

## 2021 Summer Loads and Resources Assessment Results

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May 24, 2021 11 a.m. – 12 p.m. Pacific

#### 2021 Summer Assessment

- The Summer Assessment process uses a production simulation model that runs 2,000 simulations based on historical renewable generation profiles and a range of 182 hourly load profiles based on historical weather data
- Two simulation cases were studied:
  - 1. Base case: Import limit set to capture most historical import levels
  - 2. Sensitivity case: Monthly import limits set to the 6-year average of the resource adequacy imports procured for each summer month
- The results predict the risk of needing to call on extraordinary measures to reduce load that can be accessed under emergency or extreme conditions
- The 2021 report also presents results of a deterministic "stack analysis" of September 2021



#### 2021 Summer Assessment key points

- The ISO anticipates supply conditions in 2021 to be better than 2020
  - Potential challenges can arise if an extreme heatwave affects a substantial portion of the West, reducing the availability of imports into the ISO
- Supply conditions are improved over 2020 with roughly 2,000 MW of new resources, plus an additional 1,000-1,500 MW of other expedited procurement not included in the simulations
  - However, we are in the second year of significantly lower than normal hydro conditions
- Load forecast: 1-in-2 relatively unchanged from 2020 (45,835 MW)
  - However, 1-in-10 loads are significantly higher

Summer 2020 Summer 2021 Compared to a 1-in-2 forecast: Compared to a 1-in-2 forecast: 1-in-5 remains 4% higher 1-in-5 was 4% higher

- 1-in-10 was 6% higher

- 1-in-10 is 11% higher
- The historical weather data shows that the probability of an extreme weather event is increasing and the 1-in-10 forecast is one indicator of the increasing likelihood of experiencing significantly higher than average load levels

#### **Stochastic Modeling Results**

 Results are improved over 2020, but the conservative net import sensitivity study shows reduced levels of net imports during high demand conditions significantly affects system reliability

Result	Base Case	Sensitivity Case
Stage 2	6.4%	14.1%
Stage 3	4.8%	12.5%
Unserved energy	4.6%	12.4%

Probability of ISO system capacity shortfall

 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



### Base case demonstrates risk is highest when solar is unavailable



# Stack analysis further demonstrates reliance on imports during September





#### Conclusions

- Overall, capacity conditions are better compared to 2020
  - but the grid remains vulnerable to high loads and availability of imports during widespread heat events,
  - Low hydro conditions increase risk, particularly in late summer
- Added storage and retaining 400 MW of generation through the reliability must-run process improves expected performance for 2021
  - Projected new storage additions expected to be effective at supporting system capacity needs during post solar hours
- The probability of an extreme weather event is increasing which will result in managing higher load levels more frequently
- Improved awareness, communication, market tools and development of contingencies measures will help to increase system reliability if extreme conditions arise

