

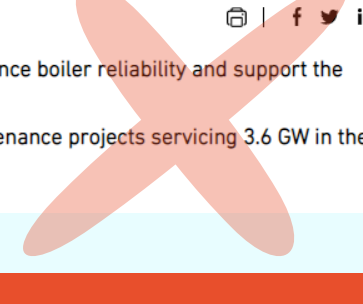
# Mitsubishi Power claims Mindanao power outages are due to hydropower intermittency. Data show otherwise.

## NEWS

### Mitsubishi Power Secures Three-Year Agreement to Maintain Boilers Crucial for Reliable Energy Access in Mindanao

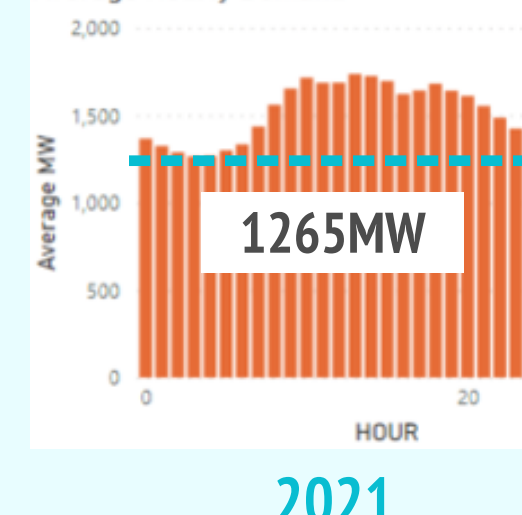
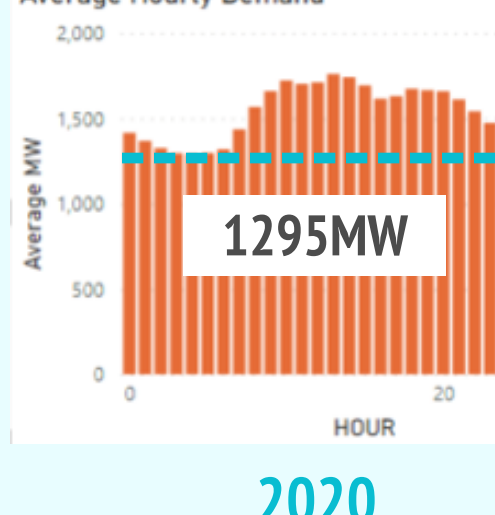
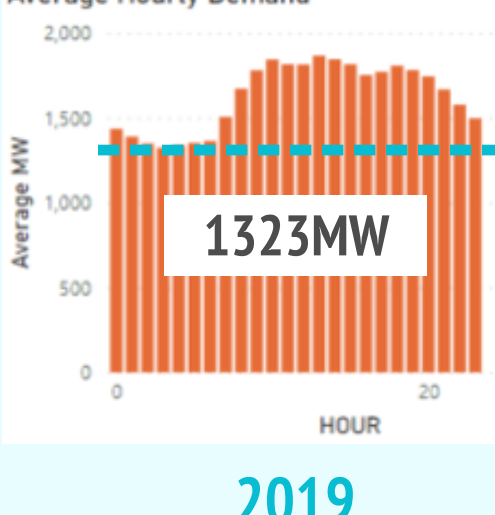
2021-08-05

- Maintenance work at Therma South, Inc. to enhance boiler reliability and support the power generation needs of Mindanao
- Steady track record of over 90 risk-based maintenance projects servicing 3.6 GW in the Philippines pivotal to awarding of contract



## MINDANAO BASELOAD REQUIREMENTS

The figure shows the average 24-hour load profile in the Mindanao grid.



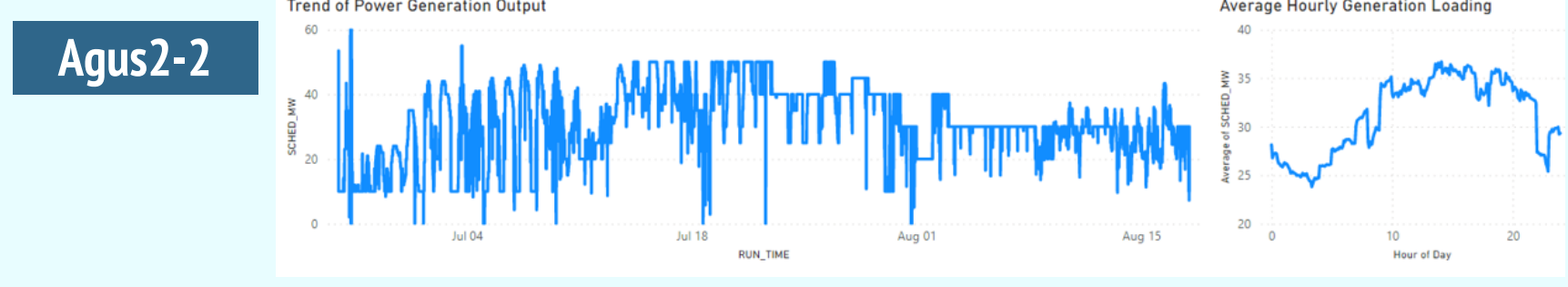
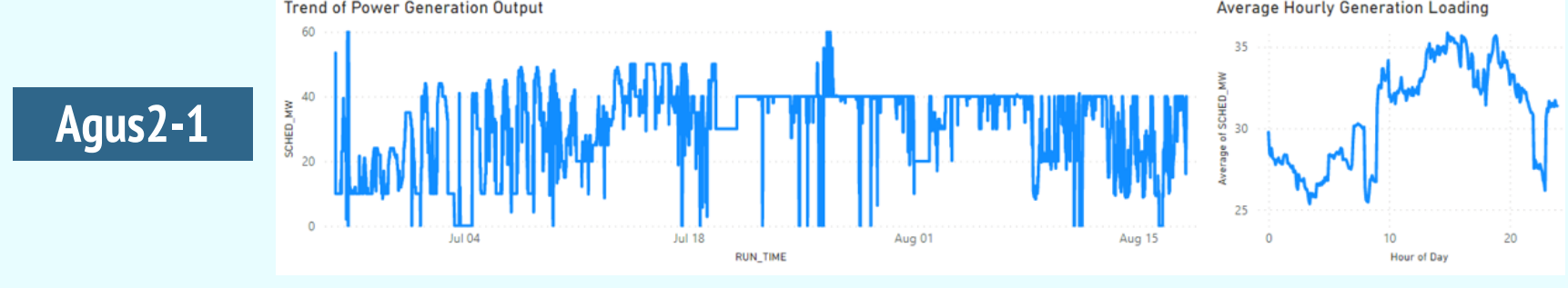
The baseload plant requirement in Mindanao is no more than 1350MW.

Baseload is the minimum amount of power required to be supplied 24/7.



## MINDANAO HYDROELECTRIC PLANTS

The figure shows the average 24-hour load profile in the Mindanao grid.



Hydroelectric plants in Mindanao are NOT intermittent. They provide flexible generation.

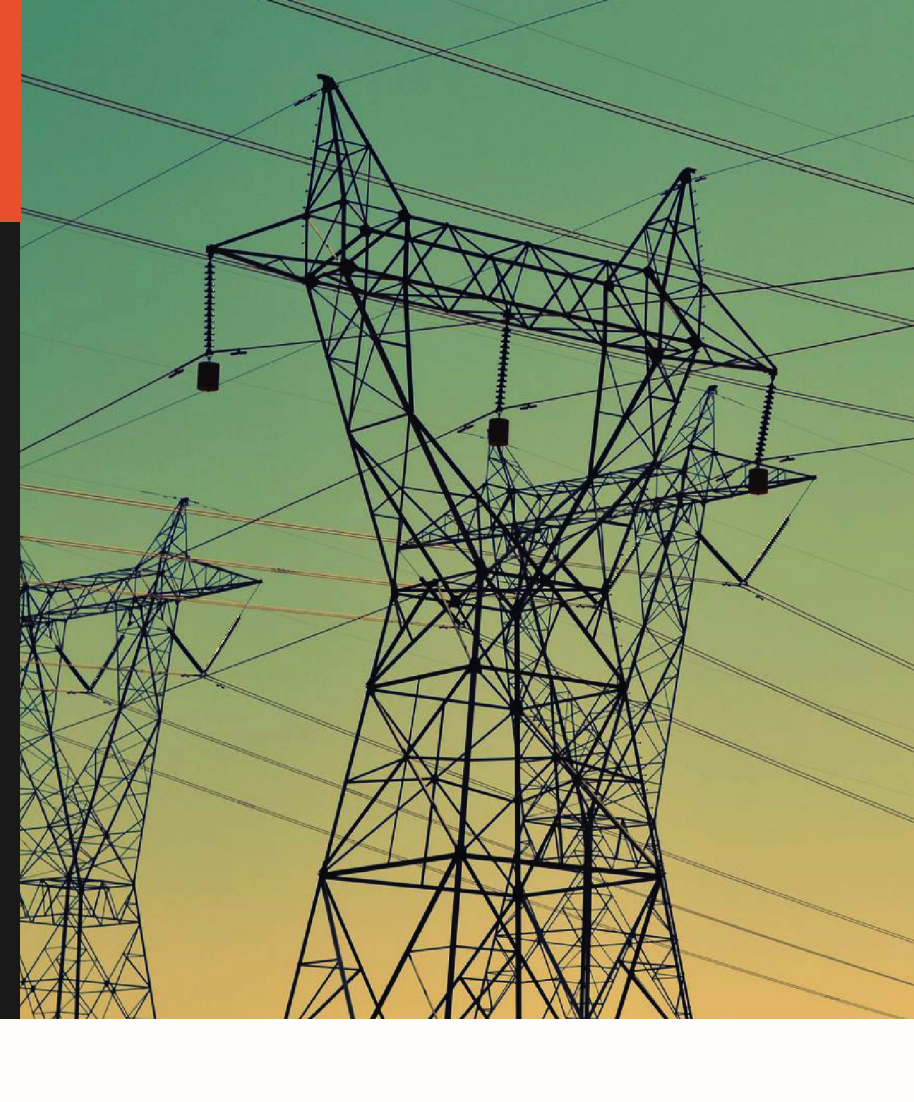
Flexible generation is the ability of a plant to ramp up and down to support system requirements.

## A closer look at PH Power Crisis

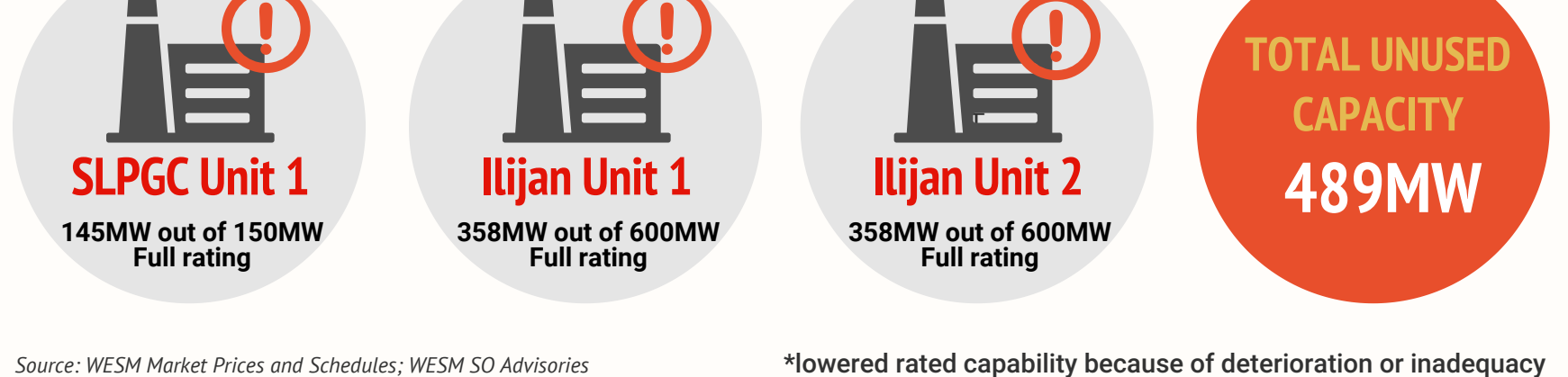
Power Outages and Rates in Luzon, from May to June 2021

## Why did this happen?

Luzon power supply declined by 2000 MW, resulting in rotating brownouts: 500 MW of the decline was due to limited Malampaya gas supply and 1500 MW was because of the unavailability of critical coal plants. This unavailability did not happen by chance. Historical data show specific coal plants experienced several outages of varying length over the past two years.



## COAL PLANTS WITH DERATED\* CAPACITY

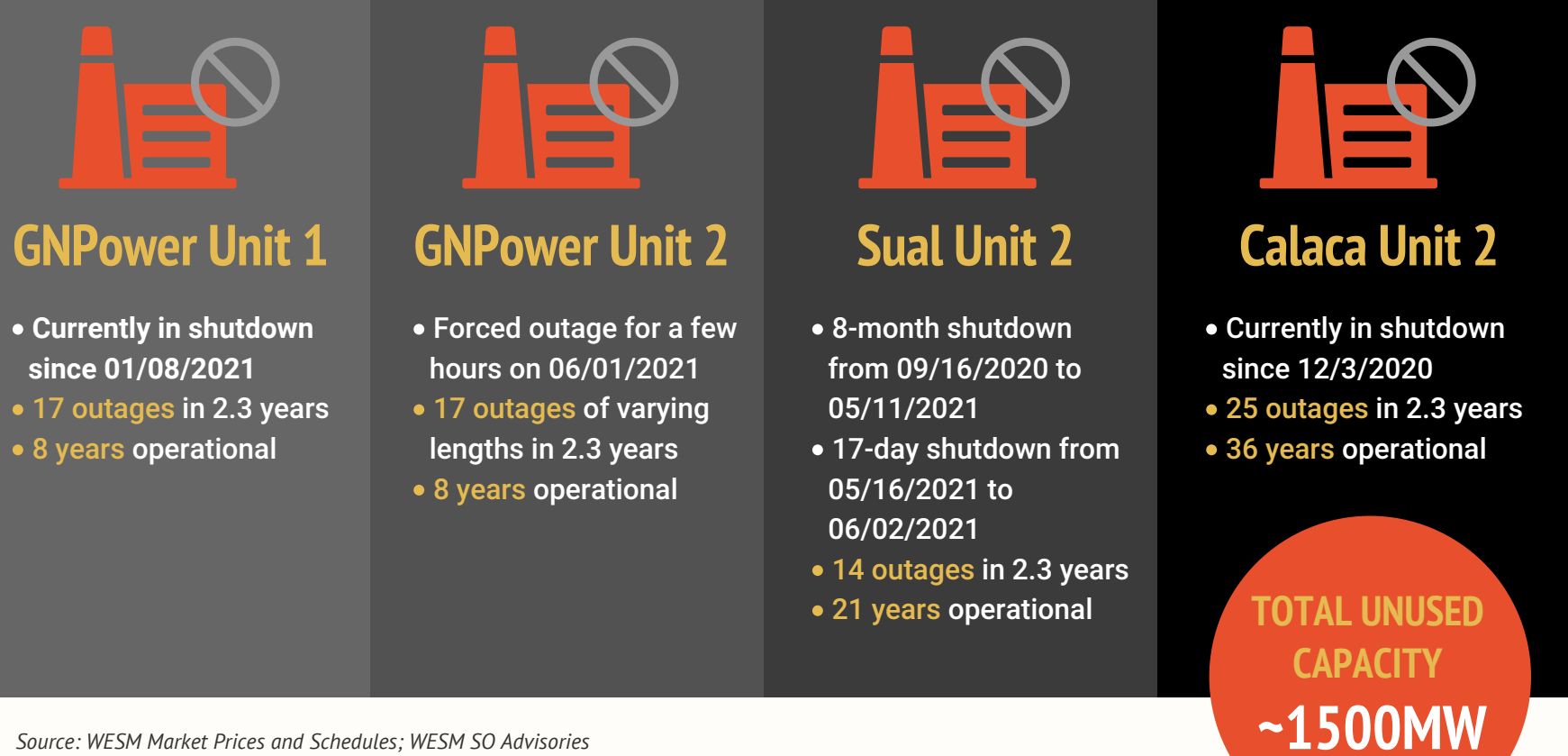


Source: WESM Market Prices and Schedules; WESM SO Advisories

\*lowered rated capability because of deterioration or inadequacy



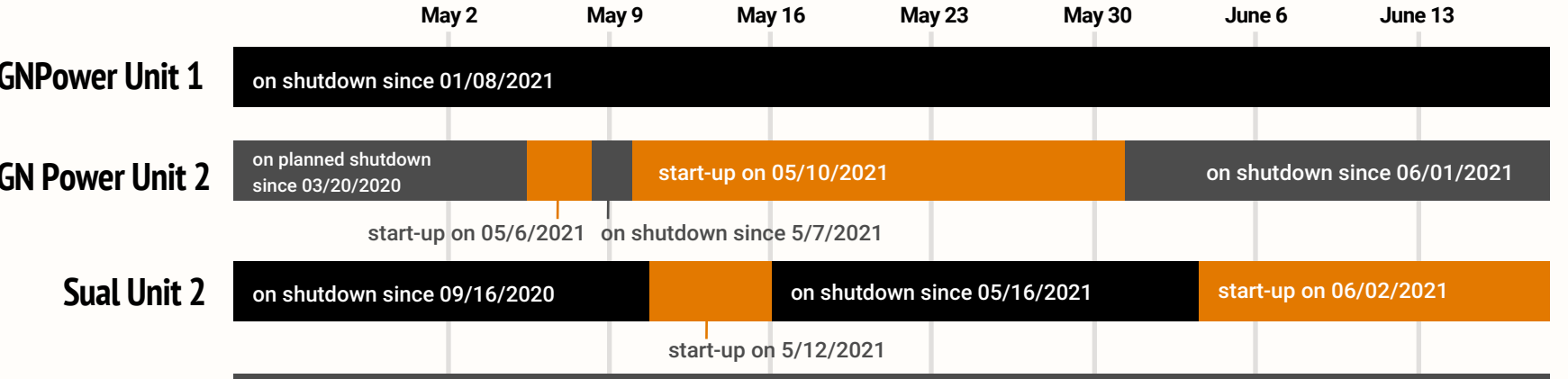
## COAL PLANTS ON SHUTDOWN



Source: WESM Market Prices and Schedules; WESM SO Advisories



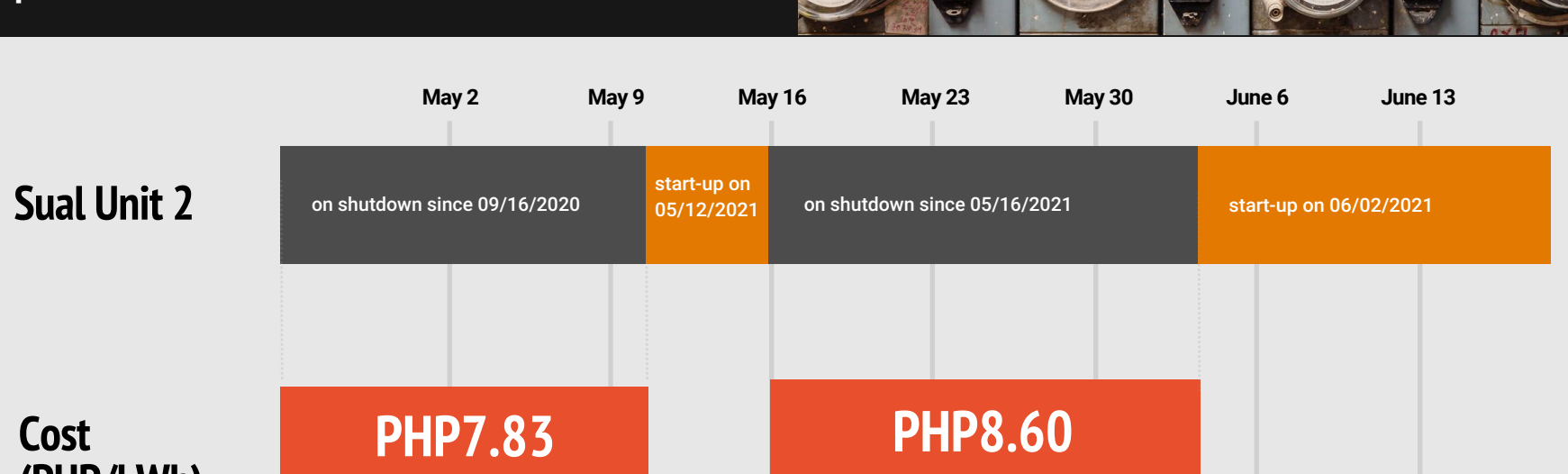
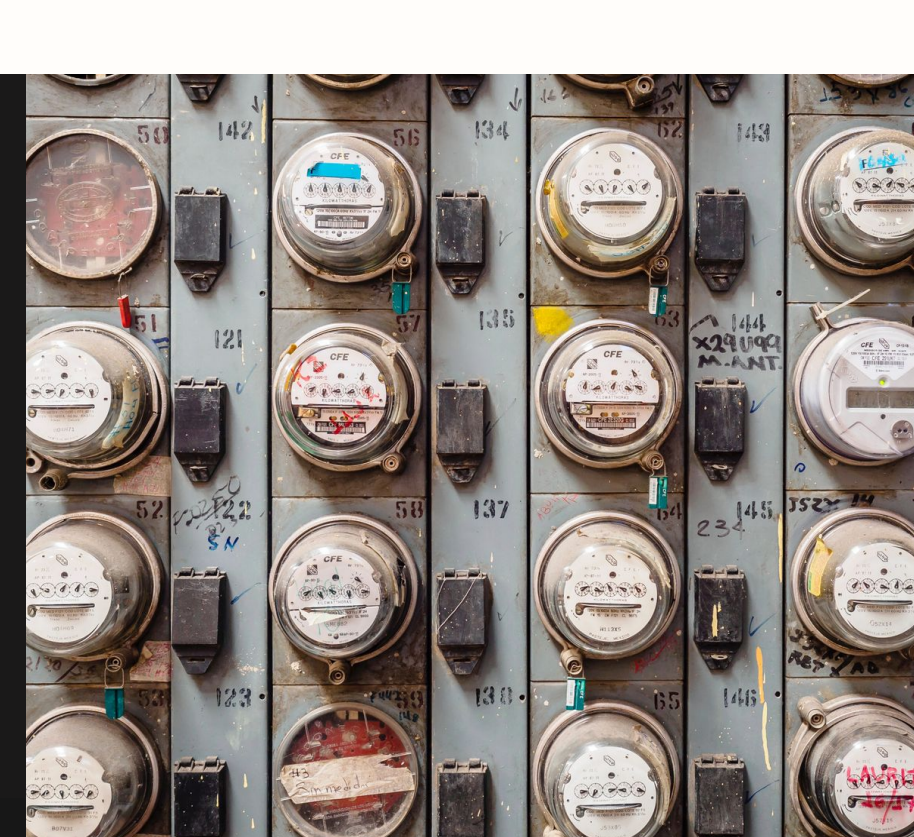
## TIMELINE OF SHUTDOWNS



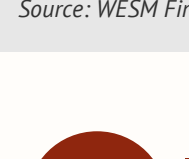
Source: WESM Market Prices and Schedules; WESM SO Advisories

## Why do power rates soar during outages and shutdowns?

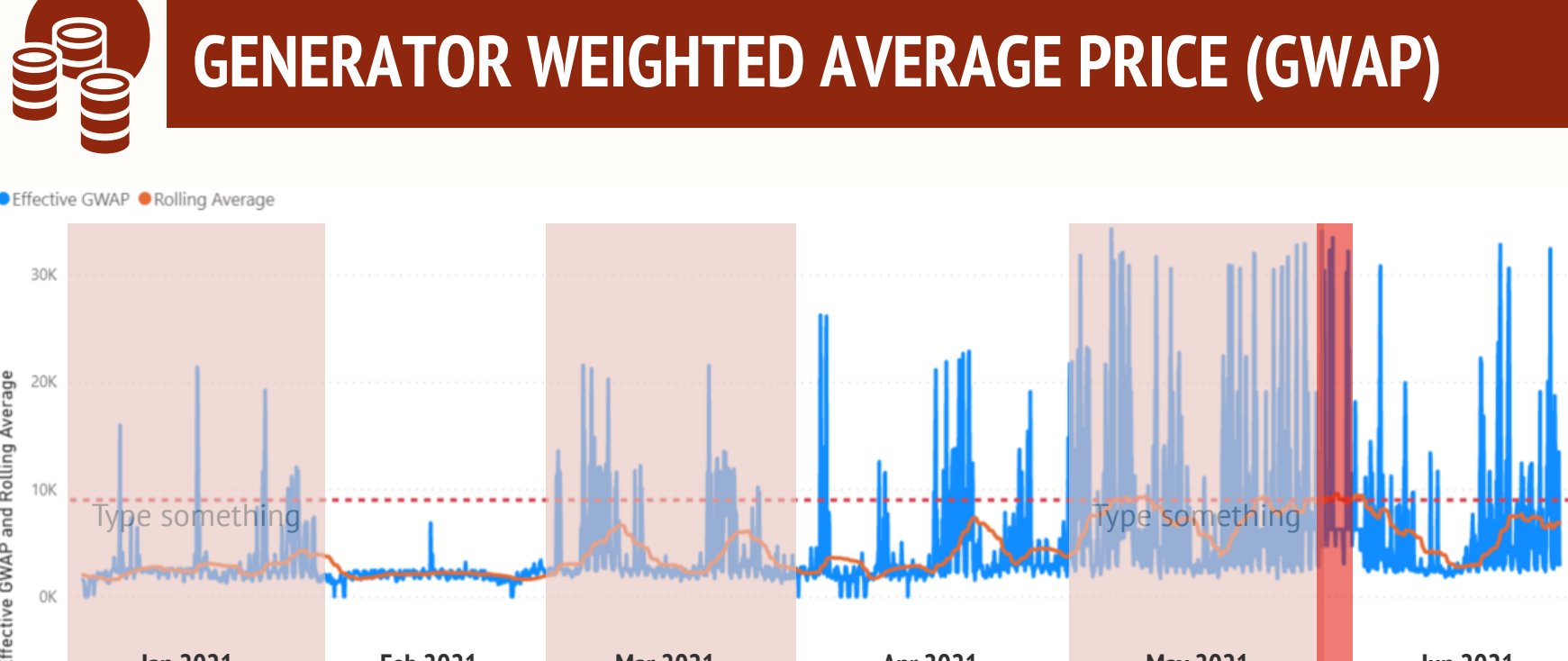
The graph below shows electricity price doubled when the Sual power plant (the largest power station in the Luzon grid) experienced an unplanned shutdown in the summer of 2021. Due to the deficiency of Sual, other more expensive power plants were needed to meet power demand in real time.



Source: WESM Final GWAP



## GENERATOR WEIGHTED AVERAGE PRICE (GWAP)

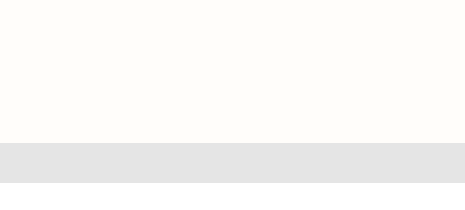


- The Secondary Price Cap Mechanism by the ERC (9000 level, indicated by the dashed line) was triggered multiple times – indicating an abnormally high pricing in the power market.
- GWAP during Summer 2021 is significantly higher than previous GWAP
- GWAP during the May 31- June 1 outage is significantly higher than previous GWAP

Source: WESM Final GWAP

Datasets used: WESM Market Prices & Schedule; WESM Market Bids and Offers; WESM Final GWAP; WESM System Operator Advisories; DOE List of Existing Power Plants

Photos by Fré Sonneveld/Unsplash; Alexander Schimmeck /Unsplash



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