants in the market. The HHI is a number between 0 and 10,000, which is calculated as the sum of squares of the participant's market share. The HHI approaches zero when the market has very large number of participants with each having a relatively small market share. In contrary, the HHI increases as the number of participants in the market decreases, and the disparity in the market shares among the participants increases. The following are the widely used HHI screening numbers: (1) less than 1,000 - not concentrated; (2) 1,000 to 1,800 - moderately concentrated; (3) greater than 1,800 - concentrated; and (4) greater than 2,500 - highly concentrated.

REGISTERED CAPACITY - The capacity registered by a generator with WESM.

REGISTERED CAPACITY (NET OF OUTAGE) - The capacity registered by a generator with WESM less capacity on outage.

OFFERED CAPACITY - The offer to supply electricity submitted by a generator.

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