Monthly Monitoring Report on Over-riding Constraints for August 2022 Billing Month

26 July to 25 August 2022

December 2022

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

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Philippine Electricity Market Corporation

OCR-2022-08

IMPOSITIONS BY CATEGORY AND REGION

40,538 Total Impositions

99.6% which are non-security limits

LUZON **71%** 28,830 OC

Visayas **29%** 11,708 OC

24,421 OC Impositions for July 2022

66% increase from previous month

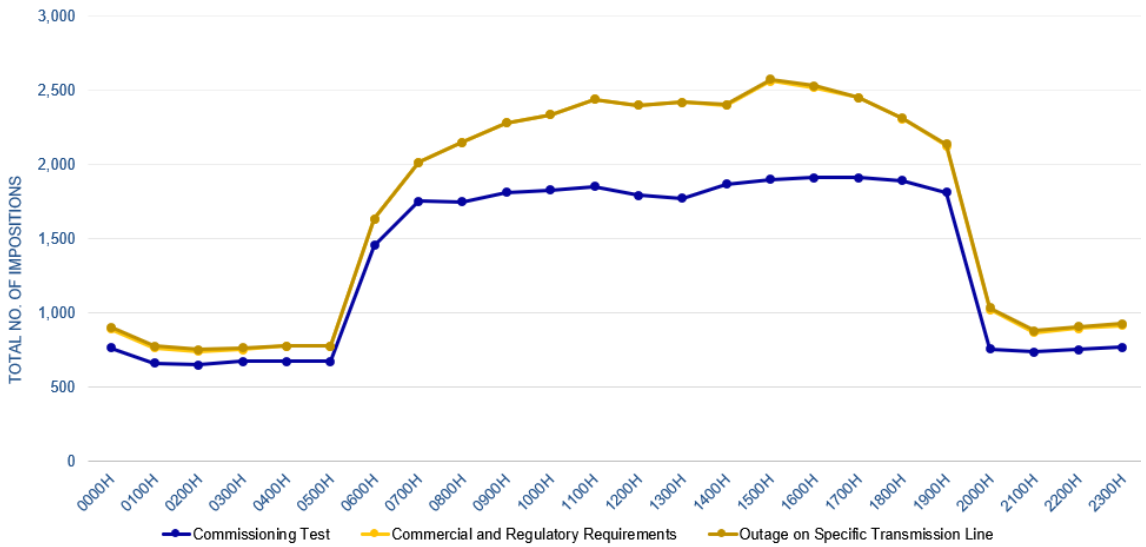
The August 2022 billing month recorded over-riding constraint impositions with a **66% increase**, when compared to the previous billing month, involving **36 Luzon** and **9 Visayas generators**. The increase was mainly attributable to the resumption of commissioning test of a Coal plant, conduct of commissioning test of Hydro plants and the conduct of emission test of Oil-based plants

0.04% or **143 impositions** were categorized as **security** limit a result of an outage of a specific transmission line.

Note: *Under the Dispatch Protocol Manual Issue 16.0, imposition of over-riding constraints falls into 2 categories – 1) security limit i.e., MRU and other types as may be recommended by SO and 2) non-security limit. Security limit is imposed to address possible threats in system security while non-security limit is related to 1) generating unit limitations, 2) commercial and regulatory tests, and lastly, 3) conduct of commissioning test of plants*

The monitoring of the over-riding constraints is based on the data and information provided by MO (i.e., real time market results and MMS-input files on security limits) and SO (i.e., SO Data for Market Monitoring).

IMPOSITIONS BY HOUR



Similar with the trend for the previous month, majority of over-riding constraints imposed over a 24-hour period were caused by the conduct of commissioning tests for an average of **81 percent of the time**, which is primarily attributed to the **commissioning tests of Battery, Coal, Hydro, and Solar plants**, with a total capacity **of 1,144 MW** imposed during **peak hours** and 1,119 MW during **off-peak hours**

Increase in **ancillary service test and emission test** of a coal plant and oil-based plant were the reasons for the increase in **commercial & regulatory requirements** for the month of August 2022. Commercial & regulatory requirements saw a total of **2,382 MW capacity scheduled during peak hours** and **2,735MW capacity during off-peak hours**.

The difference between the peak and during off-peak hours was due to plants with larger capacities imposed mostly during off-peak hours when most of commercial and regulatory tests were undertaken.

Over-riding constraint impositions to address the security limit brought about by an outage on a specific transmission line were noted which occurred mostly during off-peak hours.

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IMPOSITIONS BY INCIDENTS

Commissioning Test — 79.89%

A **71.8% increase** from the previous month's impositions was noted due to resumption of commissioning test of a coal plant and continuing commissioning test period of hydro and solar plants.

Generating Unit Limitation — 0%

No **over-riding constraints** events related **to Generating Unit limitation** were noted.

Commercial and Regulatory Requirement — 19.76%

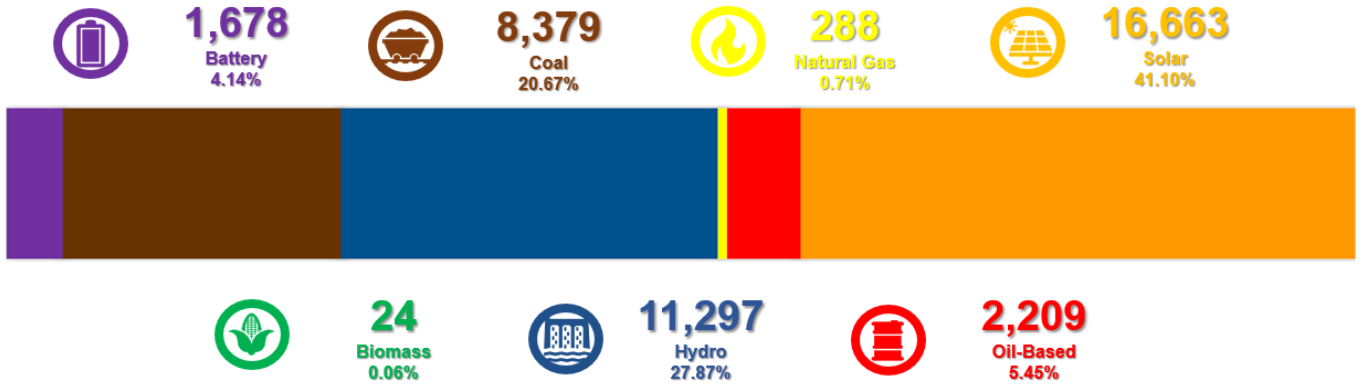
43.78% increase was observed from the previous month and was attributed to the execution of various tests such as Ancillary test, Emission test, Grid Compliance Test, Net Dependable Capacity Test, and Performance test.

Outage on Specific Transmission Line — 0.35%

A security limit due to the **outage of a specific transmission line** led to a coal plant being imposed with over-riding constraints to address the security of the grid as provided for in Section 17 of the Dispatch Protocol Manual.

IMPOSITIONS BY PLANT TYPE

The resumption of a coal plant's commissioning test, the continuation of battery, hydro, and solar plant commissioning tests, the ancillary service test of coal plants, and the emission test of oil-based plants all contributed to an increase in over-riding constraints during the August 2022 billing month.



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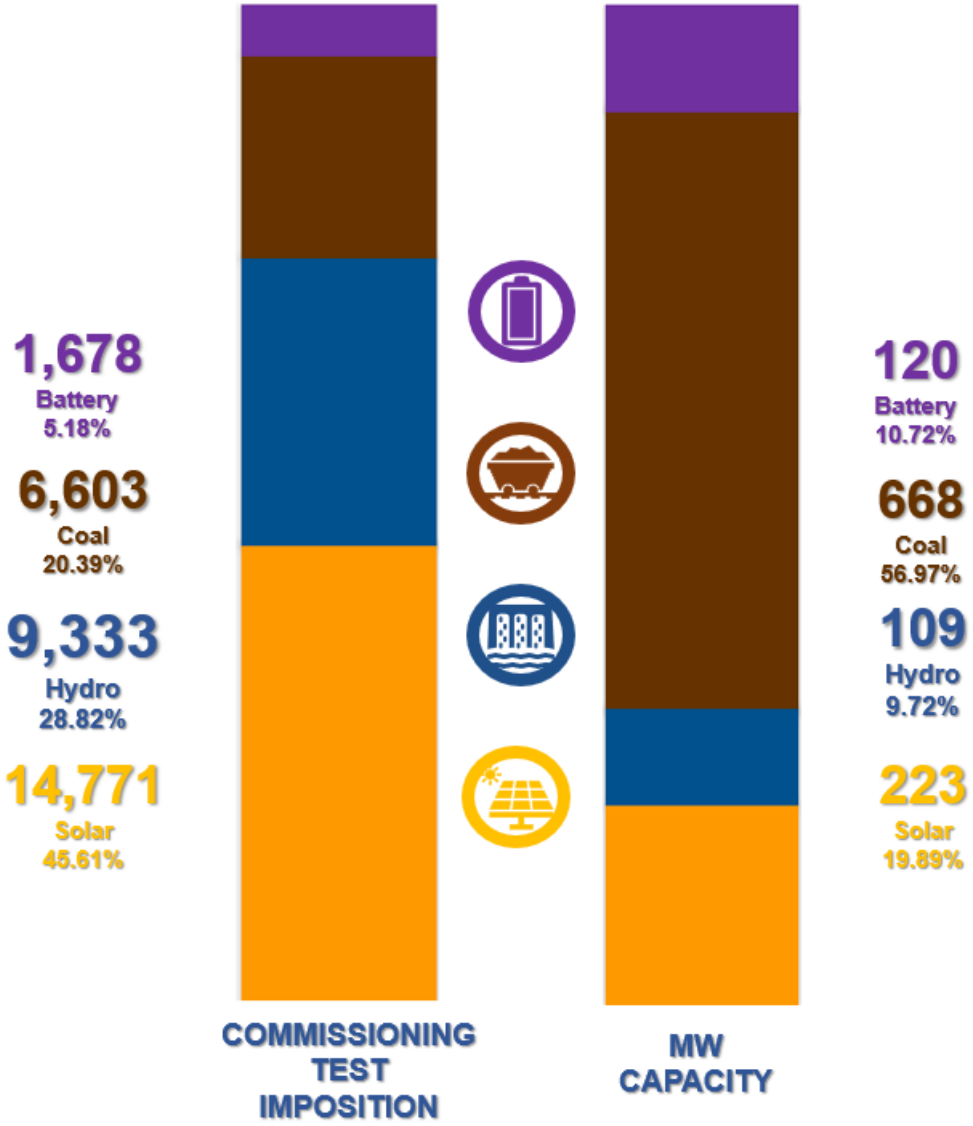
PLANTS ON COMMISSIONING TEST



The August 2022 billing month saw an **increase in impositions of over-riding constraints under commissioning tests** when compared to the previous month. Extension of hydro and solar plants' **Provisional Certificates of Approval to Connect (PCATCs)** allowed them to be continuously imposed with over-riding constraints. A total of **1,144 MW in capacity was imposed with over-riding constraints** due to commissioning tests.

This month, most impositions for commissioning tests were attributable to Solar, followed by Hydro, Coal, and Battery plants.

Based on the updates provided by the Independent Electricity Market Operator of the Philippines (IEMOP), the following were some of the updates on the **status of power plants under extended commissioning test** during the August billing month:

- **1 Battery, 1 Coal, 2 Hydro, and 1 Solar plant** were given extensions to their respective PCATCs to conduct commissioning tests
- **3 Battery plants** and **1 Oil-based plant** had **expired** commissioning test periods in August 2022 and were yet to be issued with Final Certificate of Approval to Connect (FCATC) / Provisional Authority to Operate (PAO), or were yet to be given an extension for PCATC

Note: The Department of Energy (DOE) department circular no. DC2021-06-0013 (Adopting a General Framework Governing the Test and Commissioning of Generation Facilities for Ensuring Readiness to Deliver Energy to the Grid or Distribution Network) provides a transitory provision that:

- *Allows generation companies that are already on T&C, upon effectivity of the circular (especially those plants on prolonged commissioning test), to continue to conduct commissioning test for a maximum of two (2) months after the effectivity date.*

This will be in consideration in the MSC's monitoring of plants on prolonged testing commissioning test (beyond the maximum two-month period allowed also under the ERC Resolution No. 16, Series of 2014).

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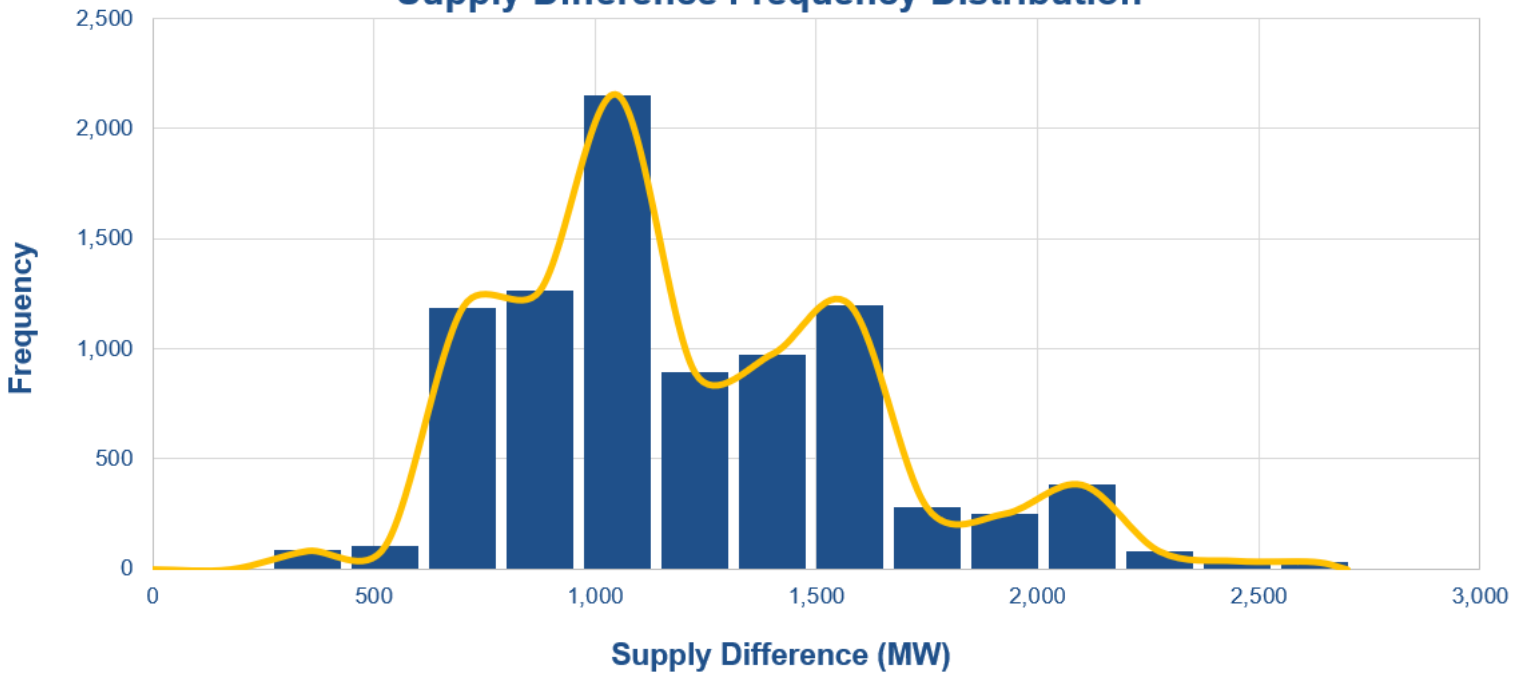
MARKET PRICE ANALYSIS ON SUPPLY

Supply Difference Frequency Distribution



When comparing a market run without any over-riding constraints in the system through a simulation, it revealed that the over-riding constraints imposed on generators throughout the August billing month accounted for an **average difference of 1,110 MW** in supply. Most of the time, over-riding constraints impositions account for **900 MW to 1,100 MW** in capacities considered as price takers, resulting in lower market clearing prices. This large difference in supply was mainly a result of a coal plant with large capacity resuming its commissioning test.

During **peak hours**, higher capacities were dispatched under over-riding constraint impositions, an average market effect of **1,310 MW** and an average of **941 MW during off-peak hours.**

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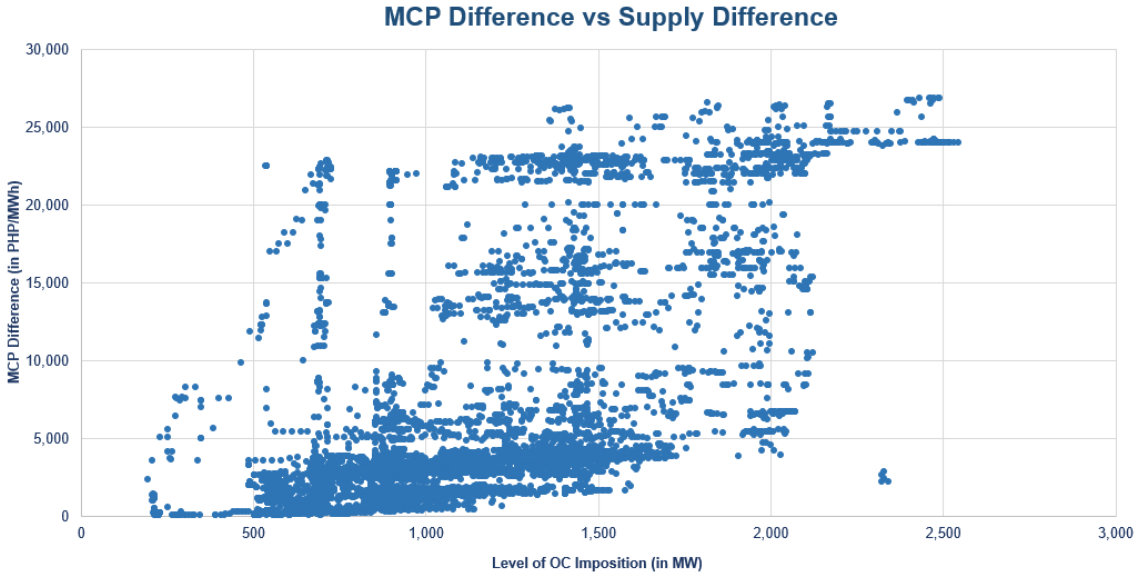
ON MARKET CLEARING PRICE



The supply difference generated via over-riding constraint impositions, with an average of **1,110 MW** resulted in a **decrease of market pricing by PhP 6,168/MWh, on average**.

It is clear that the higher the level of over-riding constraint imposed, the greater the decrease in market clearing price.

Commissioning tests, commercial and regulatory tests, and commercial and regulatory tests conducted by large capacity plants such as coal and natural gas with a total capacity of **1,073 MW** all contributed significantly to the supply difference provided by the overriding constraints.

Among others, outages, especially of huge capacities from various plants, contributed to the movement of optimization resulting in higher prices clearing the market.

Further examination of the impact on over-riding constraint impositions on market clearing prices, in terms of its percentage distribution, revealed that the MCP difference is less than **PHP 7,796/MWh for 70% of the time**.