California Energy Demand 2016-2026 Revised IEPR Forecast (*CED 2015 Revised*): Process, Summary of Results, and Choice of Managed Forecast

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Purpose/Uses of Forecast

- CPUC Long-Term Procurement Process (LTPP)
- California ISO Transmission Planning Process (TPP)
- CPUC/California ISO Resource Adequacy
- CPUC energy efficiency potential studies
- Renewables planning
- Other

Process: How We Got Here

- Total of 6 IEPR workshops
- Demand Analysis Working Group (DAWG) meetings
- Joint Agency Steering Committee (JASC)
- Process alignment discussions: LTPP, TPP, and IEPR forecast
- Other stakeholder discussions

CED Forecasts Incorporate Policy Initiatives

- Building codes and appliance standards
- IOU and POU efficiency program impacts
- Distributed generation incentive programs
- Demand response programs
- ZEV mandate “likely compliance” scenario
- Electrification (ports, airports, HSR, etc.)
- Forecast used as an assessment of progress toward goals rather than assuming goals met

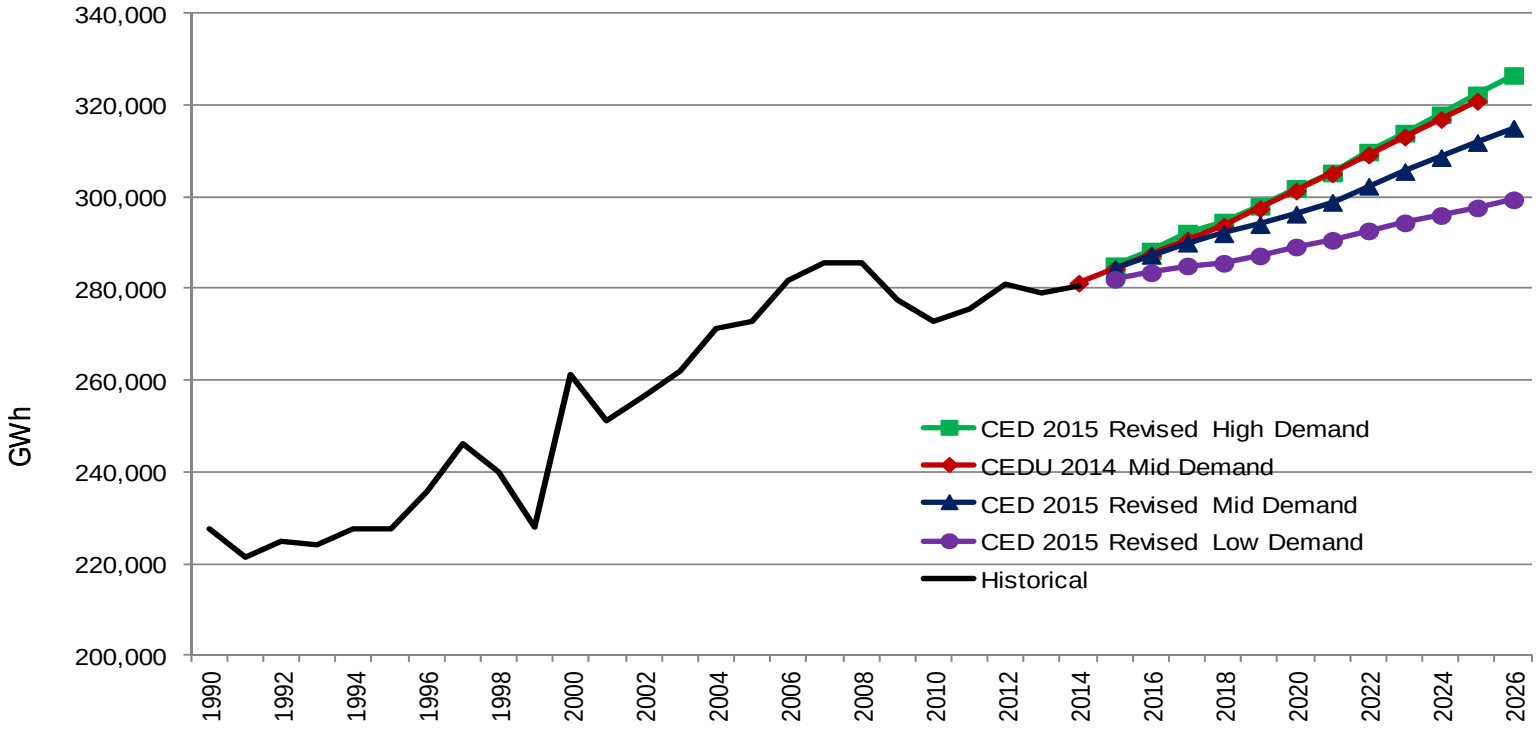
CED Forecast Methods and Inputs Evolve Over Time

Changes/Improvements vs. CEDU 2014

- Revised geography for planning areas and forecast zones
  - More consistent with balancing authority areas and CAISO transmission zones
- Updates to efficiency programs and standards, including additional achievable energy efficiency (includes POUs)
- New EV forecast and additional electrification

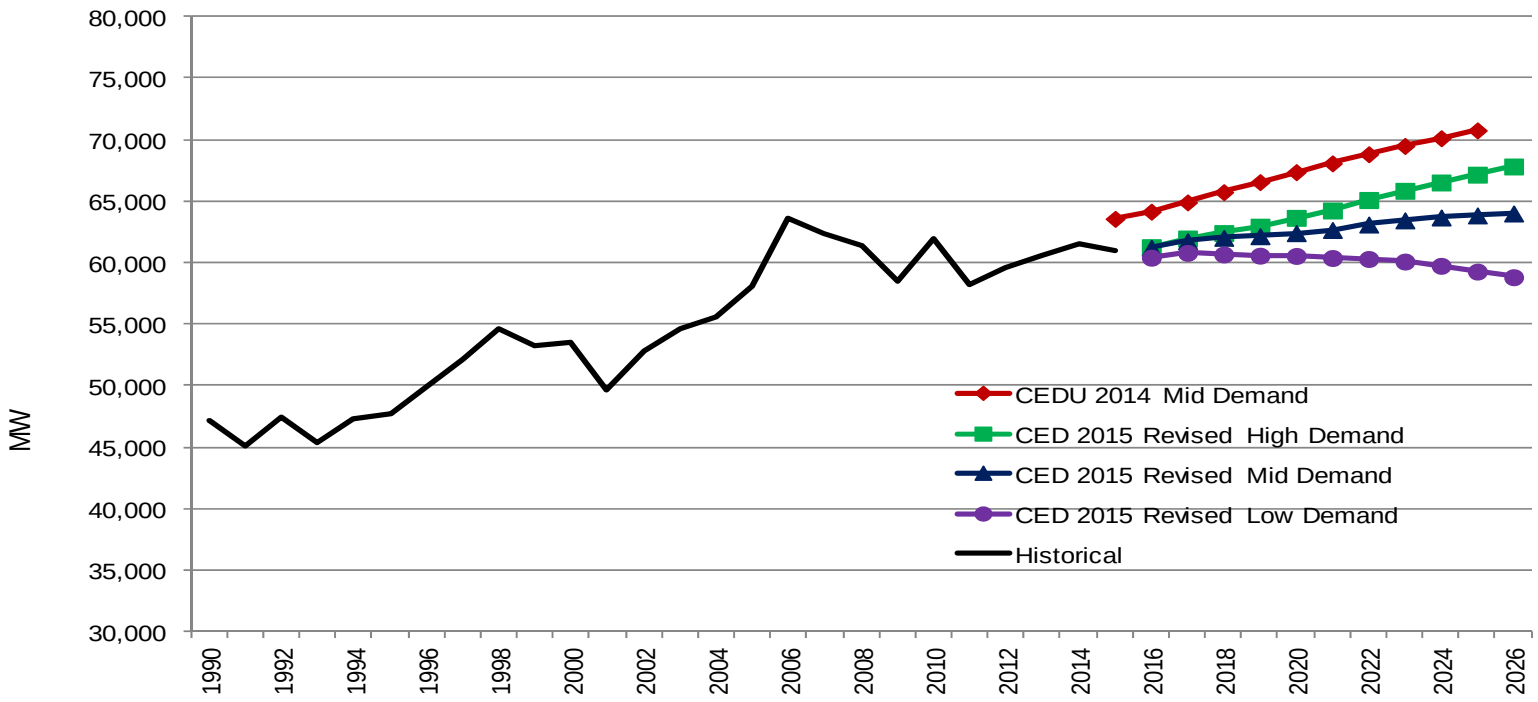
Summary: Statewide Baseline Electricity Consumption

New mid case growth lower than *CEDU 2014* mid



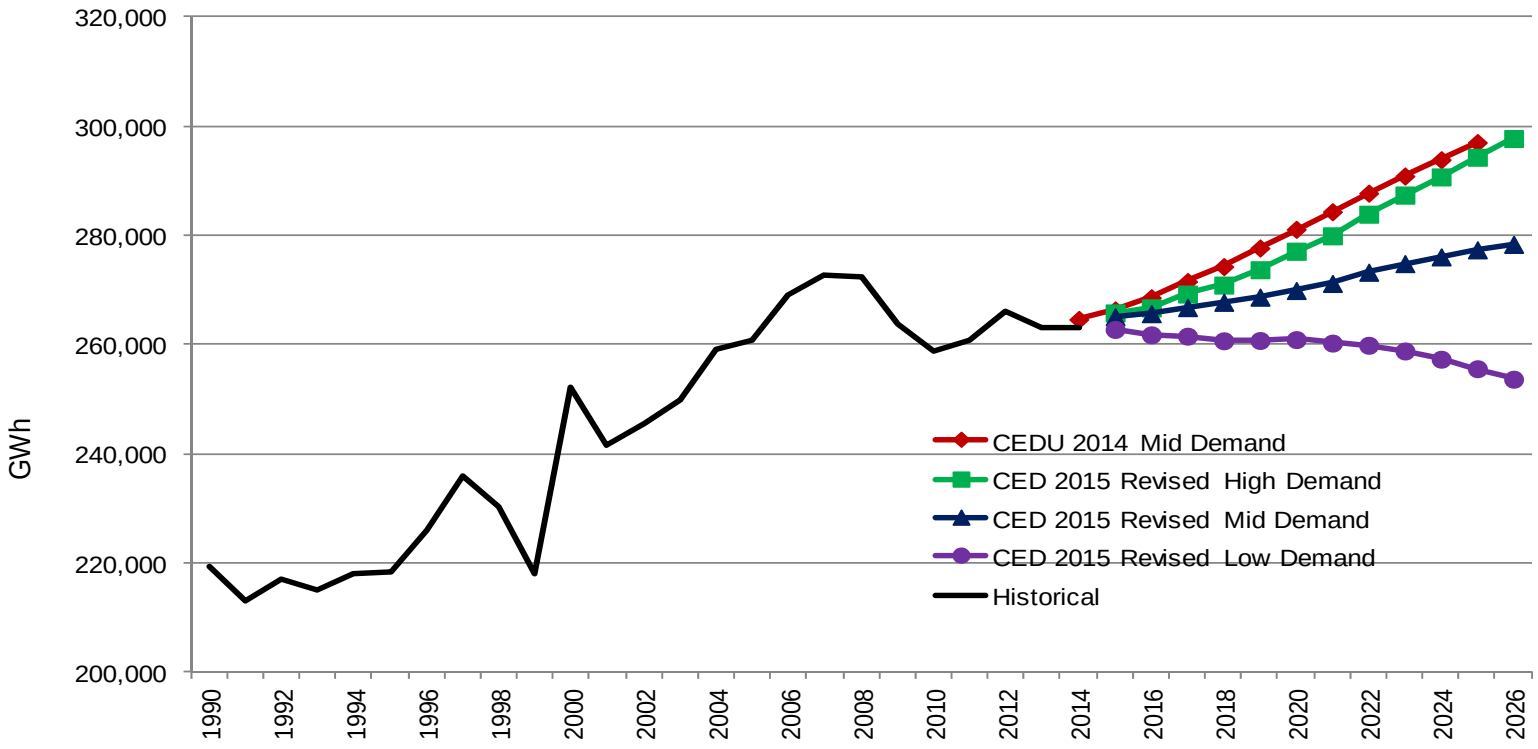
Statewide Baseline Electricity Peak Demand (Noncoincident)

Lower consumption and higher PV reduce peak demand



Statewide Baseline Electricity Sales

Higher PV adoptions also reduce sales vs. *CEDU 2014*



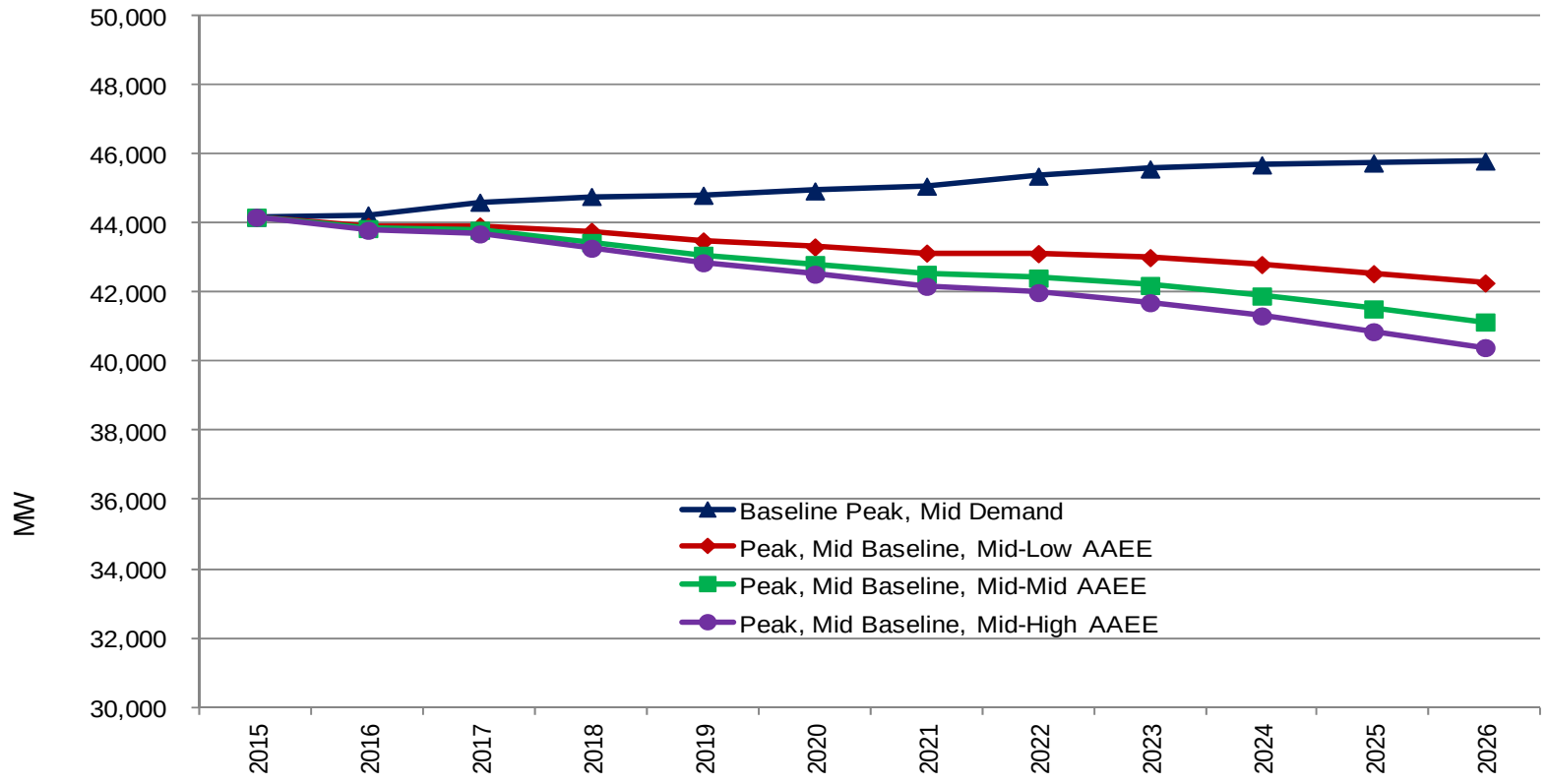
From Baseline to Managed Forecast: Additional Achievable Energy Efficiency (AAEE) for IOUs

- Incremental to committed savings in the baseline *CED 2015 Revised* forecasts
- Developed for IOU service territories based on *2015 Potential Study*
- 5 scenarios for electricity and natural gas consumption and peak
- Adjusted, or managed, forecasts for planning purposes

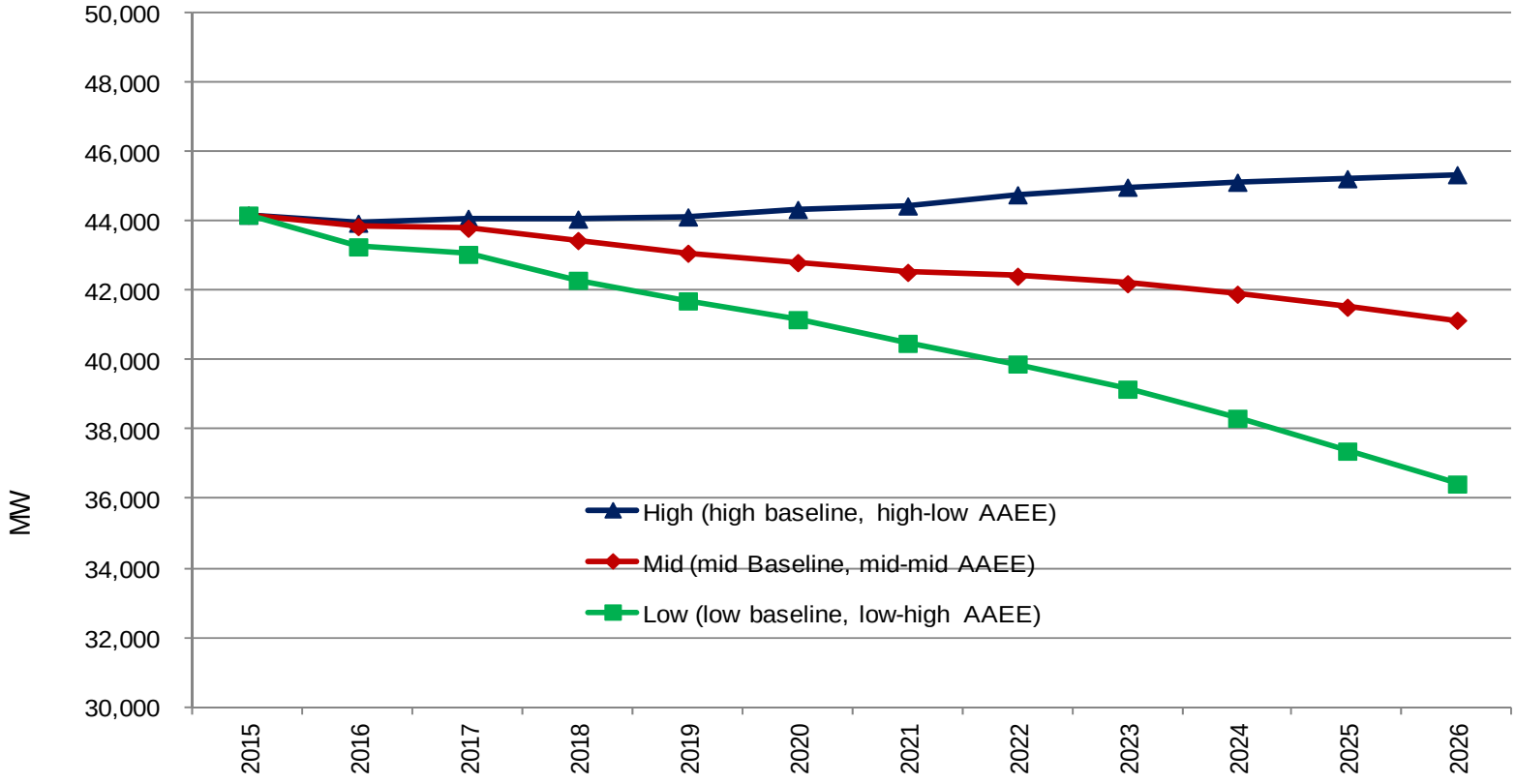
AAEE Scenarios

- High Baseline Demand-Low AAEE Savings (high-low)
- Mid Baseline Demand-Low AAEE Savings (mid-low)
- Mid Baseline Demand-Mid AAEE Savings (mid-mid)
- Mid Baseline Demand-High AAEE Savings (mid-high)
- Low Baseline Demand-High AAEE Savings (low-high)

Combined IOU Service Territory Baseline and Adjusted Peak Forecasts: Mid Cases



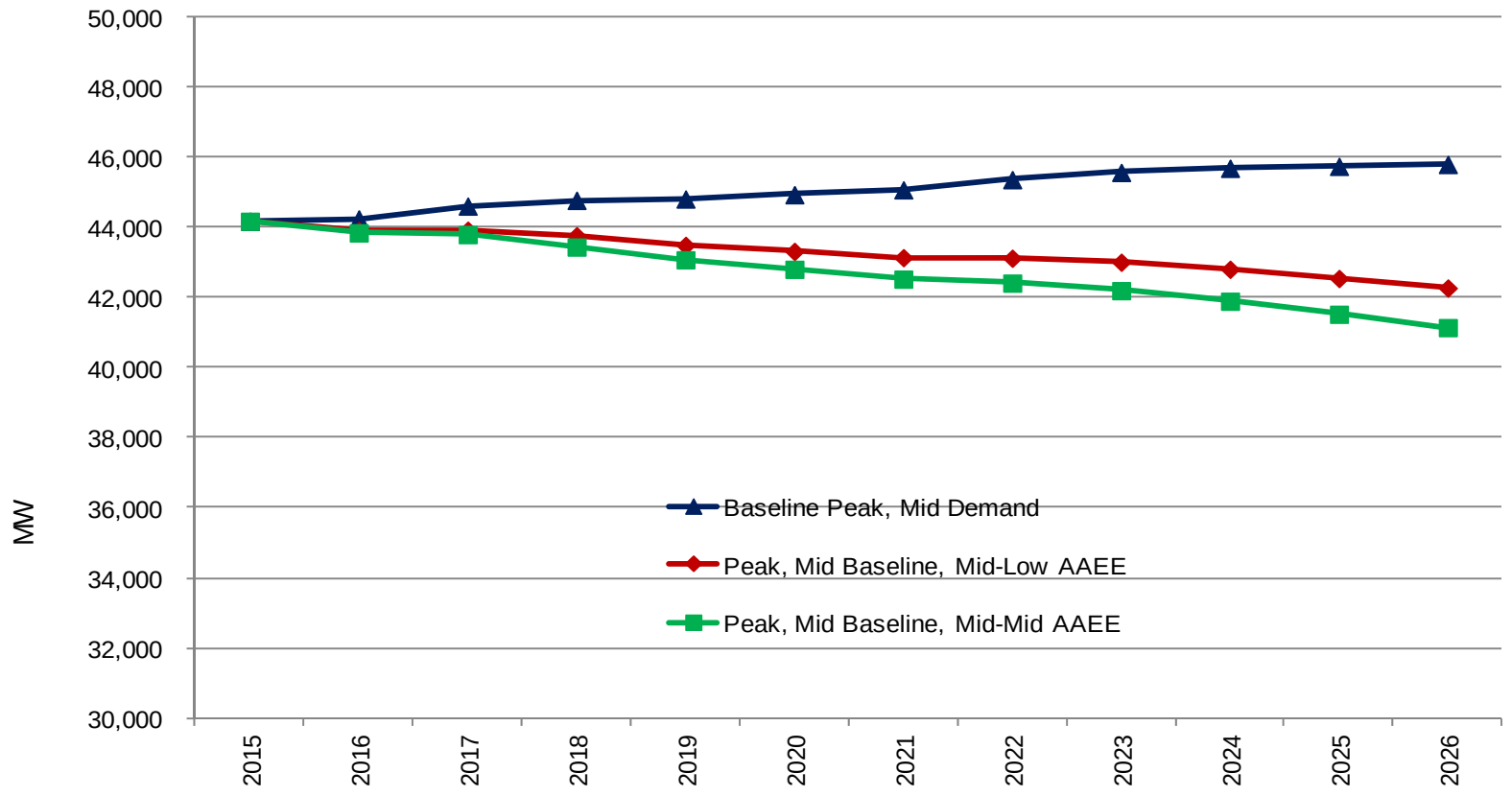
Combined IOU Baseline and Adjusted Peak Forecasts: 3 Demand Scenarios



Choice of Managed Forecasts

- *CED 2015 Revised* mid baseline demand combined with:
  - Mid baseline-mid AAEE (mid-mid) for system and flexibility planning
  - Mid baseline-low AAEE (mid-low) for localized planning

Choice of Managed Forecasts, Combined IOU Service Territories



Moving Forward

- Forecast update in late 2016
- Analysis for and incorporation of SB 350 and AB 802
- Continued improvement in forecast methods
  - PV modeling
  - Hourly load forecasting
- Wider coverage for AAEE (more POUs)
- Continued consultation and alignment efforts with other agencies and utilities