



## 2020 Summer Loads and Resources Assessment results

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# Summer Assessment 2020

- The Summer Assessment process uses a production simulation model that runs 2,000 simulations of varying levels of weather driven load and renewable generation.
- Report for 2020 represents results from 2 cases.
  1. Base case: import limit set to capture most historical import levels.
  2. Moderate sensitivity case: import limit set more conservative levels.
- 2020 load forecast relatively unchanged from 2019.
- CA hydro conditions are below normal – close to 2018 conditions.
  - Snowpack peaked at 63% of average, reservoirs at 101% of average.
  - The Northwest hydro reservoirs projected to be 95% of average.
- Generation additions minus retirements equals 1,432 MW.
  - Effective load carrying capability increase for September is 38 MW.

# General Conclusions

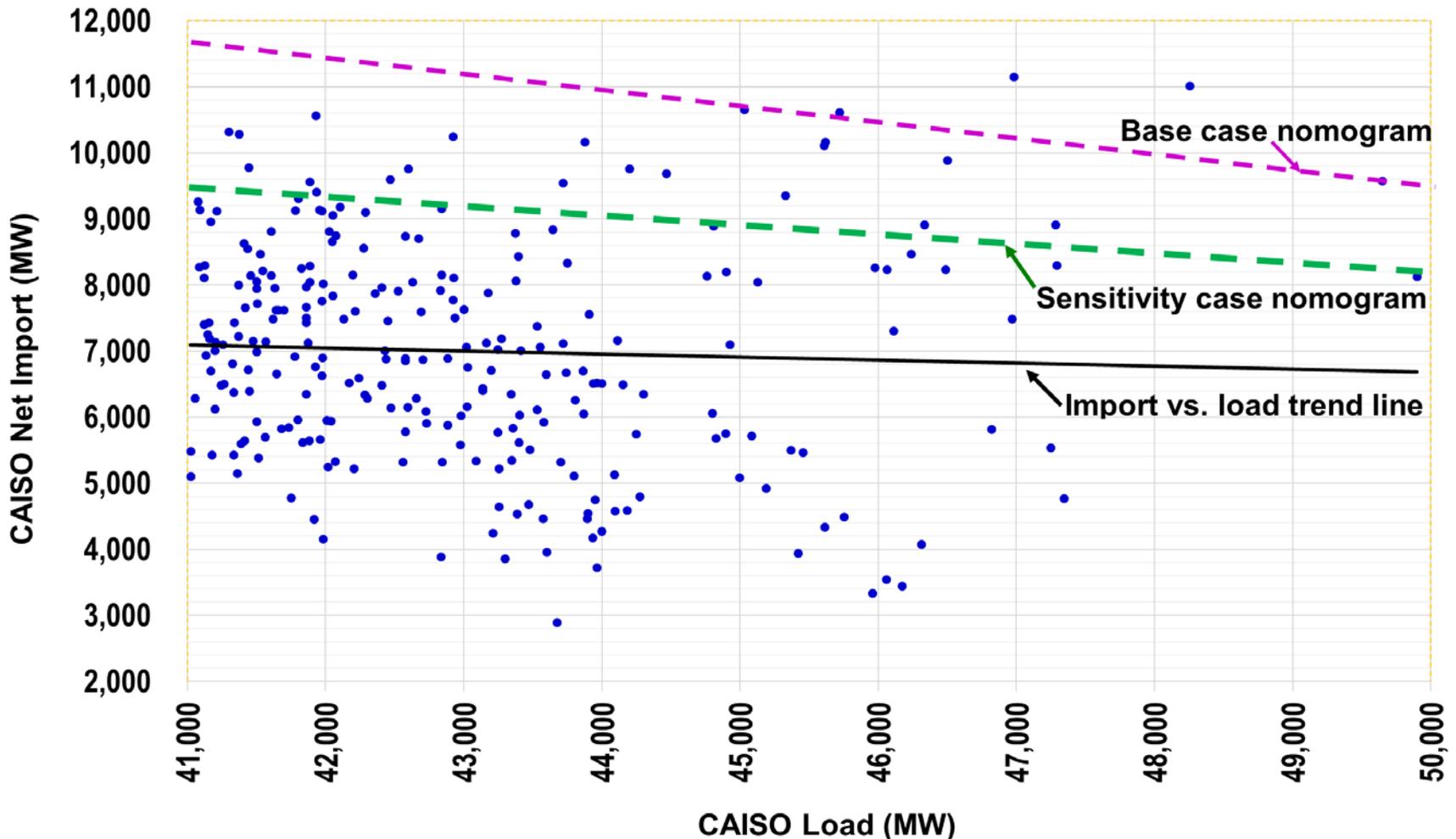
- ISO projects overall adequate supply despite a low hydro year.
  - Resource adequacy levels are similar to the summer of 2018.
  - Tight supply conditions are more likely to occur in late summer when hydropower declines to its summer low levels, particularly in September when solar decreases as well.
- Rooftop solar continues to offset load growth and has pushed the system peak to evening hours when solar is no longer available.
- Reliance on imports increases during the late summer when the impacts of below-normal hydro conditions will be more pronounced.

# Impacts to loads due to COVID-19

- Too many unknowns exist to produce a viable and meaningful COVID-19 load impact scenario.
- The ISO has experienced load reductions of 5 to 8 percent on weekdays, and 1 to 4 percent on weekends, with the largest reductions occurring over the morning peak hours.
- 2020 summer air conditioning loads have started materialize and to date show no decrease in evening peak demands.
- While the ISO does recognize there are likely to be lasting effects from COVID-19 throughout the 2020 summer period, there is not enough data to forecast the magnitude and hourly profile of those impacts.

# On-peak net import cap nomograms for base case and conservative imports sensitivity

## CAISO Net Import vs CAISO Load

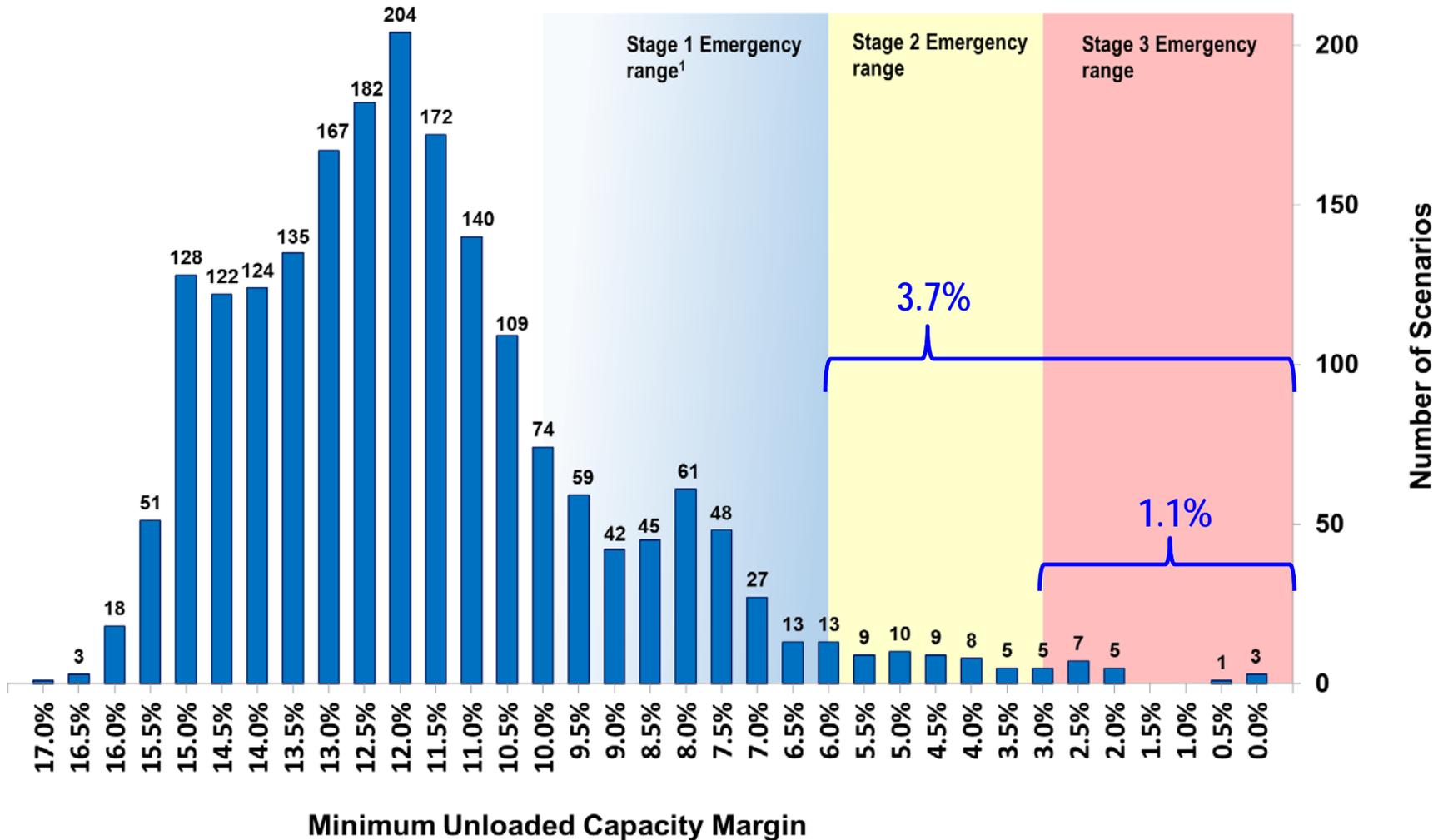


# Import limit impacts the probability of a system capacity shortfall

## Probability of ISO system capacity shortfall

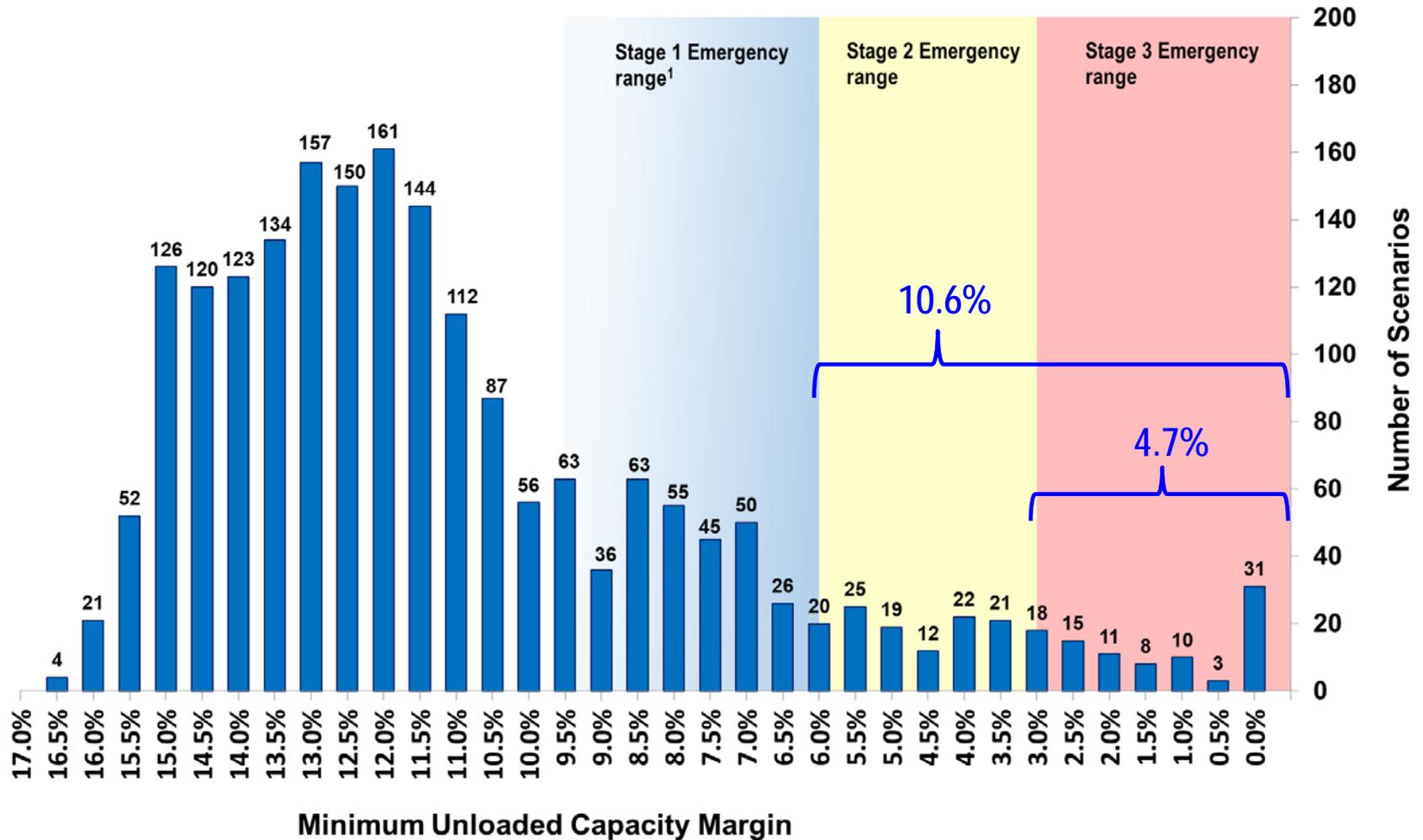
<b>Result</b>	<b>Base Case</b>	<b>Sensitivity Case</b>
<b>Stage 2</b>	<b>3.7%</b>	<b>10.6%</b>
<b>Stage 3</b>	<b>1.1%</b>	<b>4.7%</b>
<b>Unserved energy</b>	<b>0.2%</b>	<b>1.6%</b>

# Base case: minimum unloaded capacity margins



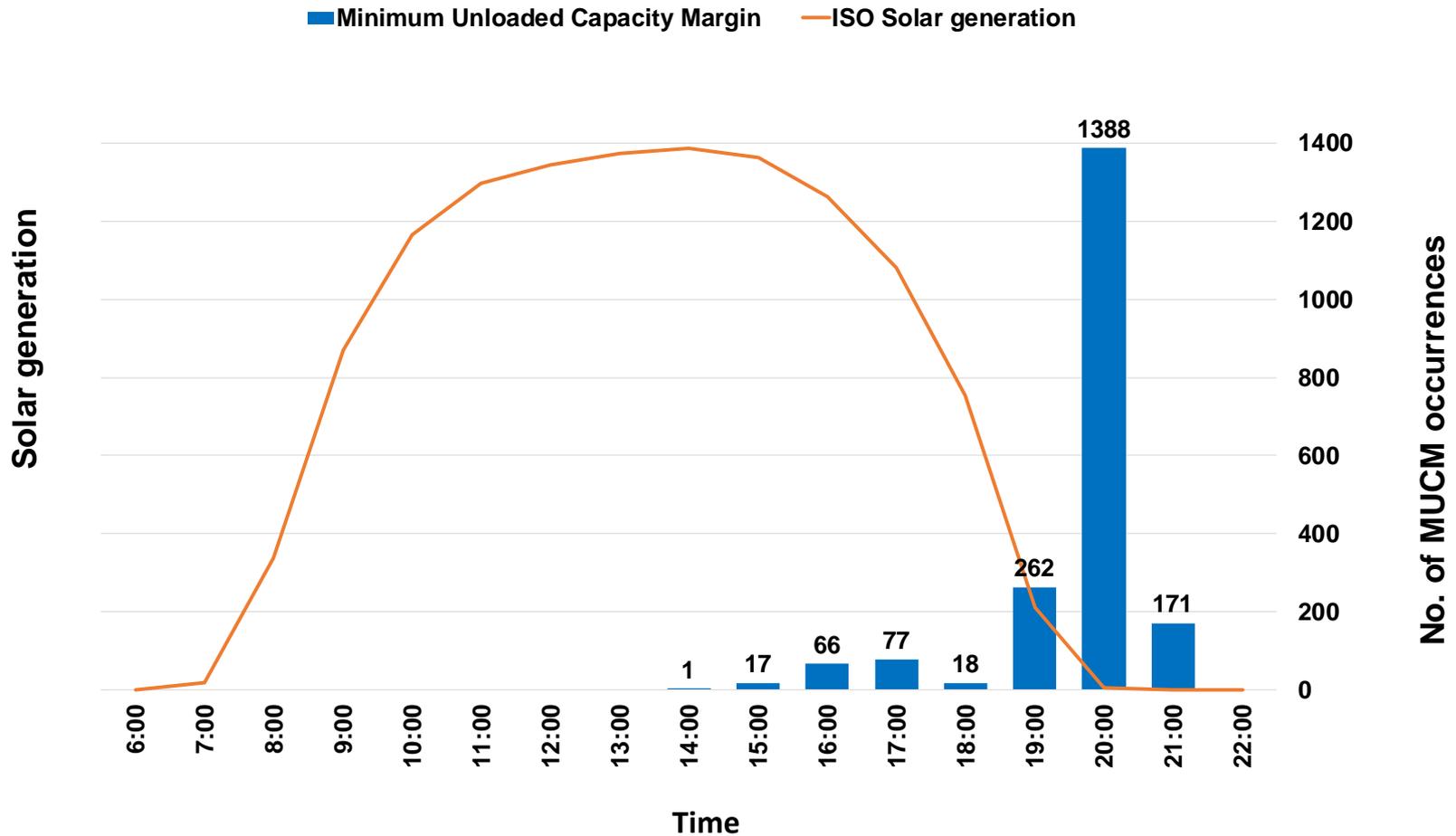
<sup>1</sup>Stage 1 range is approximate

# Conservative import sensitivity: minimum unloaded capacity margins

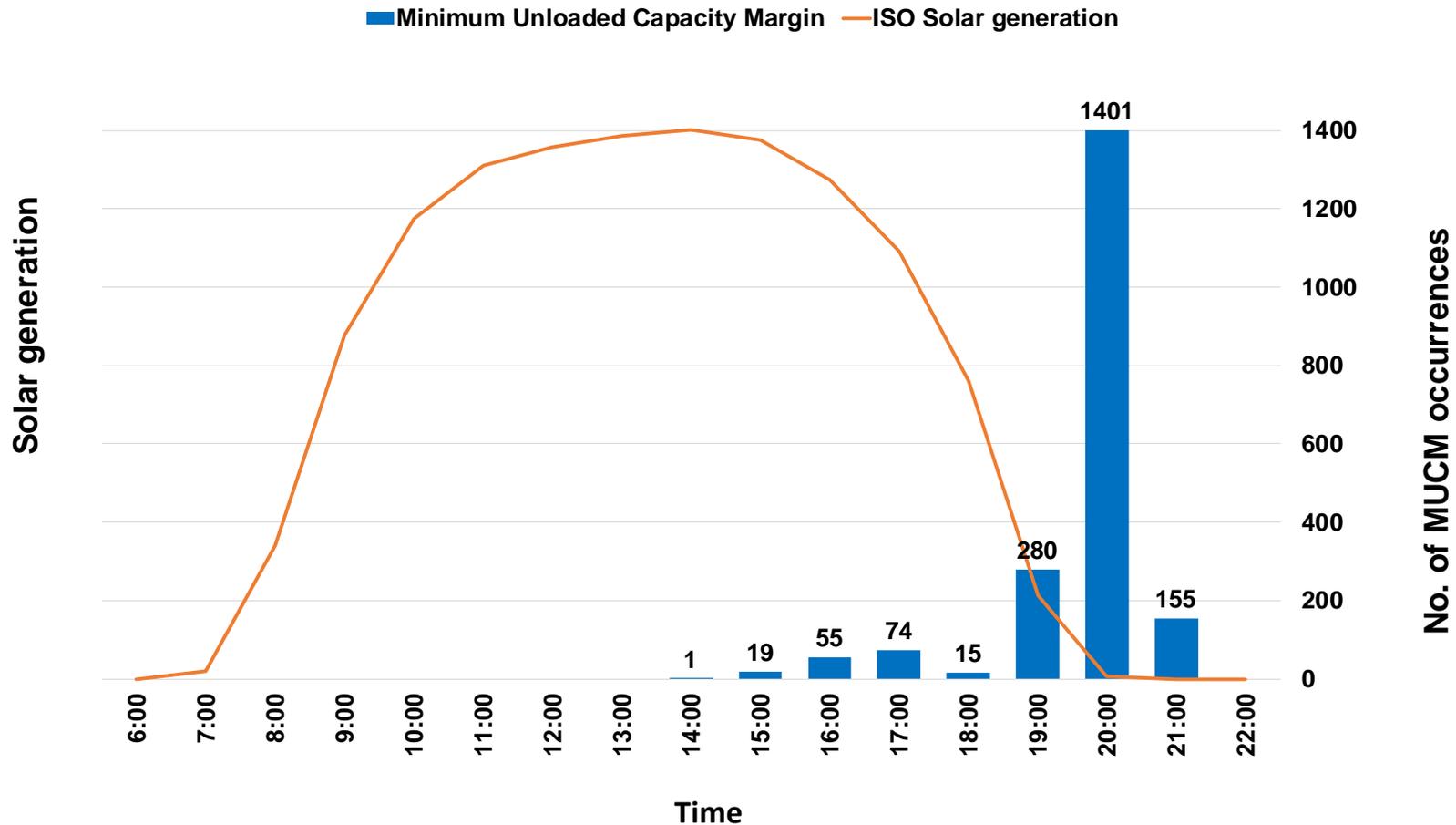


<sup>1</sup> Stage 1 range is approximate

# Base case demonstrates highest risk when solar is unavailable



# Conservative case confirms highest risk when solar is unavailable



# Conclusions

- Compared to our projections in 2019, this summer poses somewhat increased risk of conditions that could result in operating reserve shortfalls.
- Overall, adequacy levels are similar to the summer of 2018, with similar hydro conditions.
  - Adequate imports may be critical in late summer when the impacts of below-normal hydro conditions are more pronounced.
  - A late summer heat wave, especially if wide spread and impacting imports, would be particularly challenging.
- Adequacy levels are most challenged in the post-solar window, as reductions in the gas fleet have not yet been offset by sufficient storage to offset the loss of capacity available in that window.