



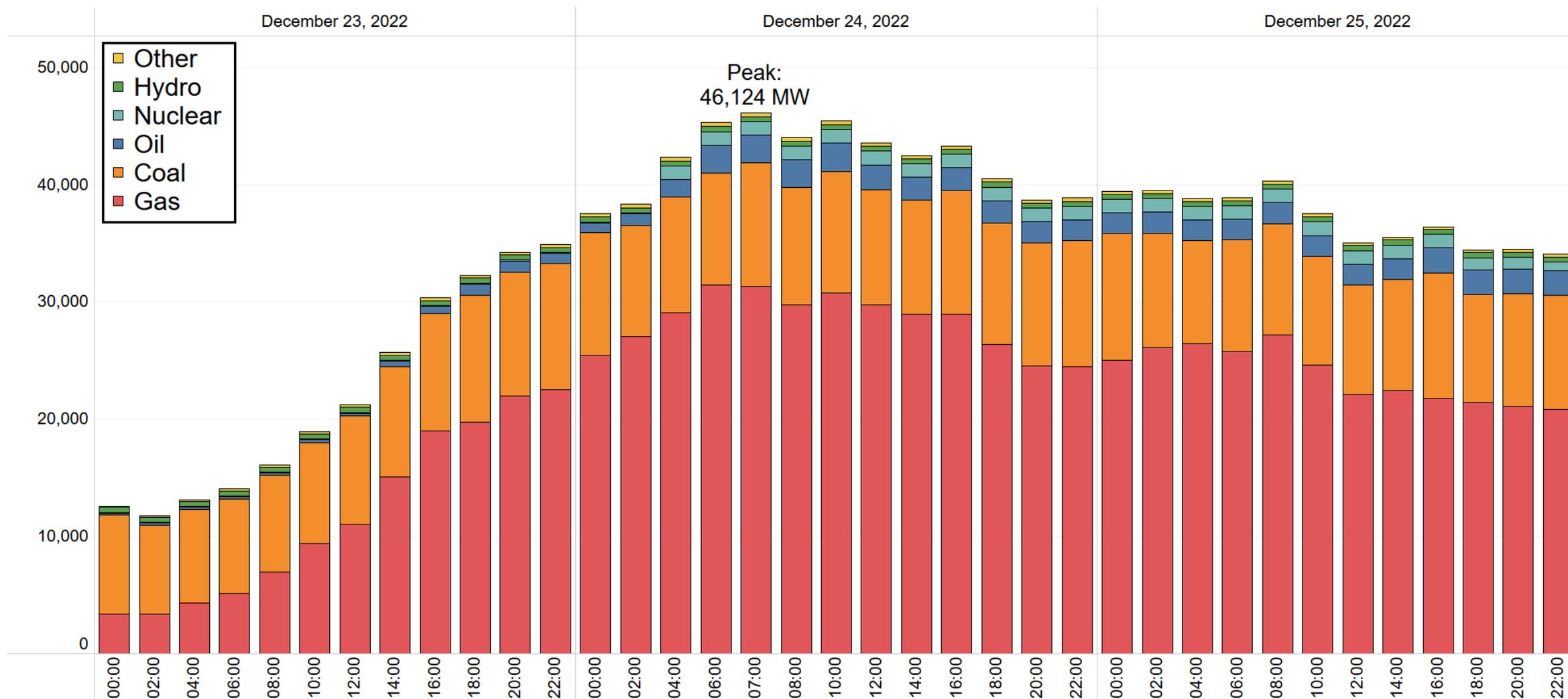
Winter Storm Elliott Continued Outage Analysis

Dan Bennett, Lead Engineer

Operating Committee

March 9, 2023

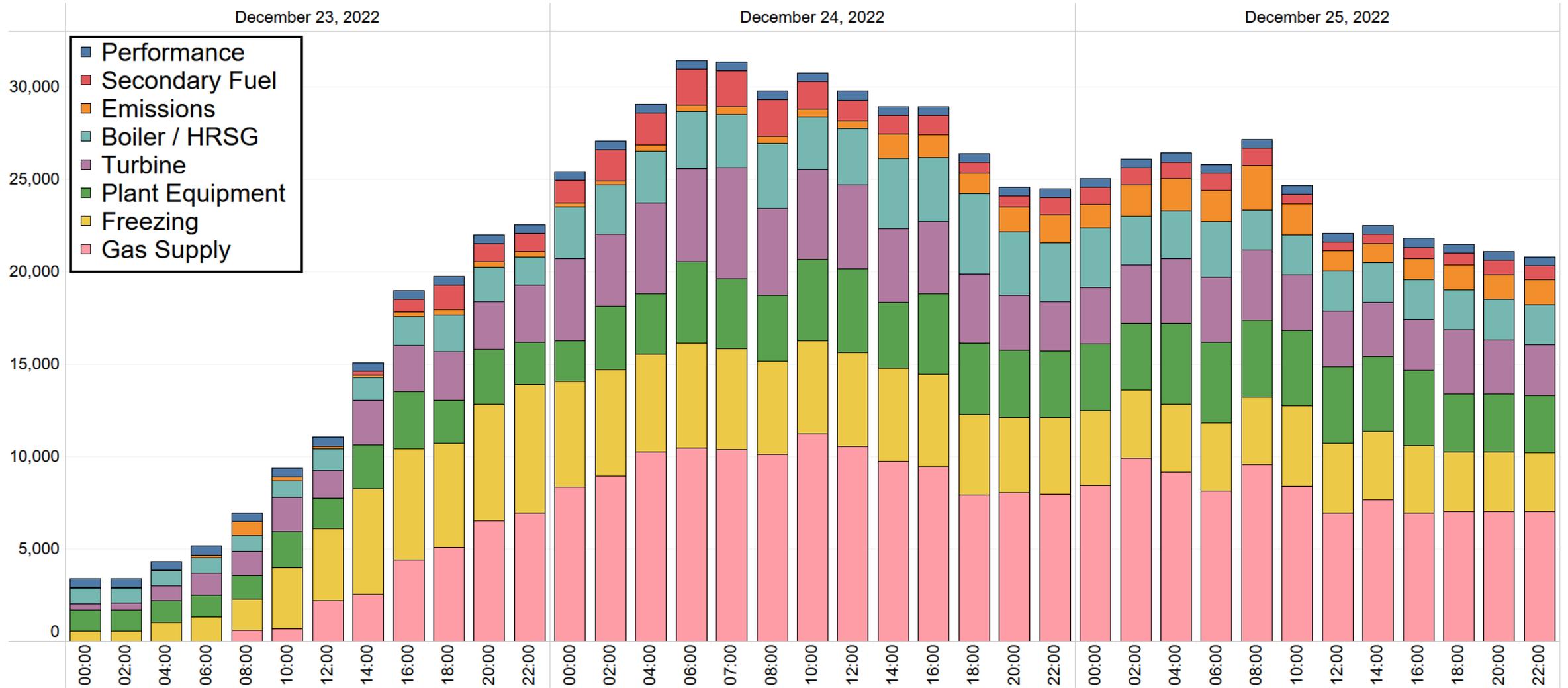
Forced Outages/Derates by Fuel Type



Note: Only even hours are shown for readability with the exception of 12/24/2022 07:00 which was the hour with the largest amount of forced outages and derates

Slide uses GADS data pulled 03/01/2023

Gas - Forced Outages/Derates by Cause

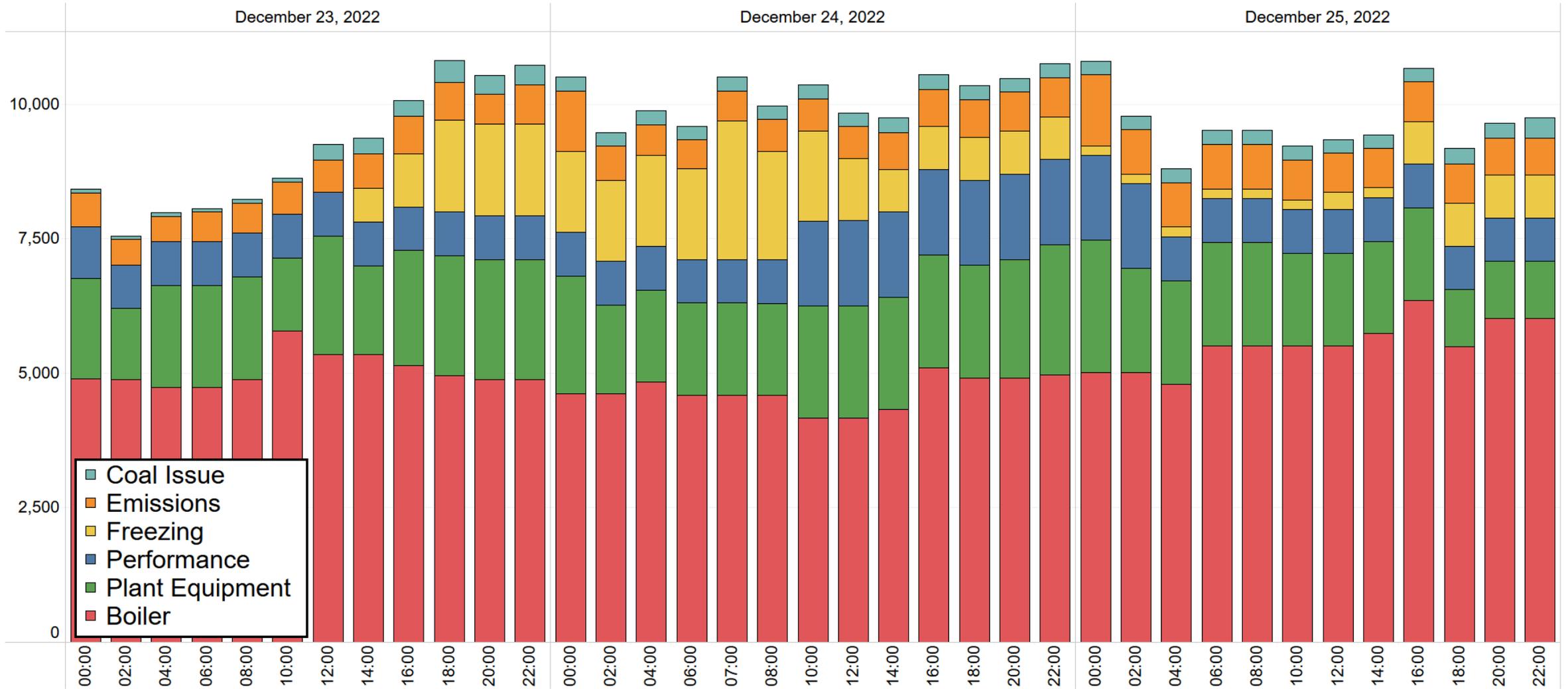


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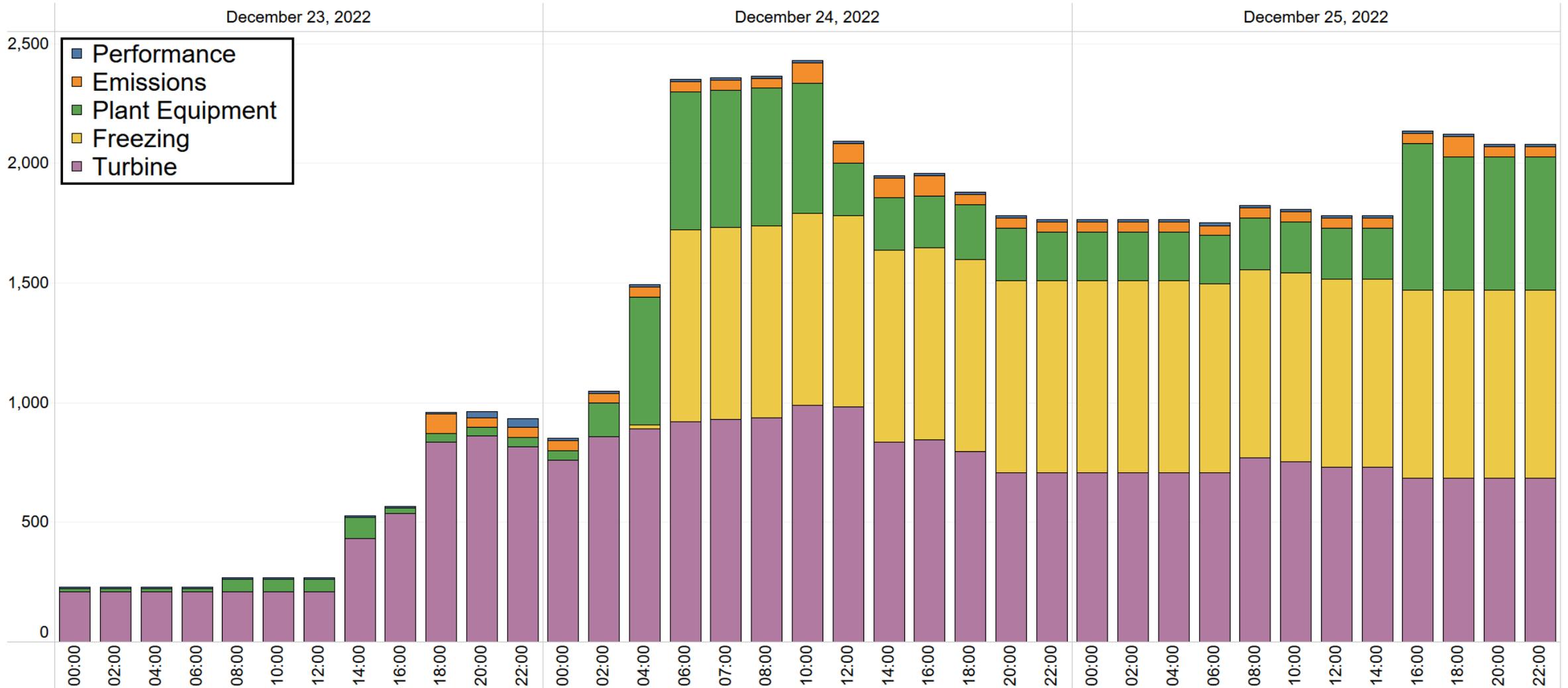
Coal - Forced Outages/Derates by Cause



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Slide uses GADS data pulled 03/01/2023

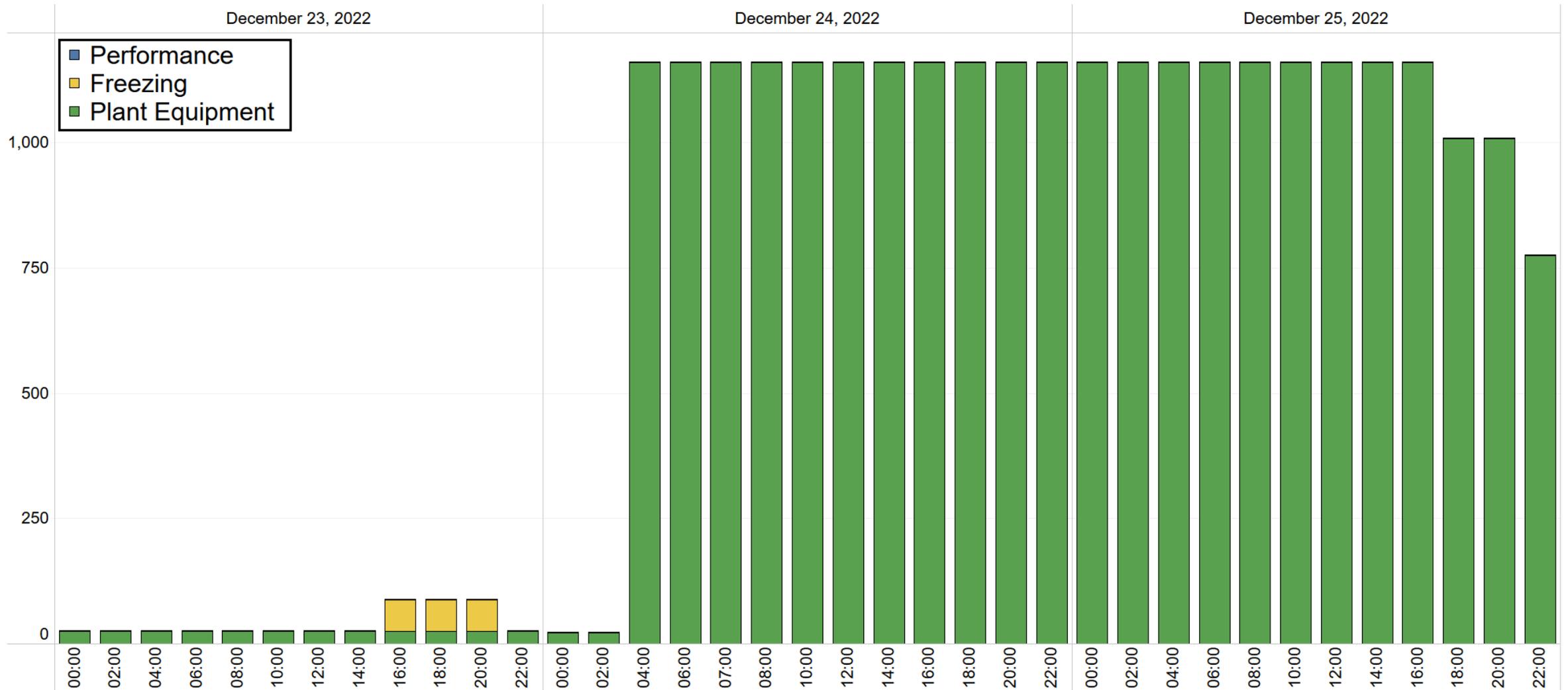
Oil - Forced Outages/Derates by Cause



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Slide uses GADS data pulled 03/01/2023

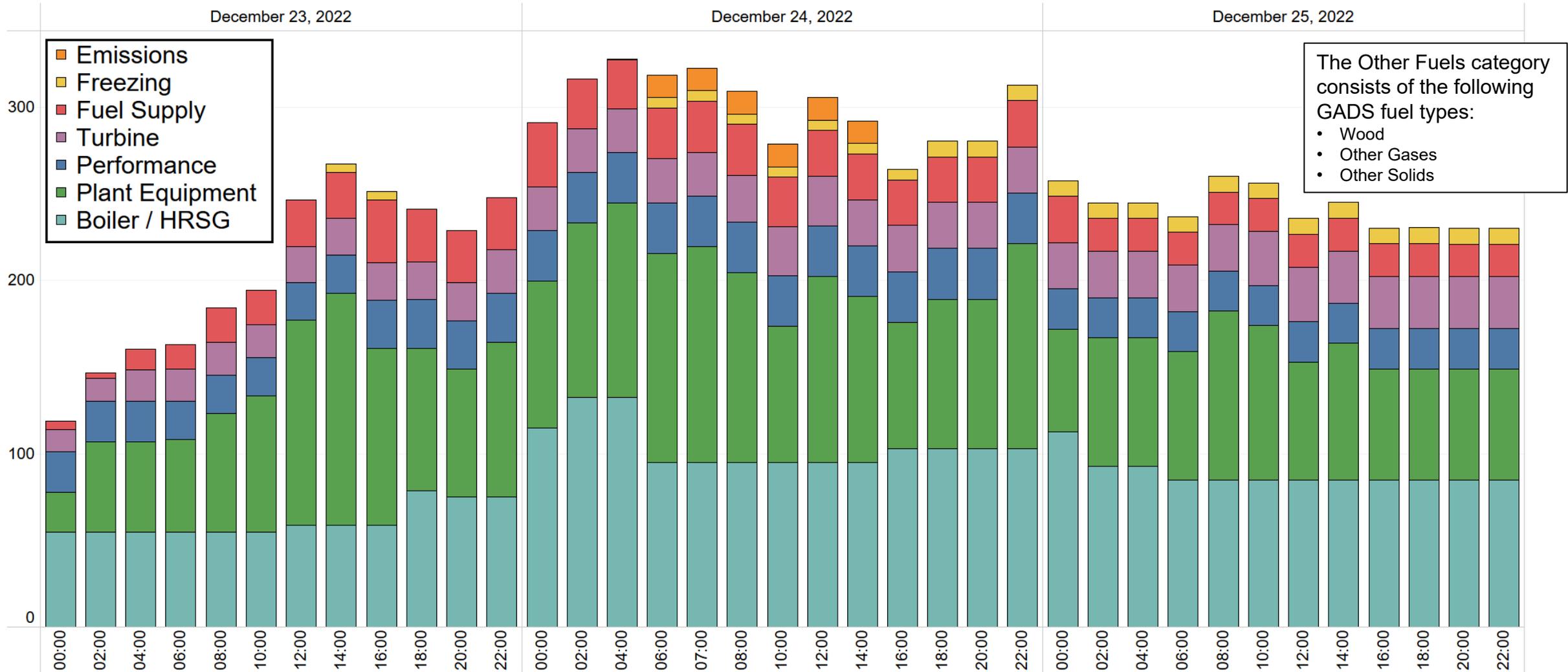
Nuclear - Forced Outages/Derates by Cause



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Slide uses GADS data pulled 03/01/2023

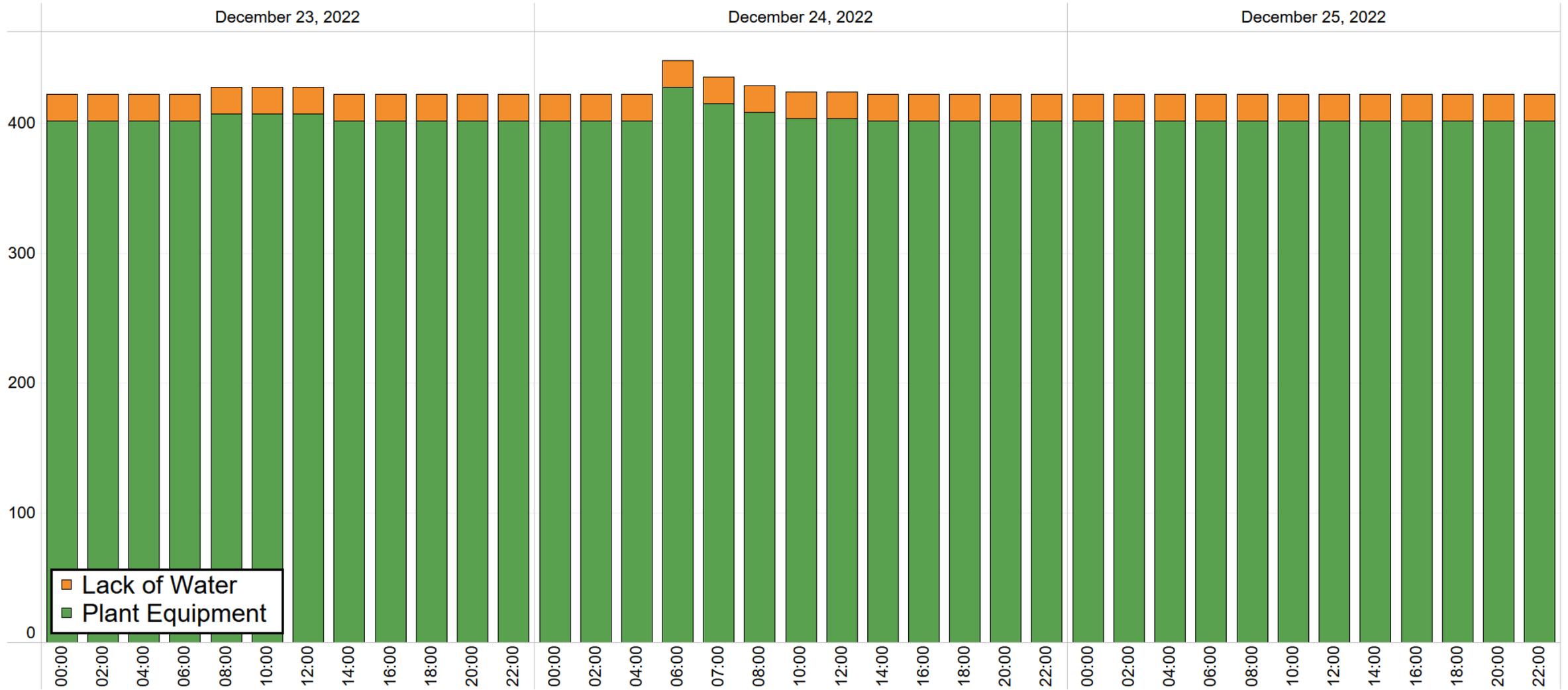
Other - Forced Outages/Derates by Cause



Note: Only even hours are shown for readability with the exception of 12/24/2022 07:00 which was the hour with the largest amount of forced outages and derates

Slide uses GADS data pulled 03/01/2023

Hydro - Forced Outages/Derates by Cause



■ Lack of Water
■ Plant Equipment

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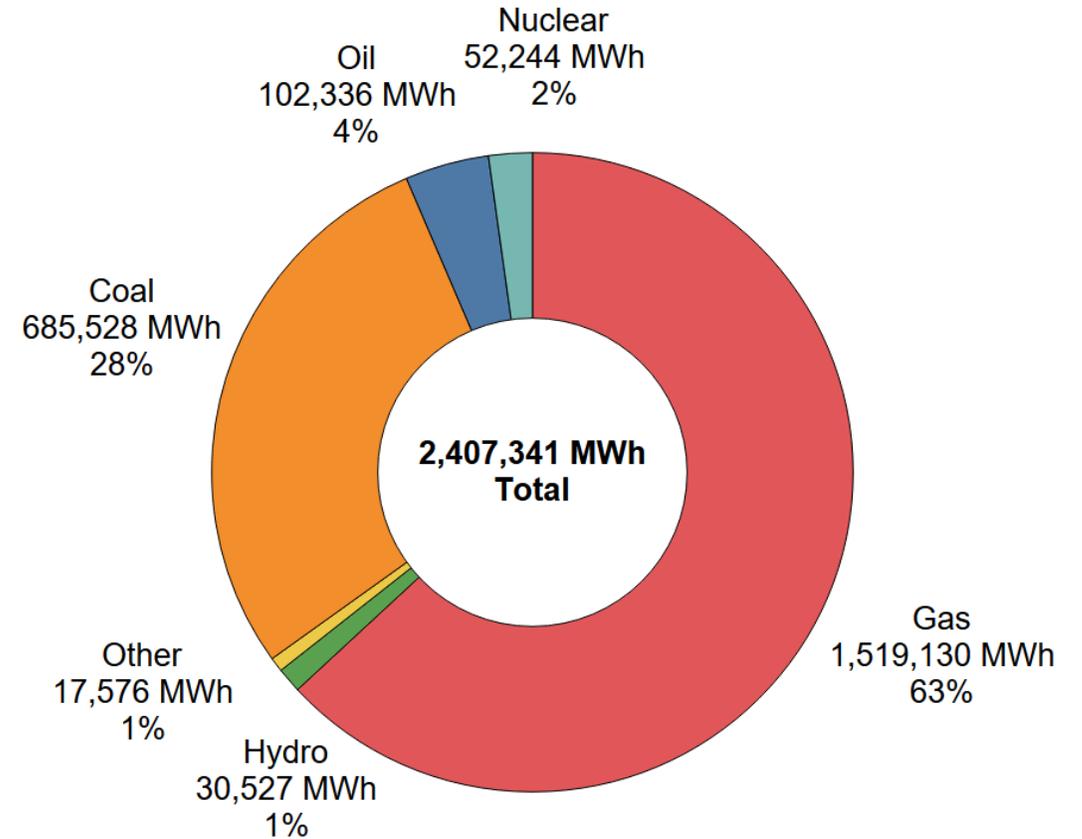
Slide uses GADS data pulled 03/01/2023

To effectively compare resource unavailability by fuel type and by cause during the Winter Storm Elliott event both the reduction and duration of the reduction must be considered.

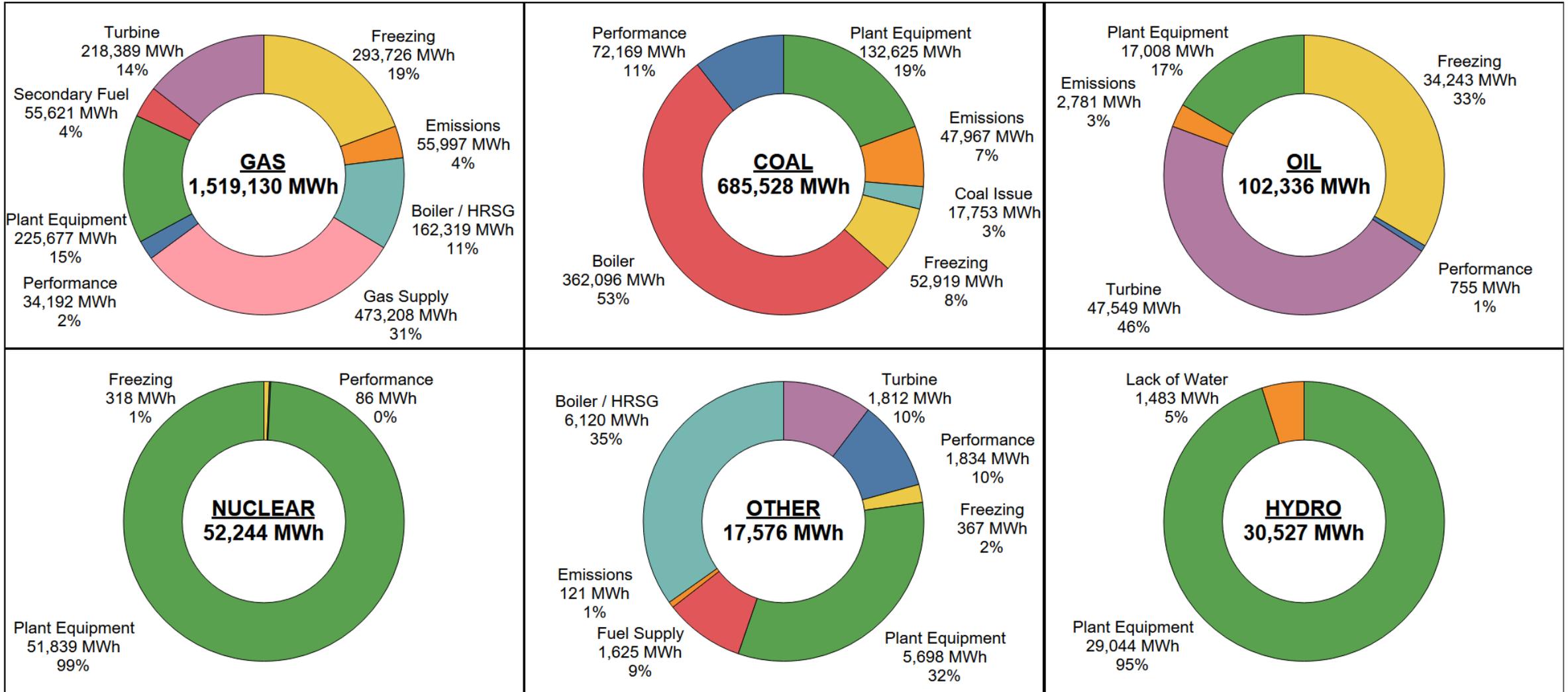
While a 1,000 MW Forced Outage is much larger than a 100 MW Forced Outage, if the 1,000 MW FO only lasts one hour but the 100 MW FO lasts one day then the 100 MW FO is a more significant unavailability.

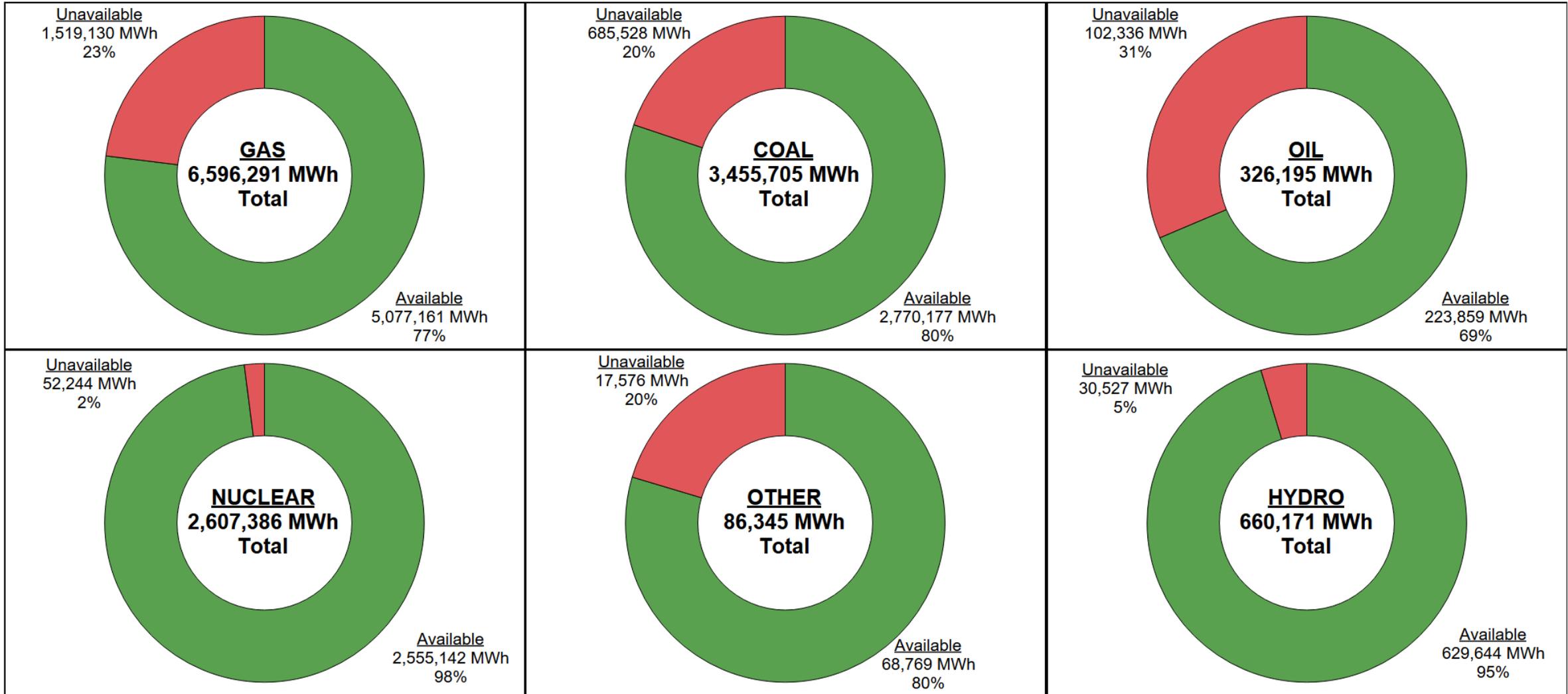
Using MWh as the comparison metric incorporates both the magnitude and duration of the outage to give a more complete picture of the impact.

In the following MWh analysis slides a duration of **12/23/2022 00:00 – 12/25/2022 23:59** is used.



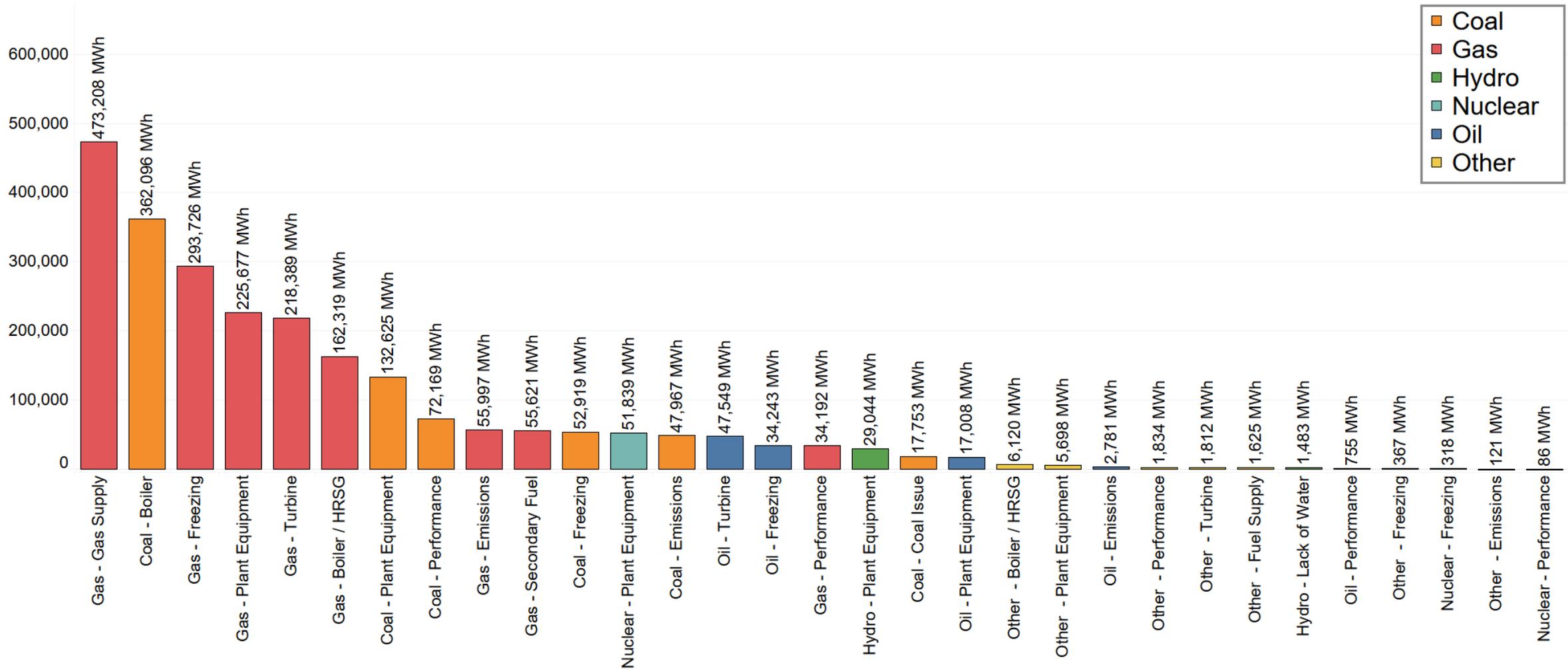
Forced MWh by Fuel Type and Cause



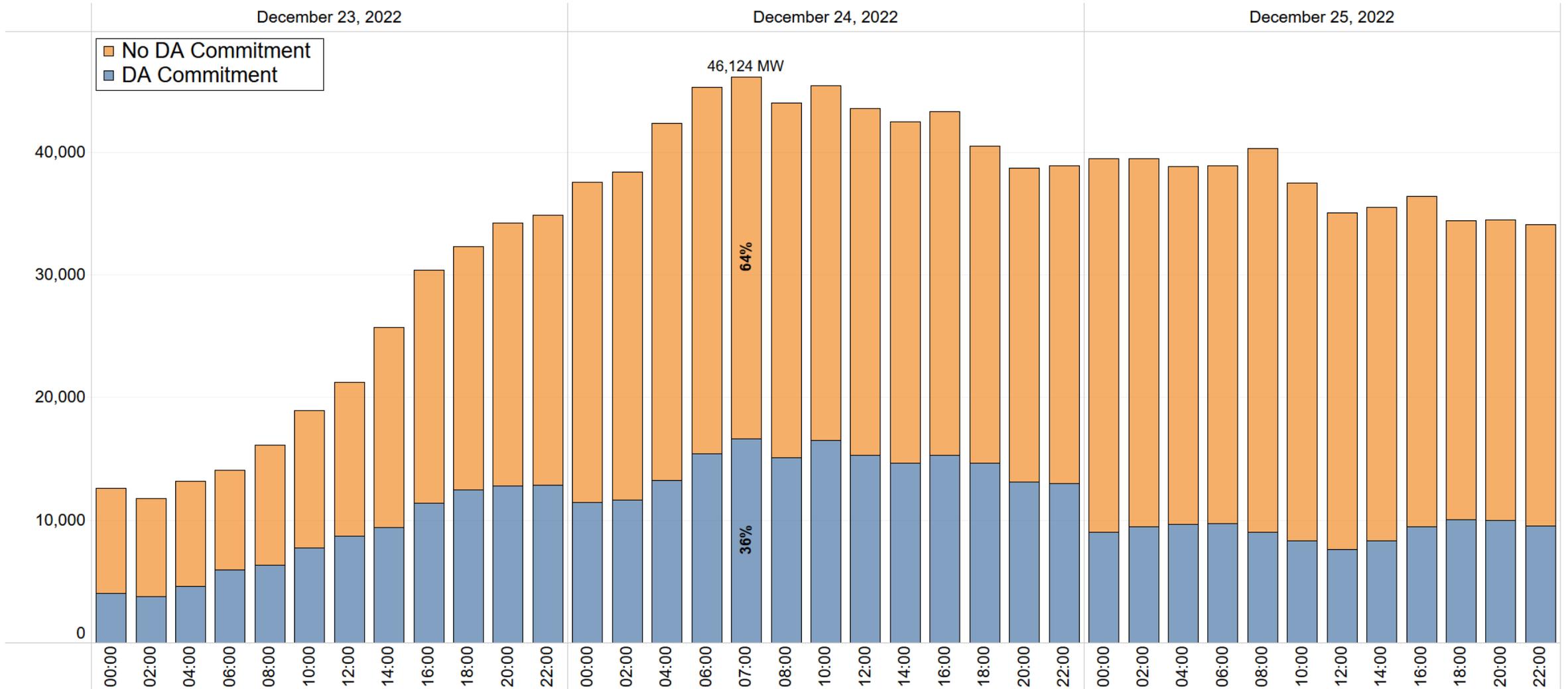


Total MWh = GADS Net Dependable Capacity x 72 hours

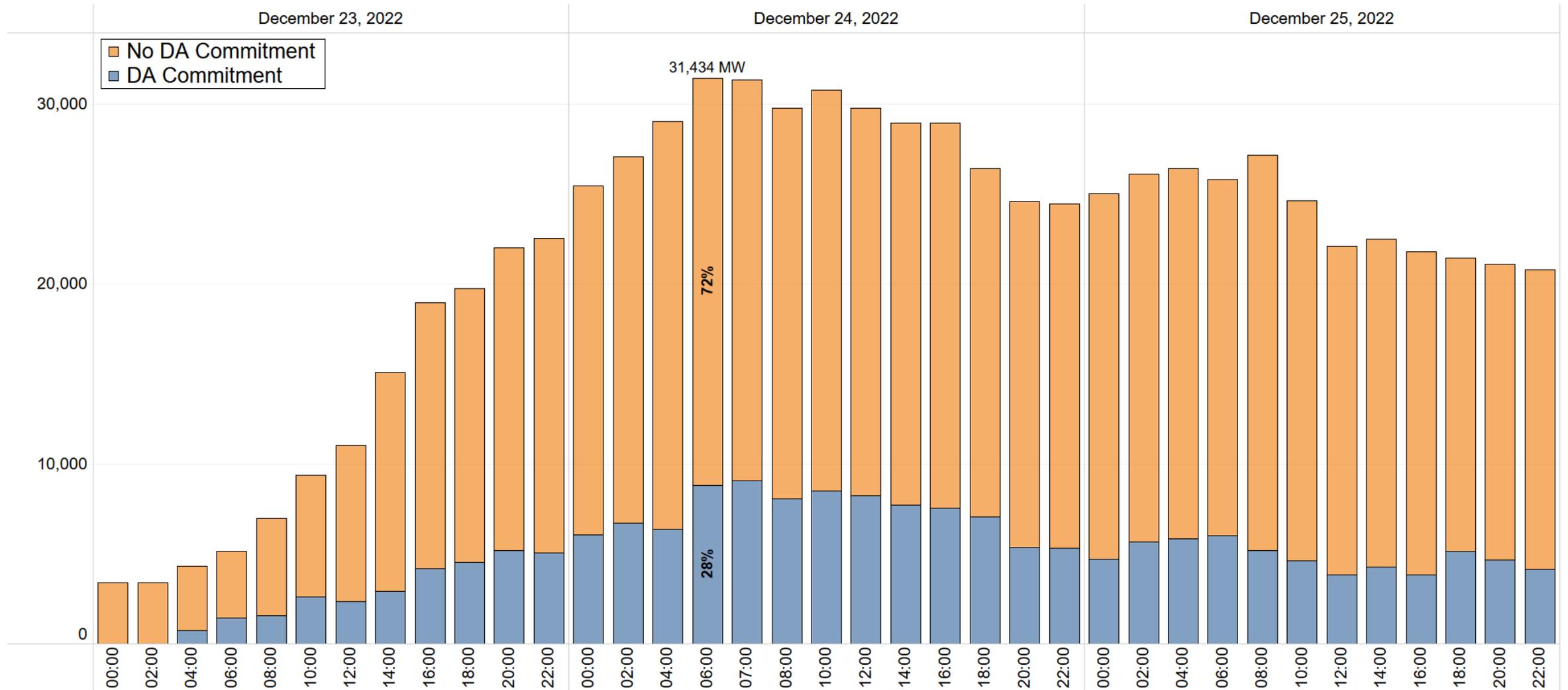
Forced MWh by Fuel Type and Cause



Forced Outages by DA Commitment

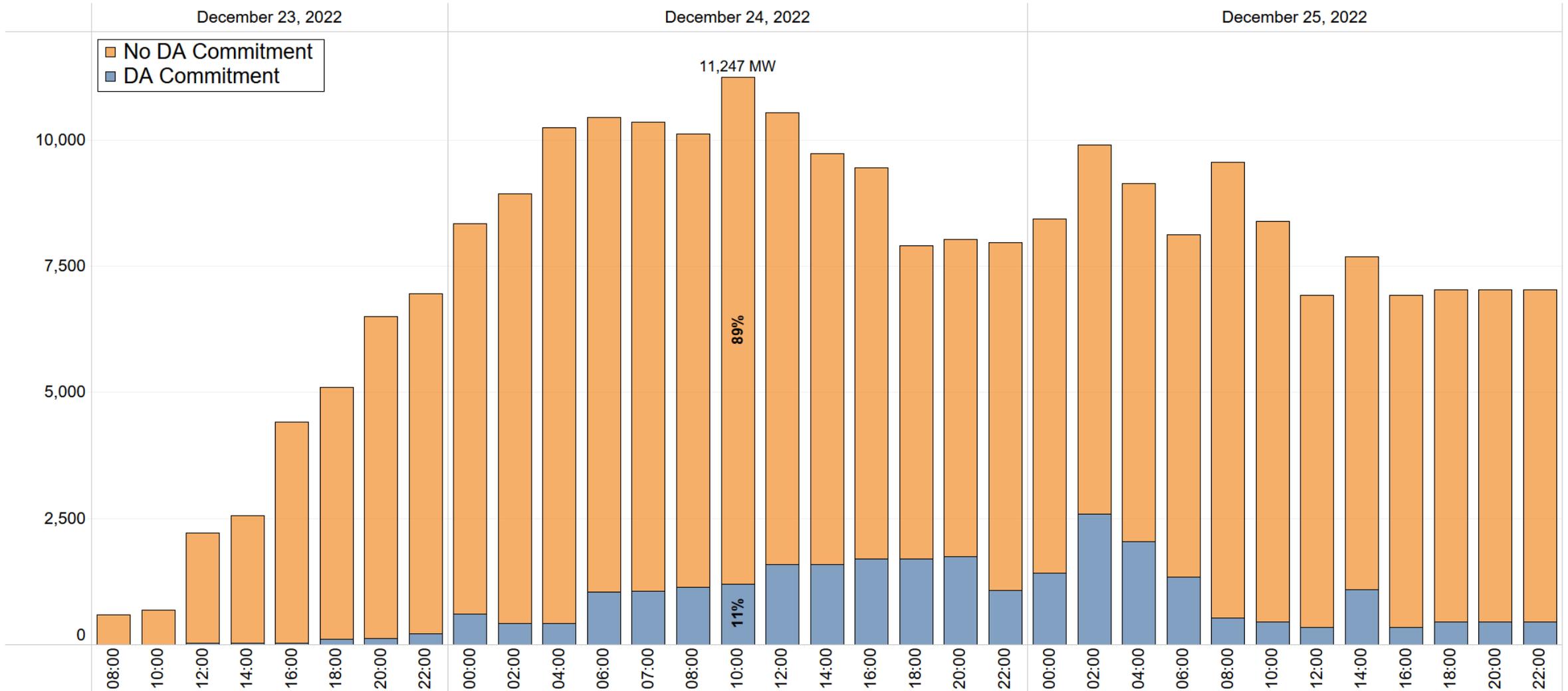


Gas Forced Outages by DA Commitment





Gas Fuel Supply Forced Outages by DA Commitment





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YOU CLICK!**



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