WATER & POWER
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How TID Kept the Lights On
August 2020 Heat Wave

Sustained high temperatures, coupled with wildfires burning throughout the state caused a strain on generation resources, and triggered an emergency situation for the CAISO grid. The organization declared a Stage 2 power emergency and called upon utilities to shed load. Turlock Irrigation District, however, is its own Balancing Authority and not reliant on the ISO, was well positioned during the August 2020 CAISO grid emergency and took early action to minimize the risk to TID's grid while providing support to the CAISO.

August 14 -18, 2020 Rolling Outage

TID first noticed a potential issue on August 13, 2020 when energy traders analyzed the Day Ahead market and took immediate steps to minimize impact to the grid and TID customers.

Operational changes:

TID hydro generation is regularly based on prioritizing irrigation and environmental releases. During the heatwave, **TID made operational adjustments at both Don Pedro and the Turlock Lake regulating reservoir, allowing favorable power generation to meet demand without sacrificing irrigation water availability for growers, resulting in an increase of 2,000 MWh** over the course of the event.

TID dispatched its natural gas baseload and peaker plants to maximize efficiency.

TID reduced ISO imports to reduce capacity shortage in the ISO, and to limit TID's exposure to curtailments from the ISO. TID:

- Split Day Ahead purchases between the Northwest and CAISO to protect against large curtailments.
- Made additional Northwest purchases in the Hour Ahead market to create more generation reserve in anticipation of potential CAISO curtailments.

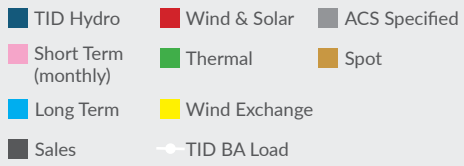
Wildfires, including the SCU Complex Fire in the western portion of TID's service area, added uncertainty to the situation and concern over transmission assets.

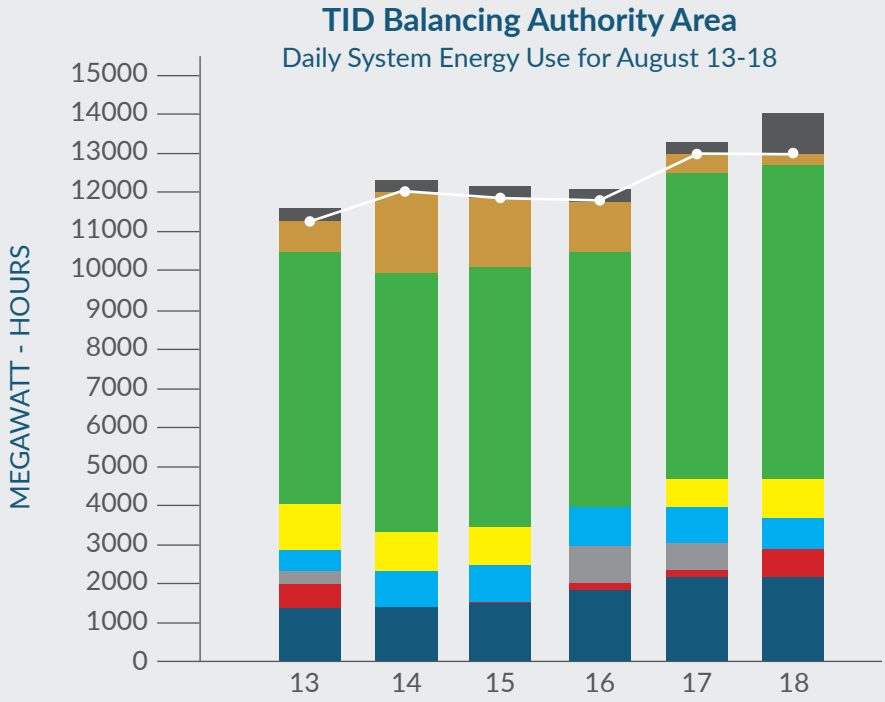
TID Background

- Established in 1887 (First Irrigation District in the state).
- TID owns its water supply and distribution system. It is not part of the state or federal projects.
- TID owns and operates an integrated electric generation, transmission and distribution system that serves more than 100,000 customer accounts within a 662 square-mile area.
- TID provides electricity and water to some of the most productive agricultural regions in the world, making reliability even more essential to protect the state's food chain and agricultural economy.
- TID is a Balancing Authority with requirements to provide moment-to-moment reliability to its customers, which directly impacts the type of generation TID owns and operates.
- TID operates with a 15% Planning Reserve margin.
- TID has a diverse portfolio that includes wind, solar, geothermal, small hydro, biomass, natural gas and large hydroelectric.
- TID's transmission investments give the District access to alternative power supplies in the Northwest and Southwest.

Following the Governor's Executive Order, TID made preparations to operate its generation units outside of permitting requirements if absolutely necessary. There was no need.

TID capitalized on a scheduled test of one its generation units and continued to run the unit after the test to help meet local load system demand and provide additional capacity to the ISO.





Peak Experience

On Monday, August 17, 2020 the **TID Balancing Authority System Peak was 692MW (highest on record, compared to a max forecasted average peak for August of 652).**

Even though TID was not impacted by the Flex Alert, the District contacted customers via social media encouraging them to reduce their energy consumption during peak hours to help alleviate the grid pressures.

TID communicated with large commercial customers who adjusted their facilities to run when the system was less stressed. Others offered to shed load if the District's system was close to failure.

At no point was TID close to shedding load to maintain system reliability. TID had excess generation and capacity, allowing the District to assist the ISO during peak hours.

TID Assistance to the ISO

TID offered and sold 592 MWh over the August 14-18, 2020 extreme heat event, **providing crucial capacity to the ISO when the need was highest** (over 31 peak hours).

Additionally, TID was asked, and provided assistance during the September Flex Alert incident (85 MWh over six peak hours).

Turlock Irrigation District | TID.org

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