# BTM Load Modifiers for Publicly Owned Utilities (POU) Hourly Forecasts

Paul Deaver

June 2021

# Overview

- CEC uses load modifiers in POU load forecasts
  - AAEE
  - BTM PV
- Other load modifiers are assumed to be baked in to the POU annual forecasts
  - EV charging
  - Climate change impacts
  - BTM storage

- And PLEXOS dispatches others
  - Pump storage

# General Method

- Calculate annual load modifier impacts from demand forms
  - AAEE: subtract Managed from Baseline (form 1.5a and 1.5b)
  - BTM PV: same method (use other forms)
- Pick IOU area adjacent to POU area as a proxy
  - Use SDG&E for Imperial Irrigation District (IID), for example
- Normalize IOU hourly load modifier forecast,
  - Then use POU annual peak and energy load modifier values and normalized IOU hourly values to create modifier forecasts
- This provides hourly estimates of POU load modifier impacts
- SAO uses “Mid-Mid”, “High-Low”, and “Low-High” CED forecasts

# Method for AAEE (IID Example, 2021)

- Subtract managed from unmanaged forecast for ‘total energy to serve load’ to get annual AAEE energy impact (form 1.5a)

- Subtract managed from unmanaged forecast for ‘1-in-2 peak demand’ to get annual AAEE peak capacity impact (form 1.5b)

- Next, normalize the hourly AAEE forecast for SDG&E, then
  - Multiply the SDG&E AAEE forecast by IID annual peak(MW) AAEE impact to get hourly IID AAEE estimate for peak capacity
  - Multiply the SDG&E AAEE forecast by IID annual energy(GWh) AAEE impact to get hourly IID AAEE estimate for energy

- Now have hourly IID AAEE forecast estimates

# Method for BTM PV (IID Example, 2021)

- Similar method to AAEE hourly build

•Get POU annual peak and energy BTM PV forecasts (provided from the CEC's Demand Analysis Office [DAO])

•Next, normalize the hourly BTM PV forecast for SDG&E, then

  •Multiply by IID annual peak(MW) BTM PV impact to get hourly IID BTM PV estimate for peak capacity

  •Multiply by IID annual energy(GWh) BTM PV impact to get hourly IID BTM PV estimate for energy

•Now have hourly IID BTM PV estimates

# Other Load Modifiers

- Staff does not calculate all load modifiers
- Some are baked into the annual POU forecasts (from DAO)
  - EV charging
  - Climate change impacts
  - BTM storage

- PLEXOS decides the amount of other load modifiers
  - Pump storage- economic dispatch

# Data Sources

- CEC demand forecast information (2020-2030 update)
- 2020 IEPR Update Workshops, Notices and Documents (ca.gov)
- Open box titled: 'California Energy Demand Forecast Update, 2020-2030'
- For annual POU AAEE estimates, under 'LSE and BA Tables'
  - Link for 'managed forecast' and 'Baseline Forecast'
- For hourly IOU forecast, under 'Hourly Forecast Update'
  - Pick IOU and case
    - Mid-mid means mid energy consumption/mid AAEE

- For POU BTM PV data (annual)
  - Get tables from DAO staff

# Questions/Comments/Suggestions