Peak and Hourly Load Forecasts for IOU Planning Areas

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Purpose of Hourly Load Modeling

- Capture "peak shift" to provide more accurate peak forecasts
- Monthly peaks for Resource Adequacy
- Provide daily "ramp-ups" for hourly loads

Structure of Hourly Load Model

- Hourly "consumption" load ratios estimated for each hour for each CAISO TAC area based on weather and calendar variables

- Average hourly "consumption" applied to load ratios to give hourly unadjusted "consumption"

- Hourly EV load, climate change impacts, and other consumption adjustments added; hourly PV generation subtracted to give baseline hourly sales forecasts

- Hourly AAEE subtracted to give managed sales forecasts (*CED 2019 Revised*)

Updates for *CED 2019 Preliminary*

- Separate Estimation of Pumping Loads
  - CADWR for PG&E TAC
  - CADWR+MWD for SCE TAC
- New Hourly EV Loads
- New PV Forecast
- New AAEE numbers for revised forecast
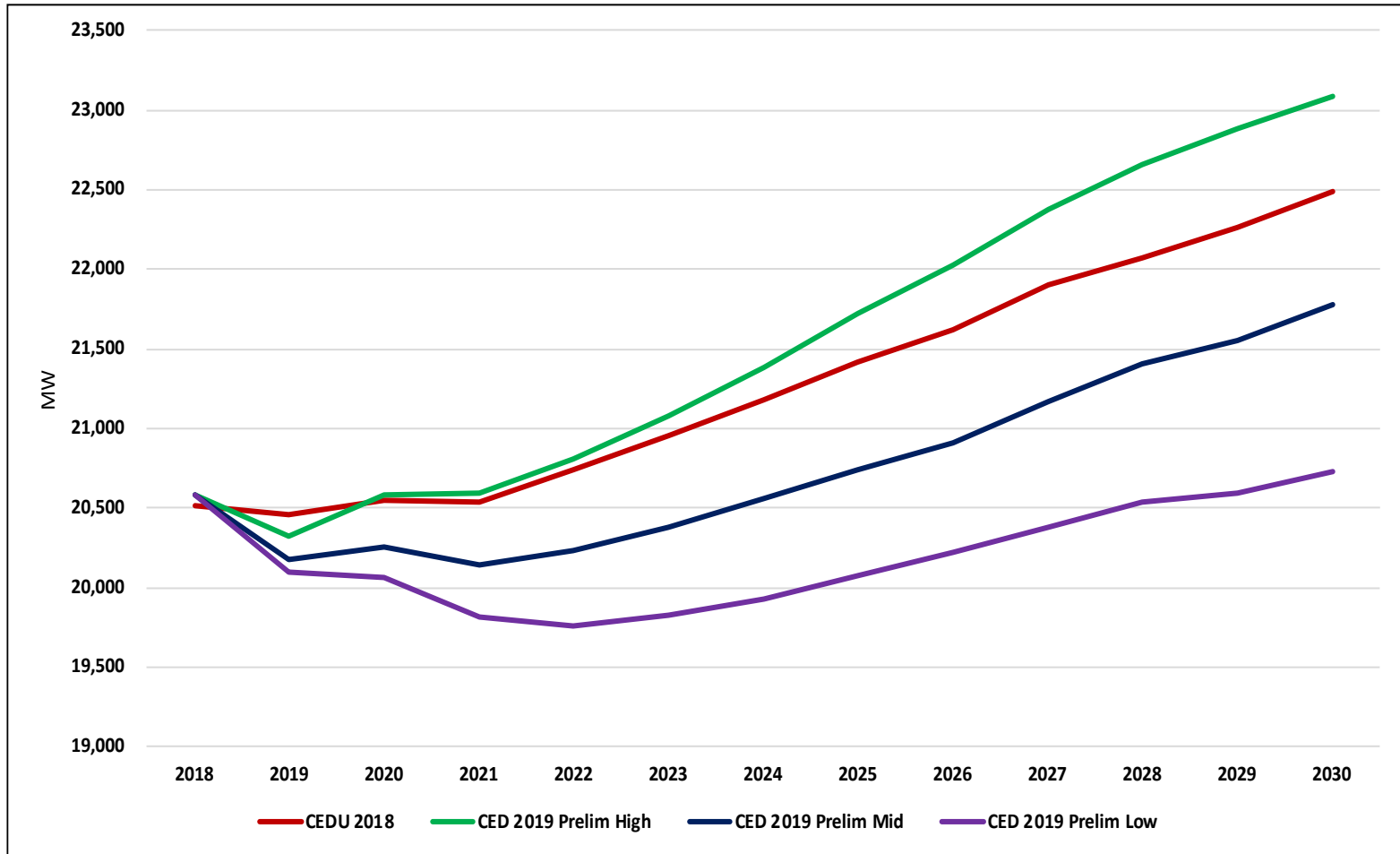
Hourly EV Loads

- For CED 2017 and CEDU 2018, staff used hourly EV profiles from LBNL based on National Household Travel Survey

- For CEDU 2019, ADM has developed new profiles based on vehicle charging data from ChargePoint and Joint IOU Electric Vehicle Load Research Report metered residential charging profiles
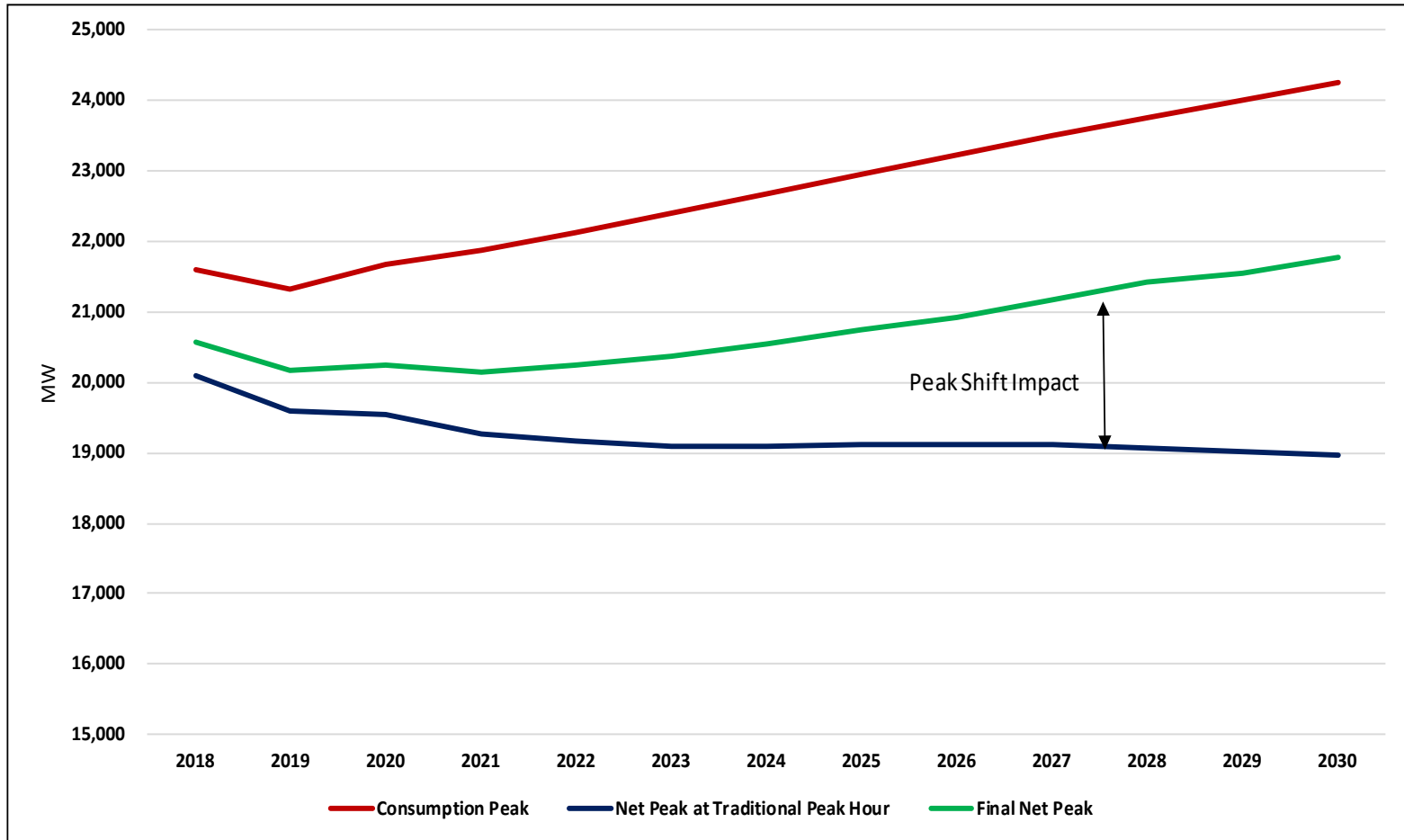
Results
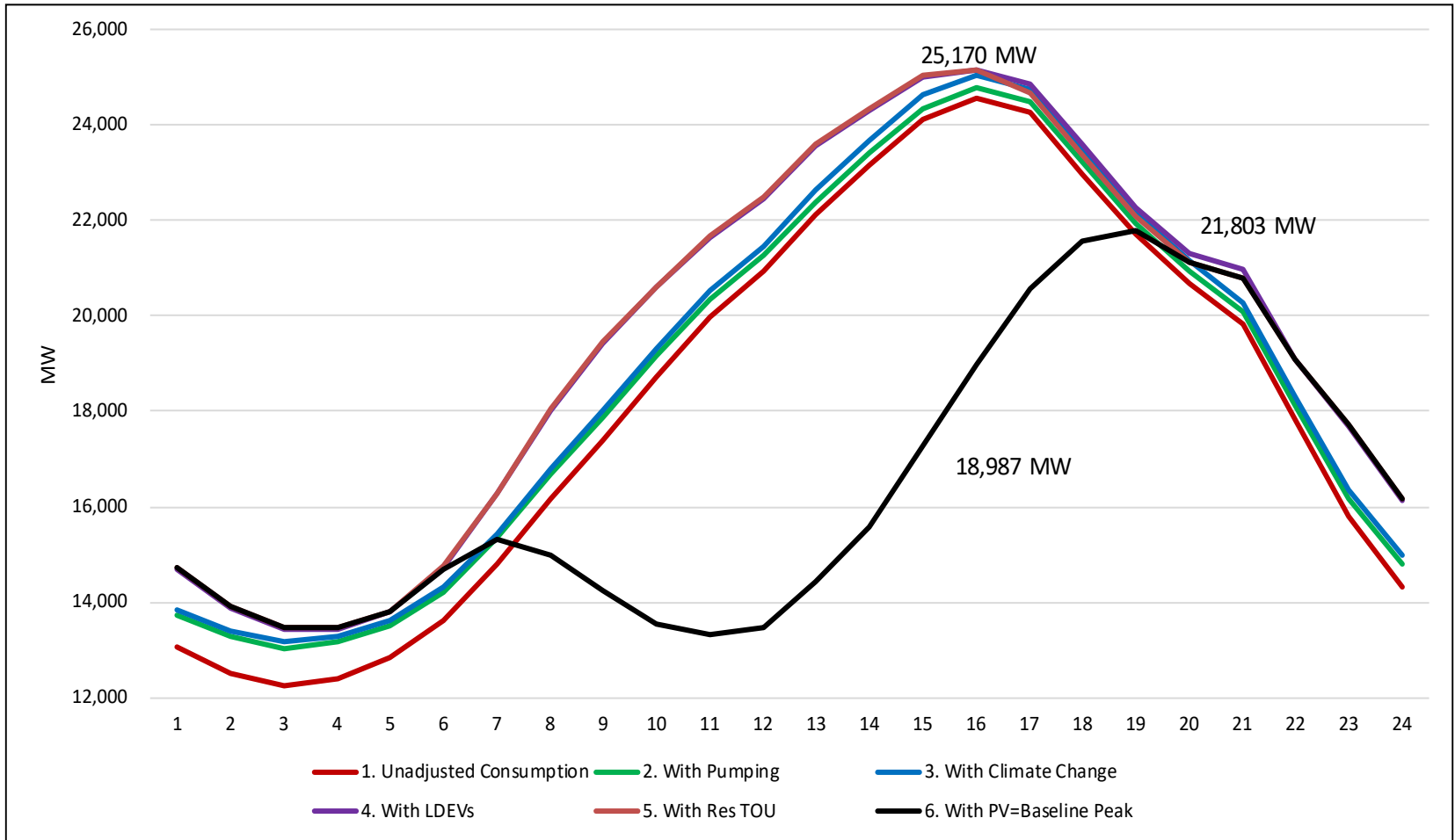
Baseline Annual Peak: PG&E
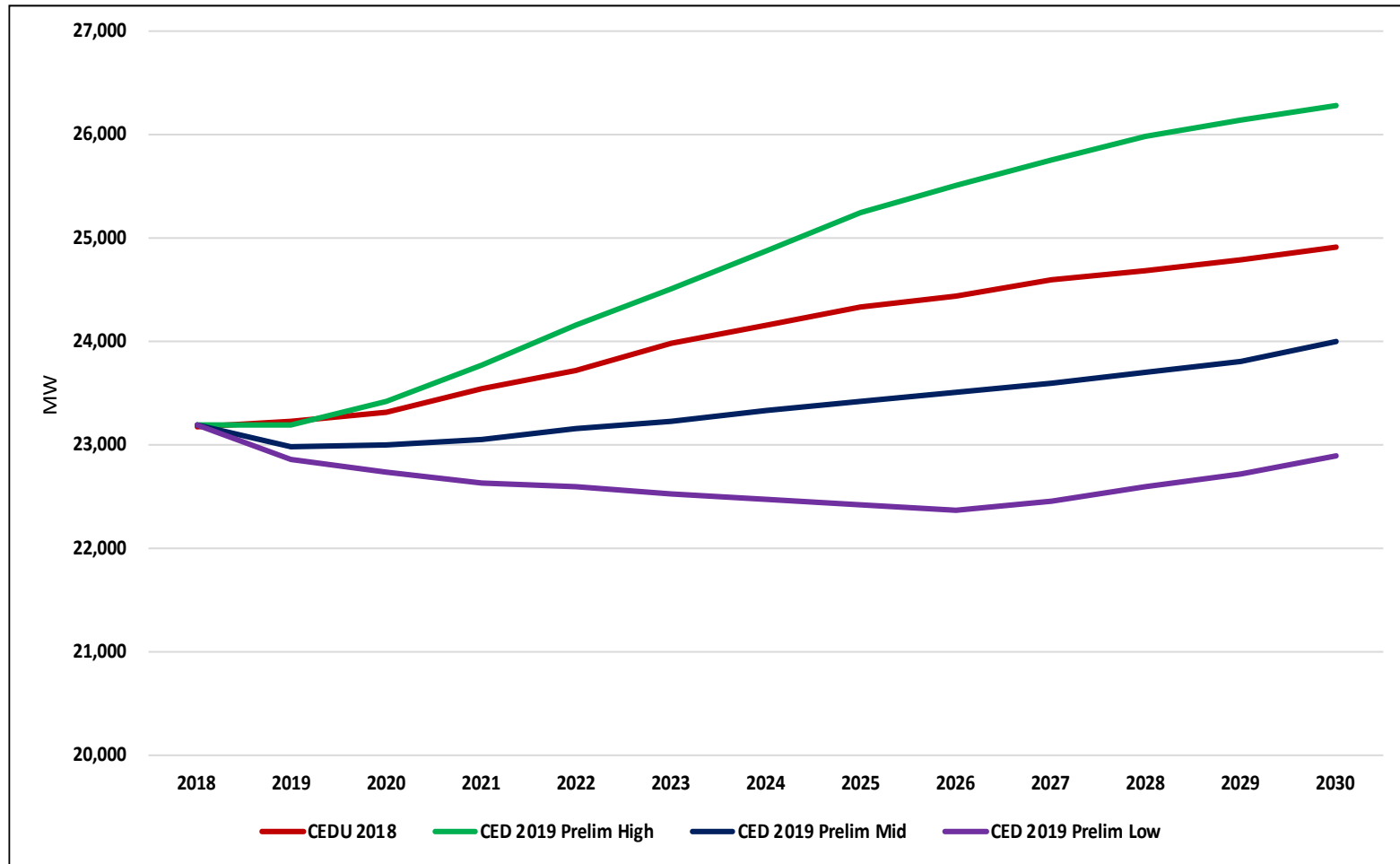
Consumption and Net Peaks: PG&E Mid Case

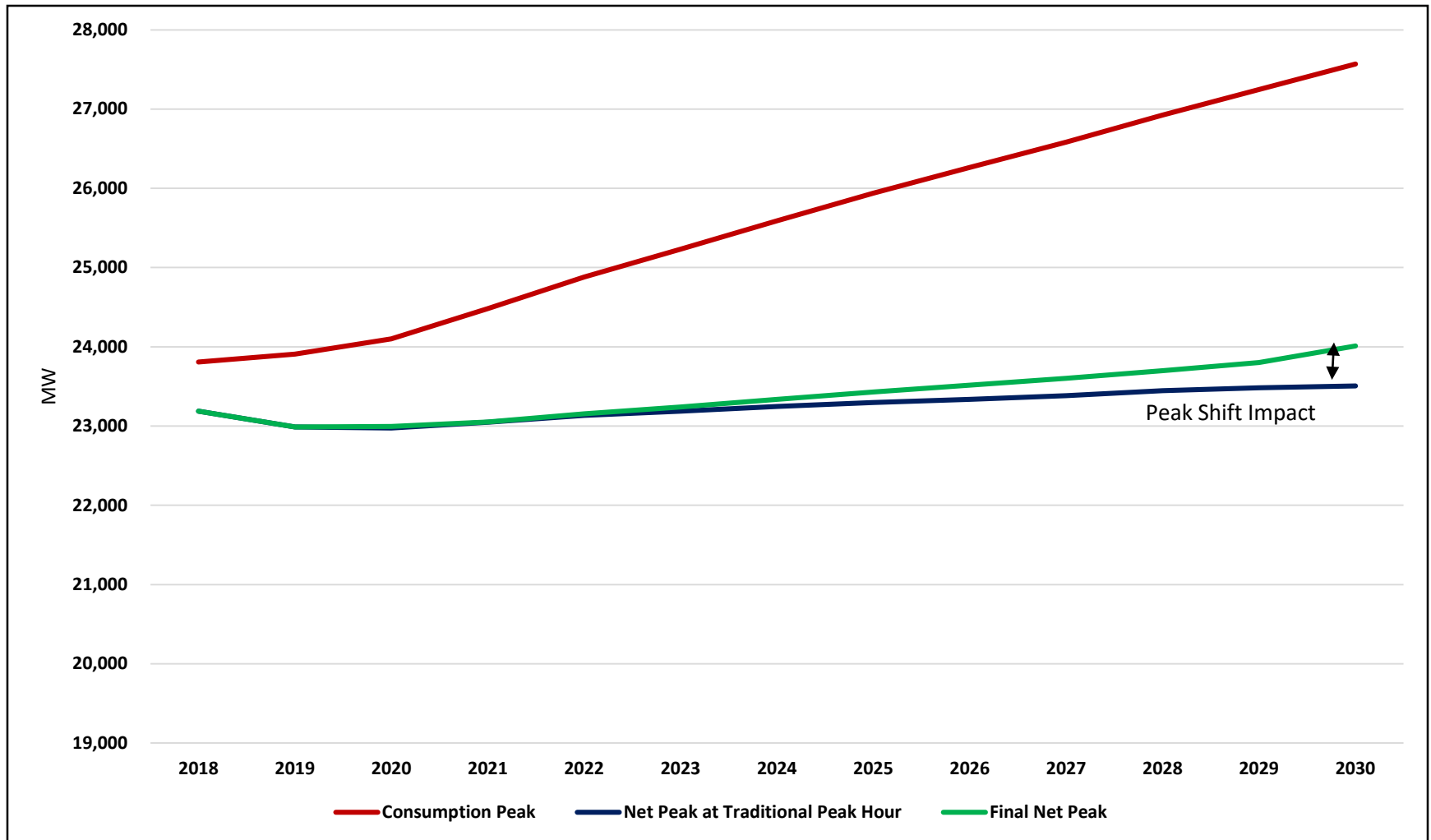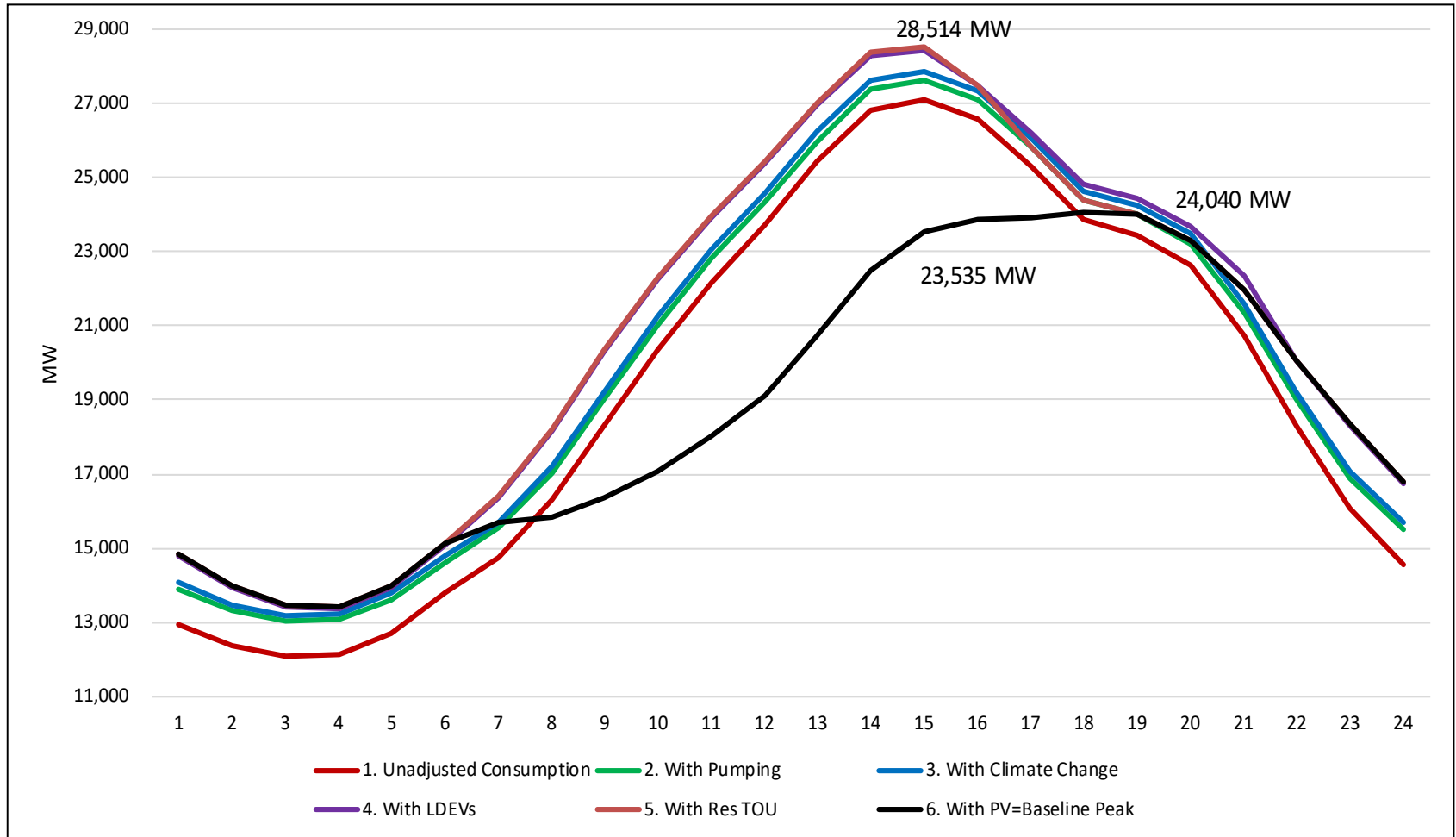# 2030 Peak Day: PG&E Mid Case

Baseline Annual Peak: SCE
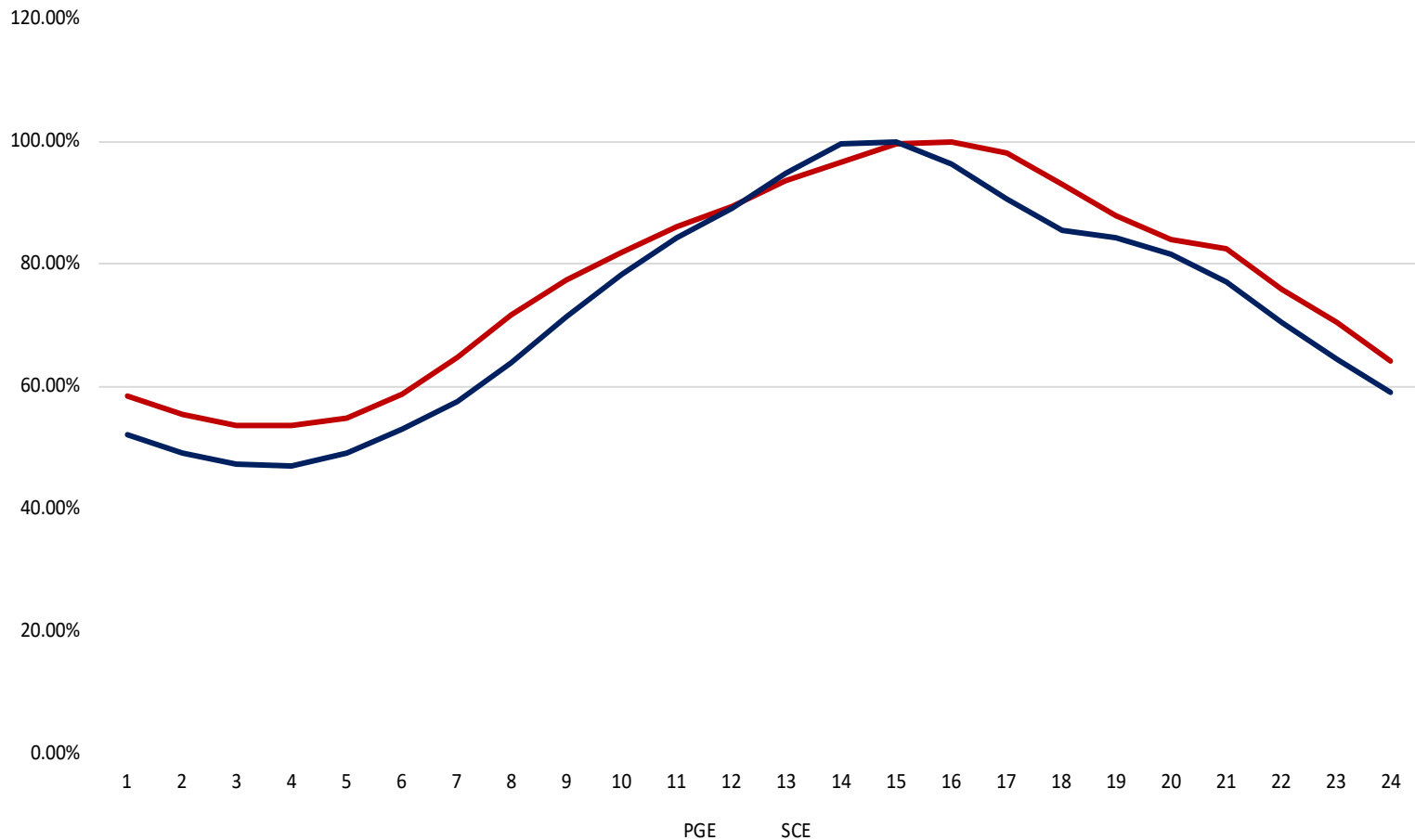
Consumption and Net Peaks: SCE Mid Case

2030 Peak Day: SCE Mid Case

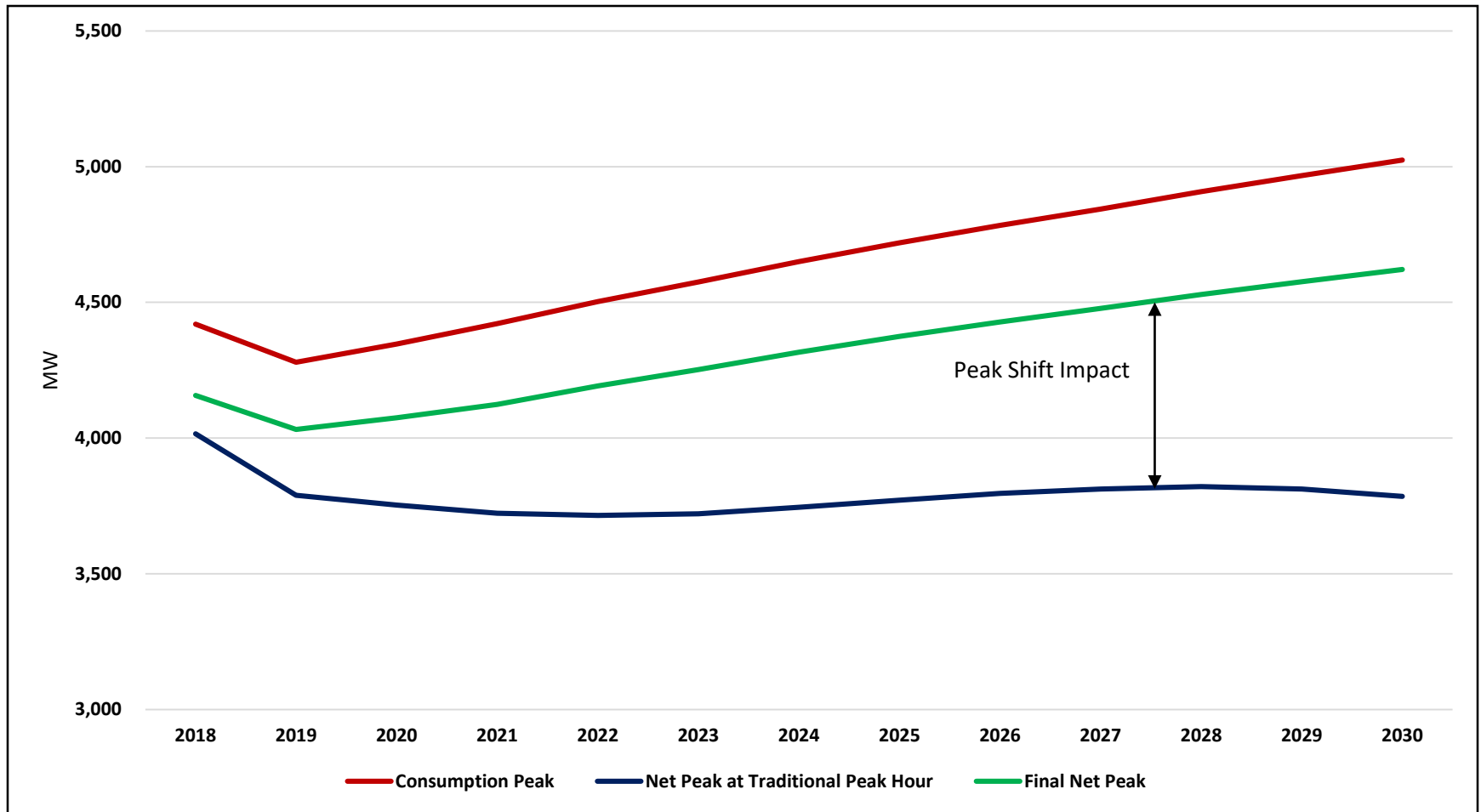Peak Shift Difference: SCE vs. PGE
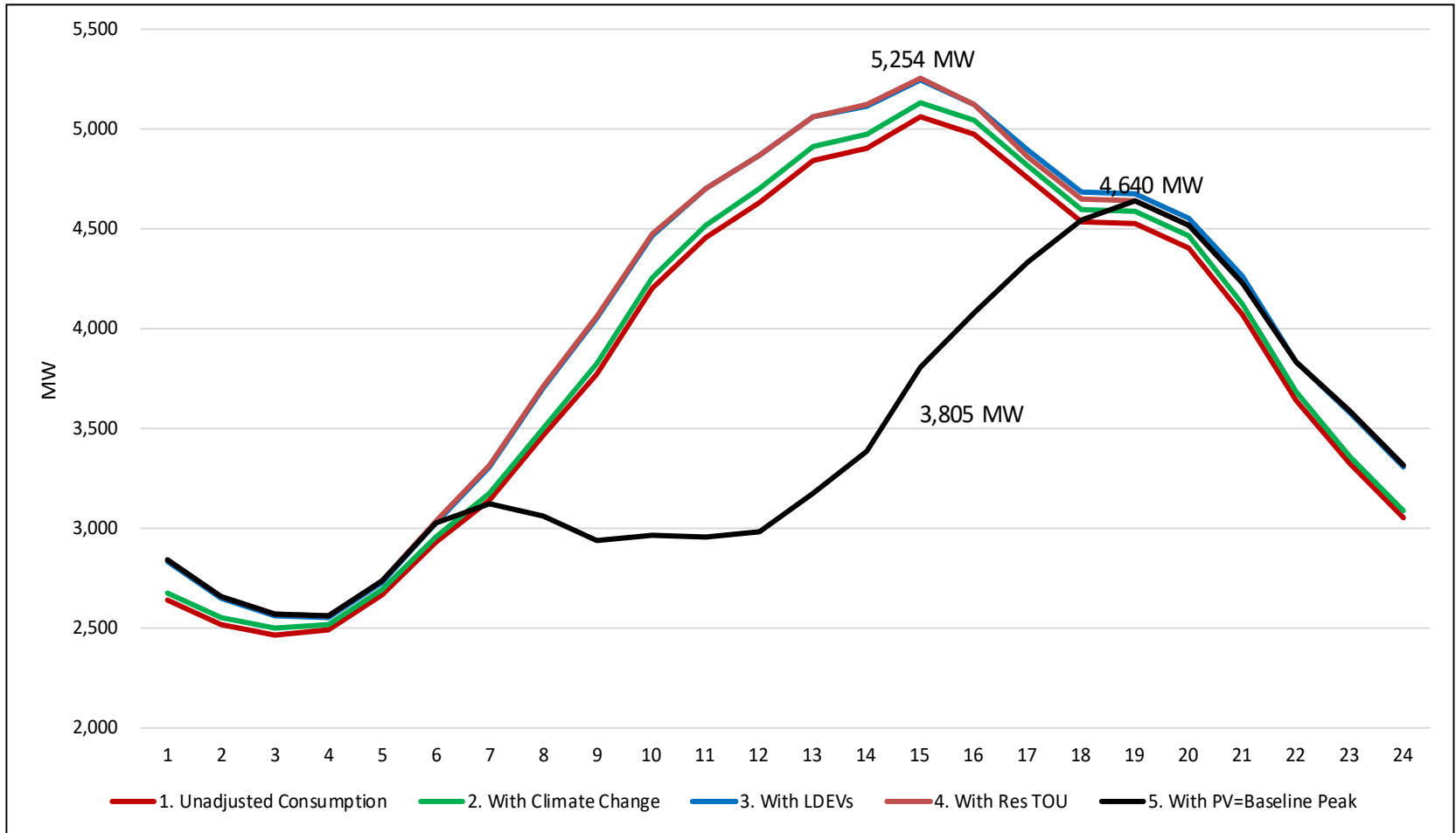Percentage of Peak on Peak Day, 2030

Baseline Annual Peak: SDG&E

Legend: CEDU 2018 — CED 2019 Prelim High — CED 2019 Prelim Mid — CED 2019 Prelim Low
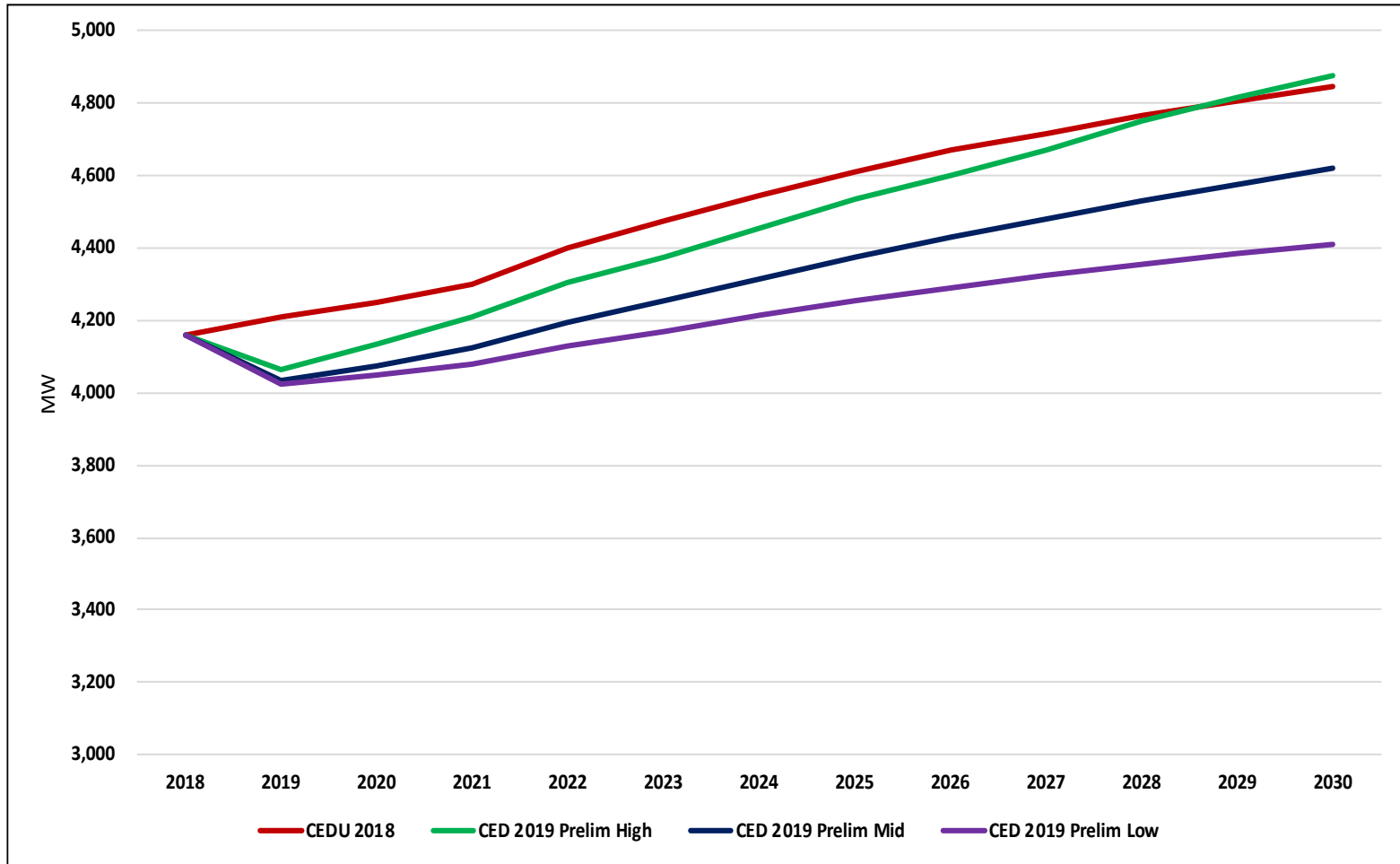
Consumption and Net Peaks: SDG&E Mid Case

2030 Peak Day: SDG&E Mid Case

Chart showing MW (y-axis, 2,000–5,500) versus hours 1–24 (x-axis). Annotations: 5,254 MW, 4,640 MW, 3,805 MW.

Legend: 1. Unadjusted Consumption — 2. With Climate Change — 3. With LDEVs — 4. With Res TOU — 5. With PV=Baseline Peak
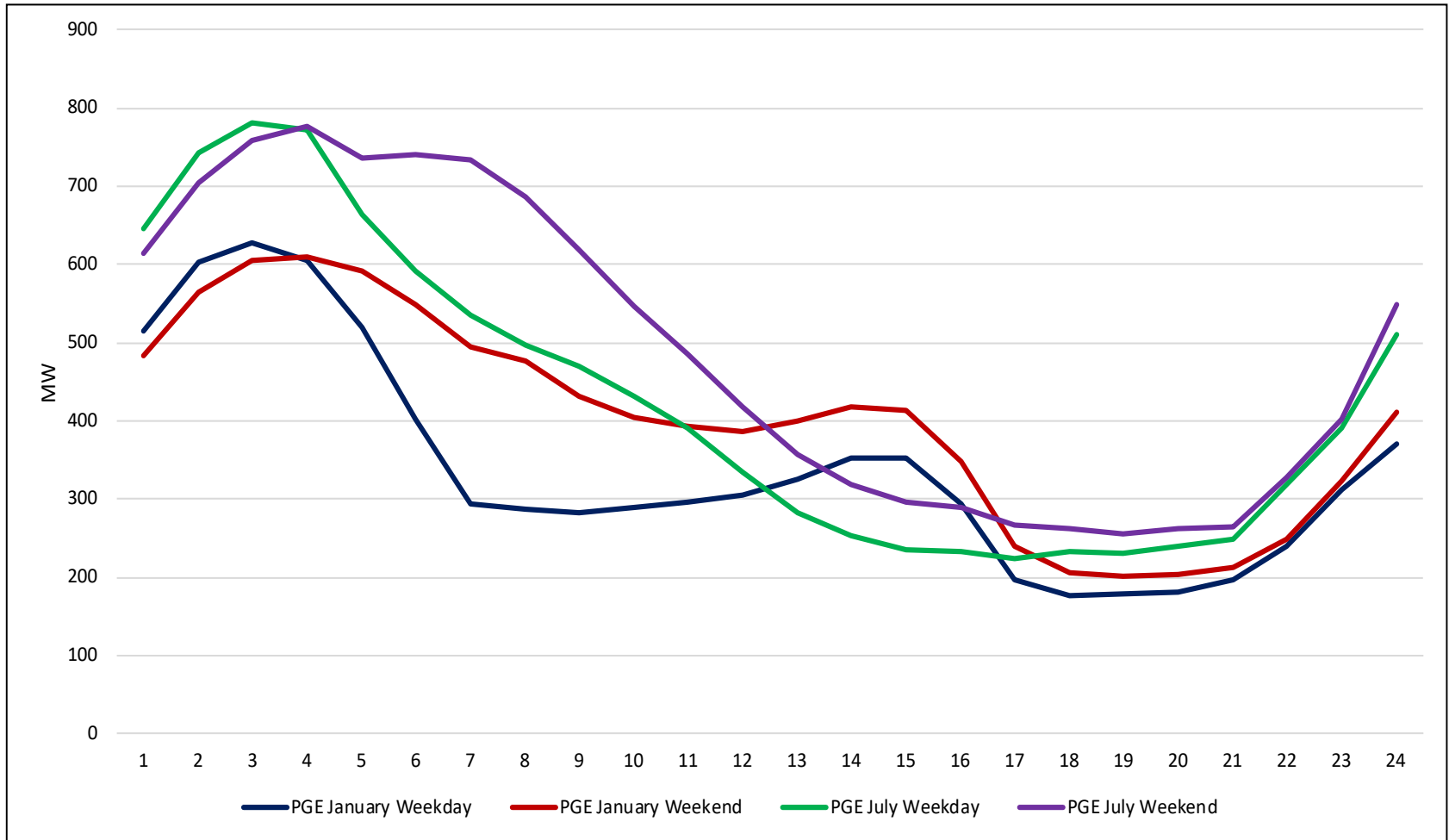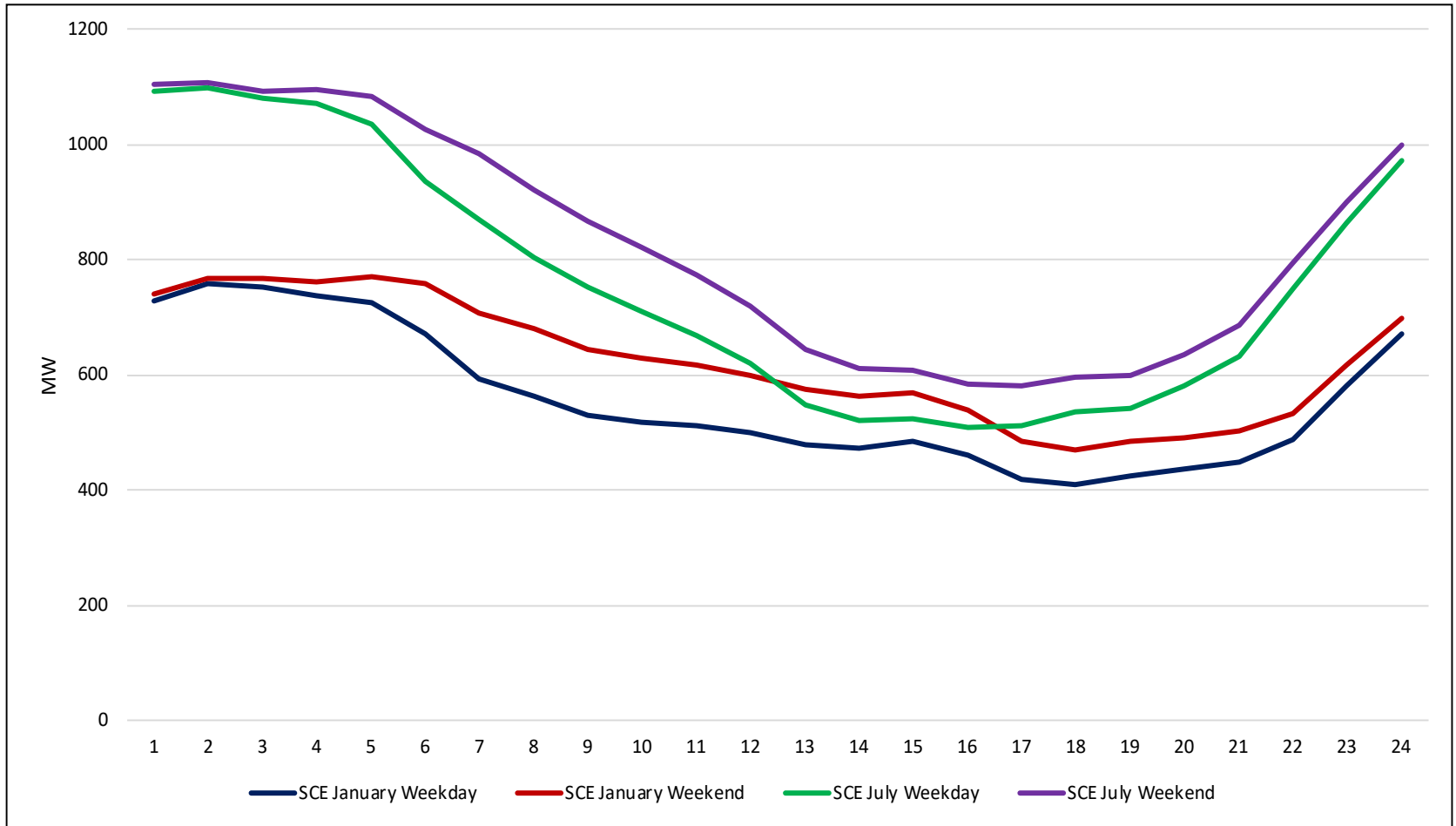
Pumping: PG&E TAC (CADWR)

Pumping: SCE TAC (CADWR+MWD)

Next Steps (Revised Forecast)

- Incorporate new AAEE
- Incorporate storage
- Hourly LMDR
- Updated residential TOU
- Incorporate hourly temperature projections under climate change from Scripps
- Integrate with HELM 2.0

Questions/Comments