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CEC SB 100 Inputs Workshop

February 24th, 2020

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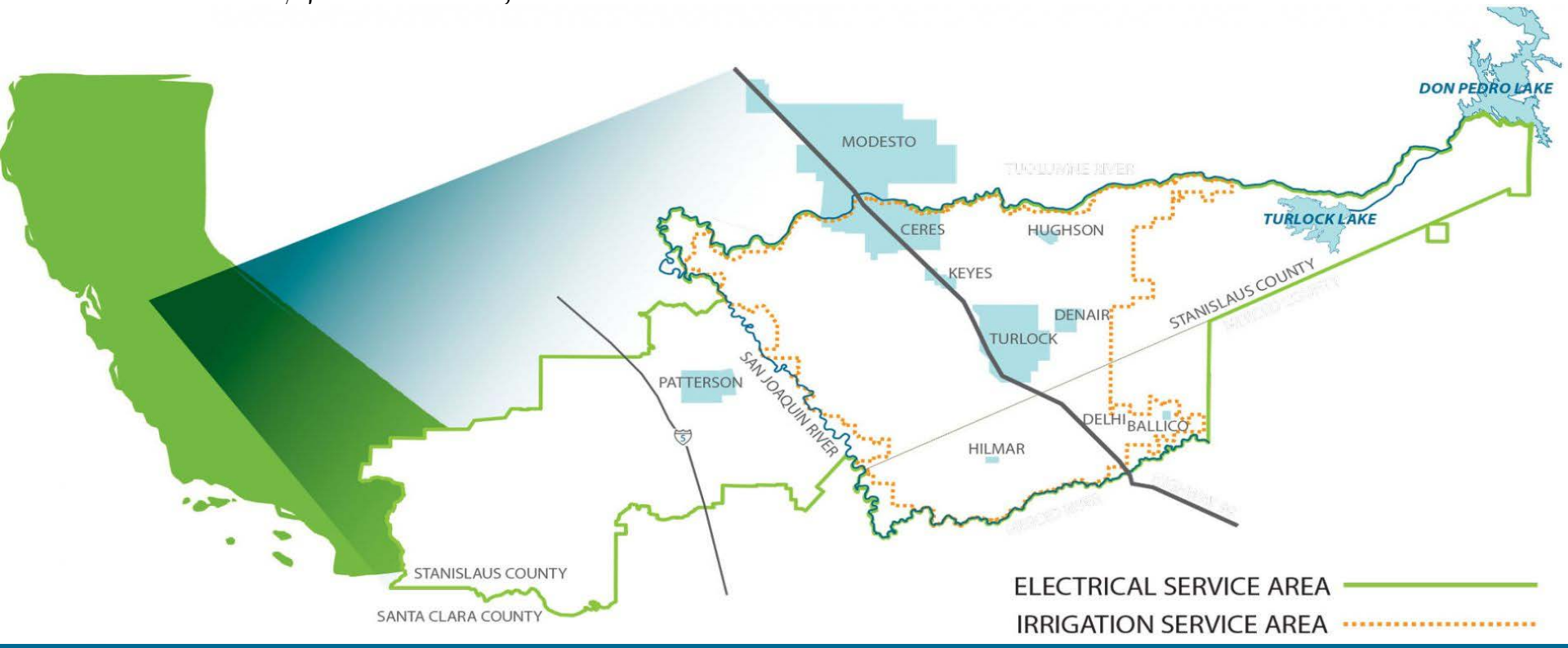
WATER & POWER
Serving Central California since 1887

About TID

- 1st Irrigation District in California (by 1 Week)
- Established in 1887
- 5 Member locally elected Board of Directors
- Publically Owned, Not for Profit, 453 Employees
- Provides Irrigation Water to over 4,500 growers and 145,000 acres
- Started providing power in 1923
- Currently just over 100,000 retail electric accounts



Power Profile

- Independent Balancing Area (2005)
- Diverse portfolio of Natural Gas, Hydro, Solar, Wind, Geothermal, and Biomass
  - 522 MW Thermal (Internal)
  - 203 Large Hydro (Internal)
  - 15 MW Small Hydro (Internal)
  - 137 MW Wind (External)
  - 54 MW Solar (External)
  - 8 MW Geothermal (External)
  - 1.2 MW Biomass (External

- Peak Load of 600 MW
- 30% RPS Eligible and over 50% Carbon Free

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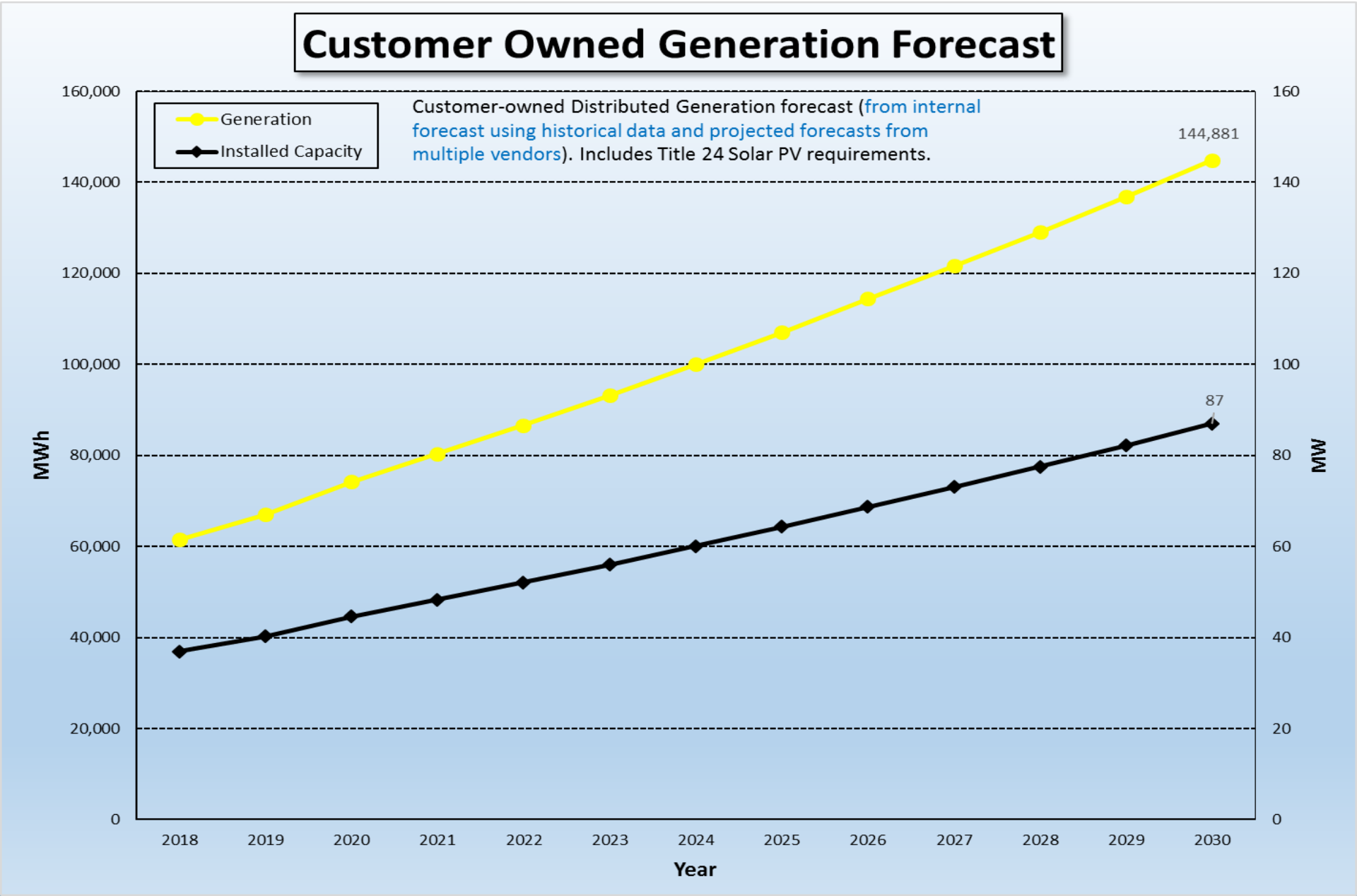
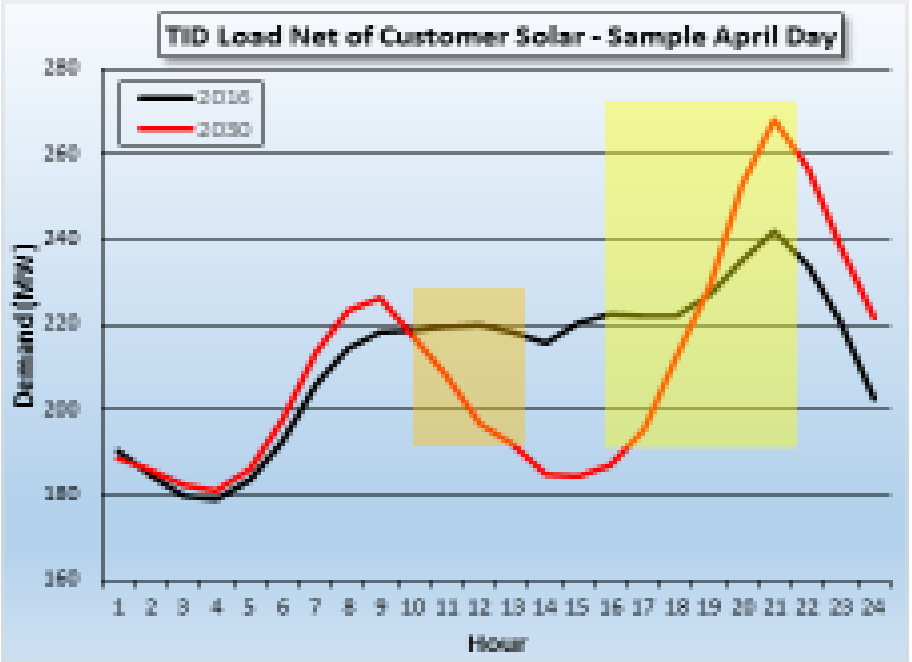
Customer Owned Solar

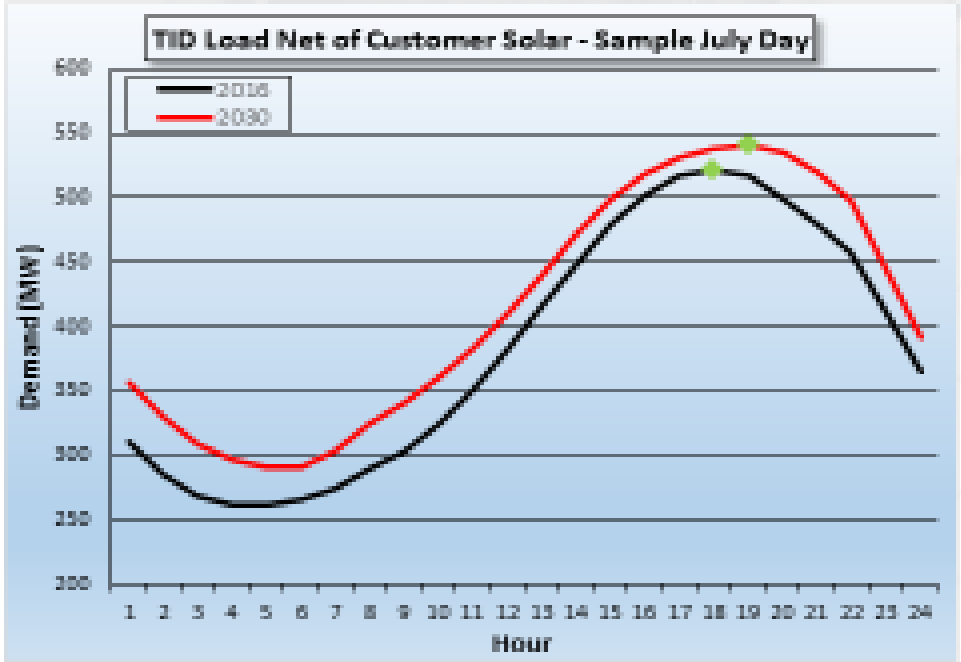


Changing Energy Use Patternes

Loadshape 2016 vs. 2030

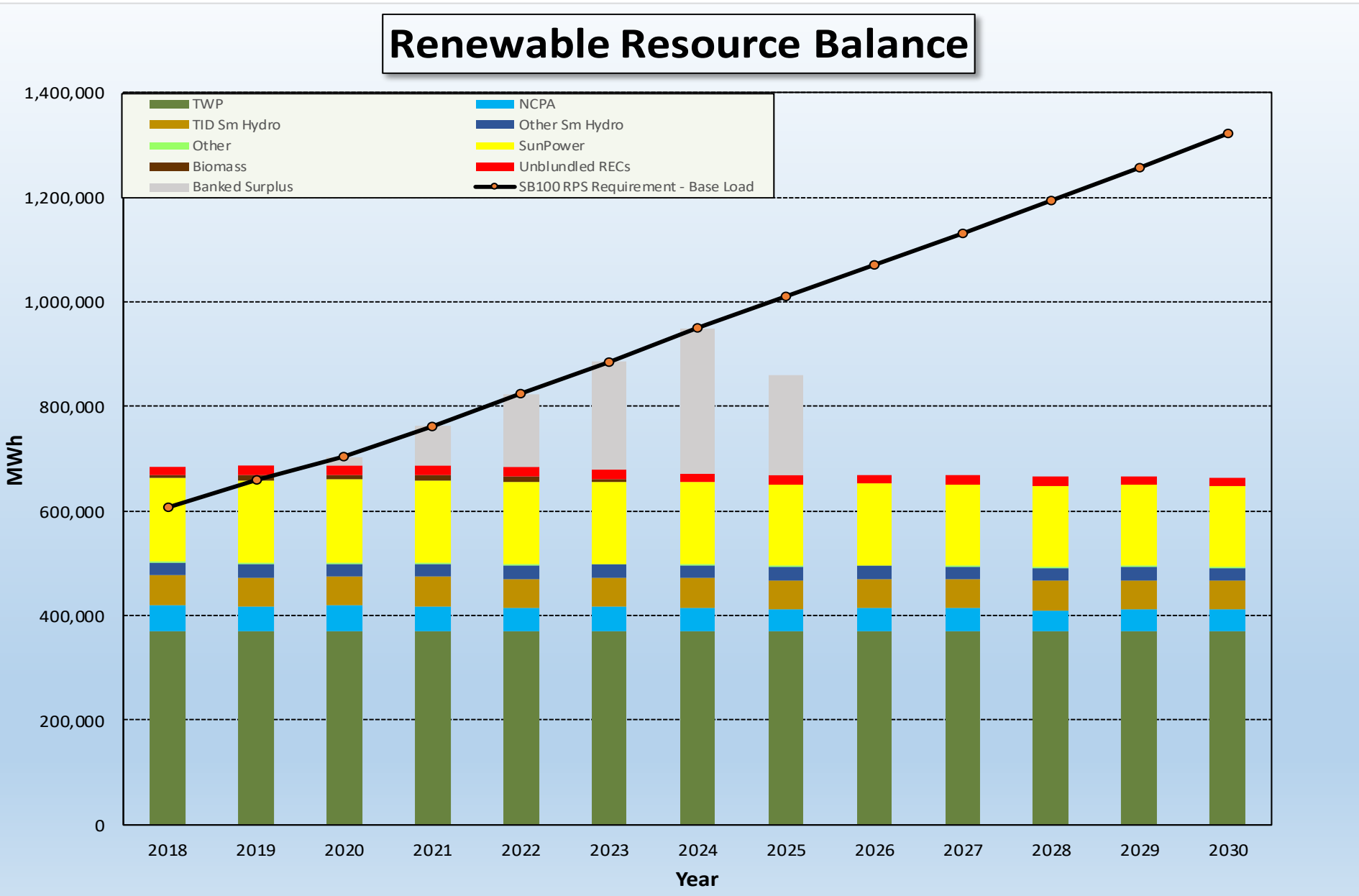
- Growing customer solar changes TID's hourly load profile
  - Lower daytime net load in Spring, larger load ramps in morning and evening
  - Peak hour in Summer shifted to later in the day



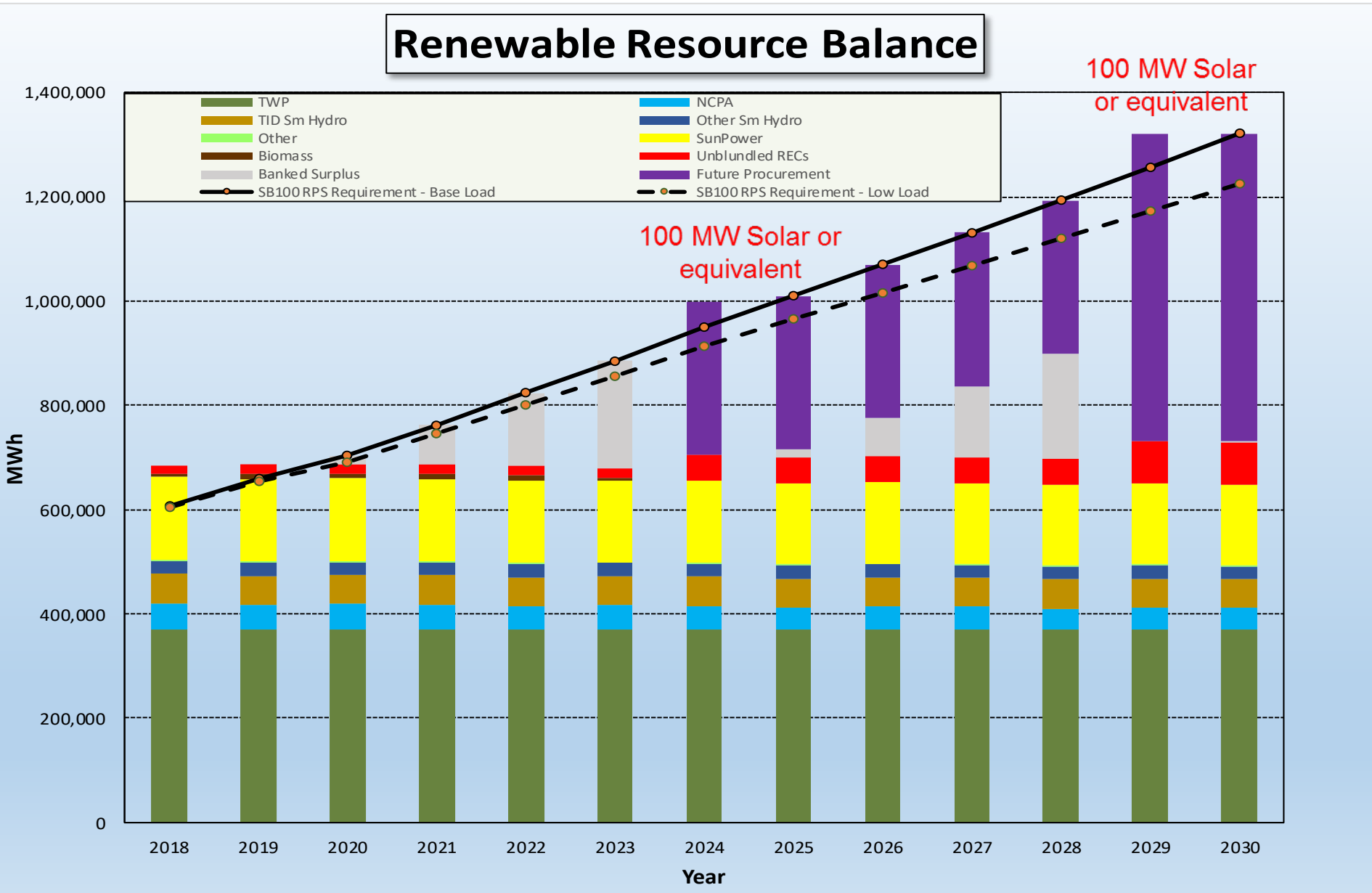


TID WATER & POWER

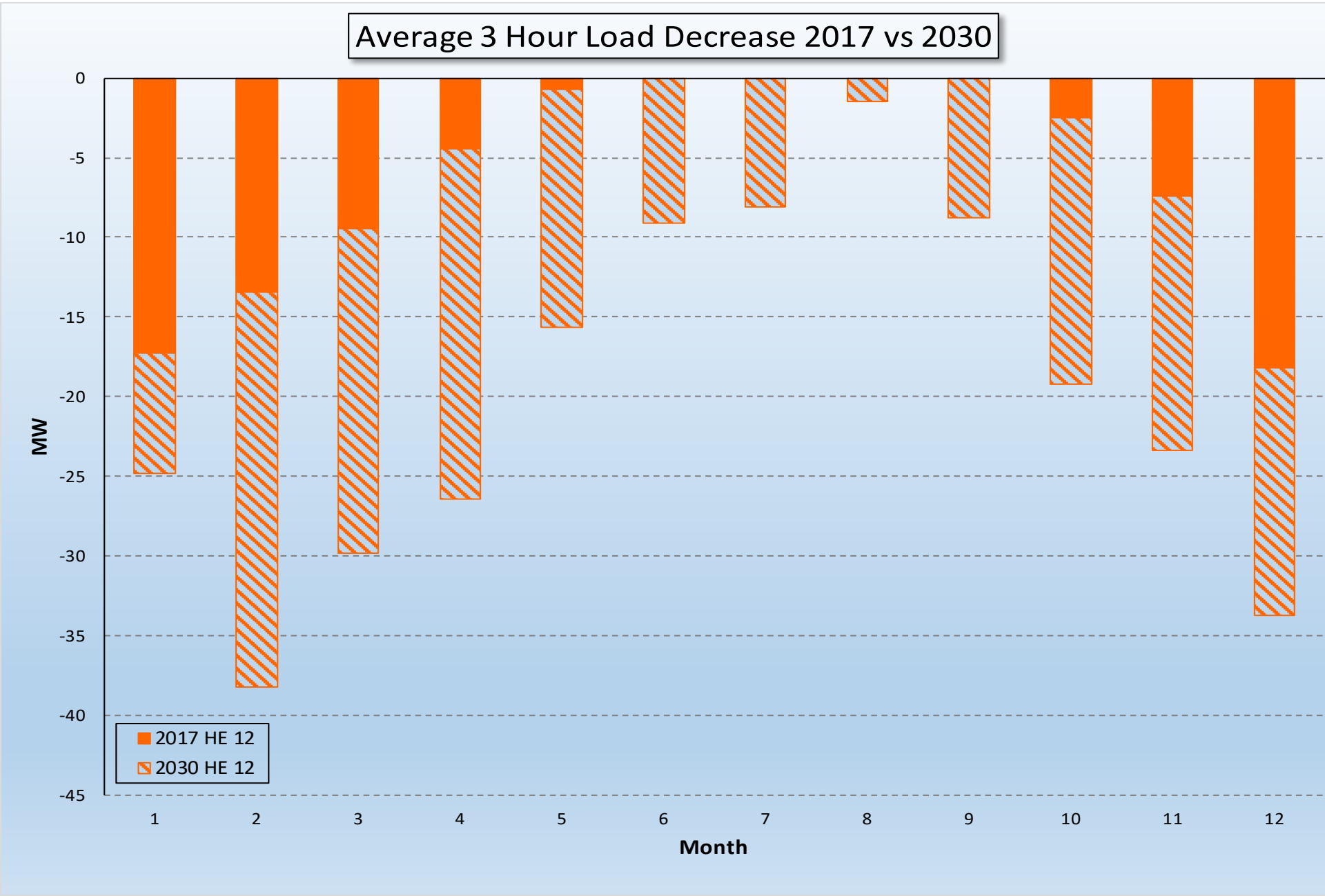
TID Current Renewable Portfolio



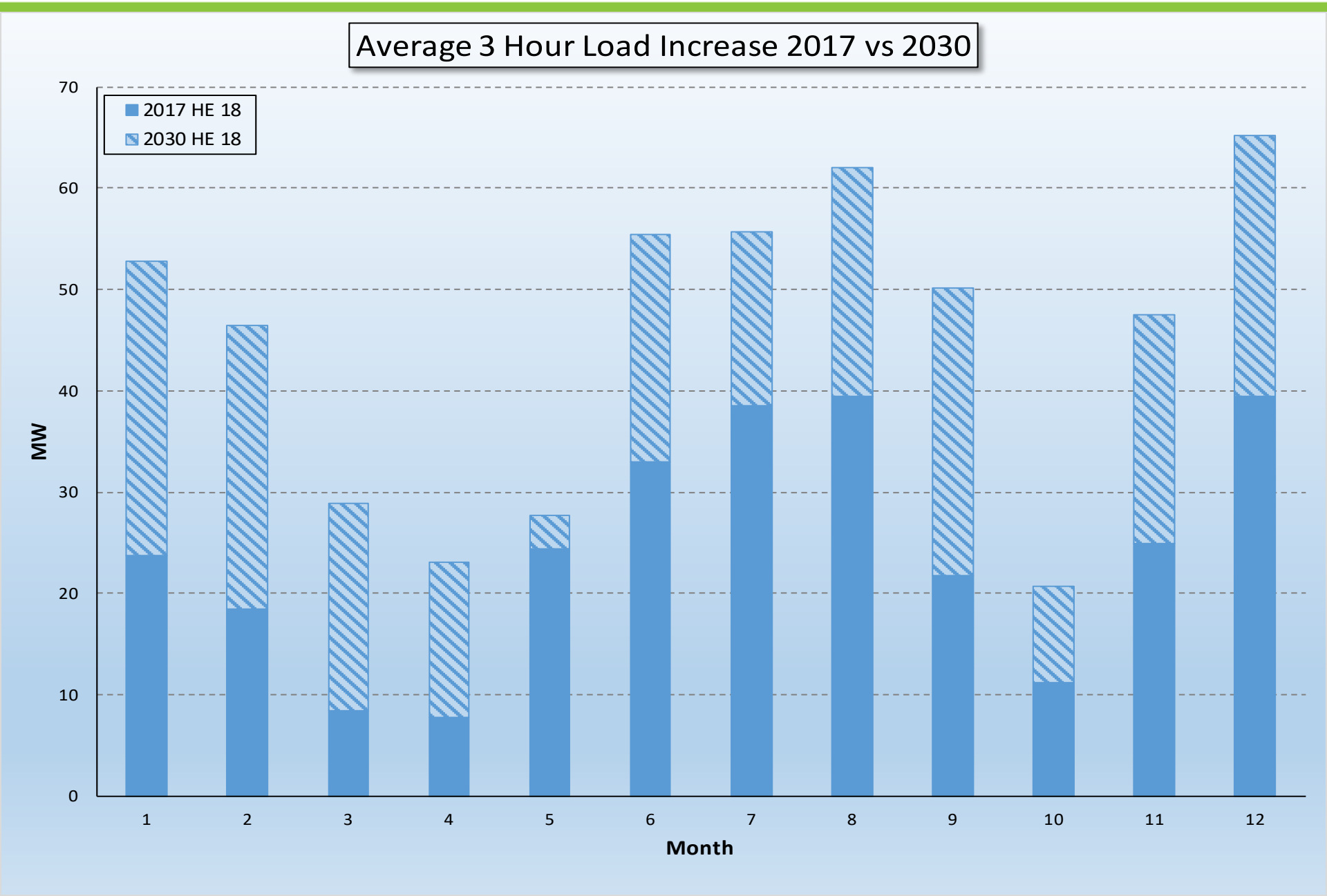
TID Potential Future Renewable Portfolio



Ramping Challenges-Down



Ramping Challenges-Up



Conclusions

- How are you planning for reliability and resource adequacy as system resources change?
  - As more variable resources integrate into the System, capacity value decreases
- What flexible/dispatchable resources do you need for grid reliability?
  - TID is evaluating storage, and will most likely need to add storage requirements to inside the BAA builds/procurements

Conclusions

- With a 25-year view, what challenges do you see in moving away from fossil (gas) resources?
  - Available Balancing Capacity
  - System Inertia
  - Frequency Support
- What technological innovations or cost reductions are most critical in the next 25 years?
  - Storage cost, performance
  - Smart Grid Technologies
- What are the needs/opportunities for transmission planning?
  - Dynamic Transfers
  - Operational Seams

Links