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Annual Peak Hour Shift Impact Analysis

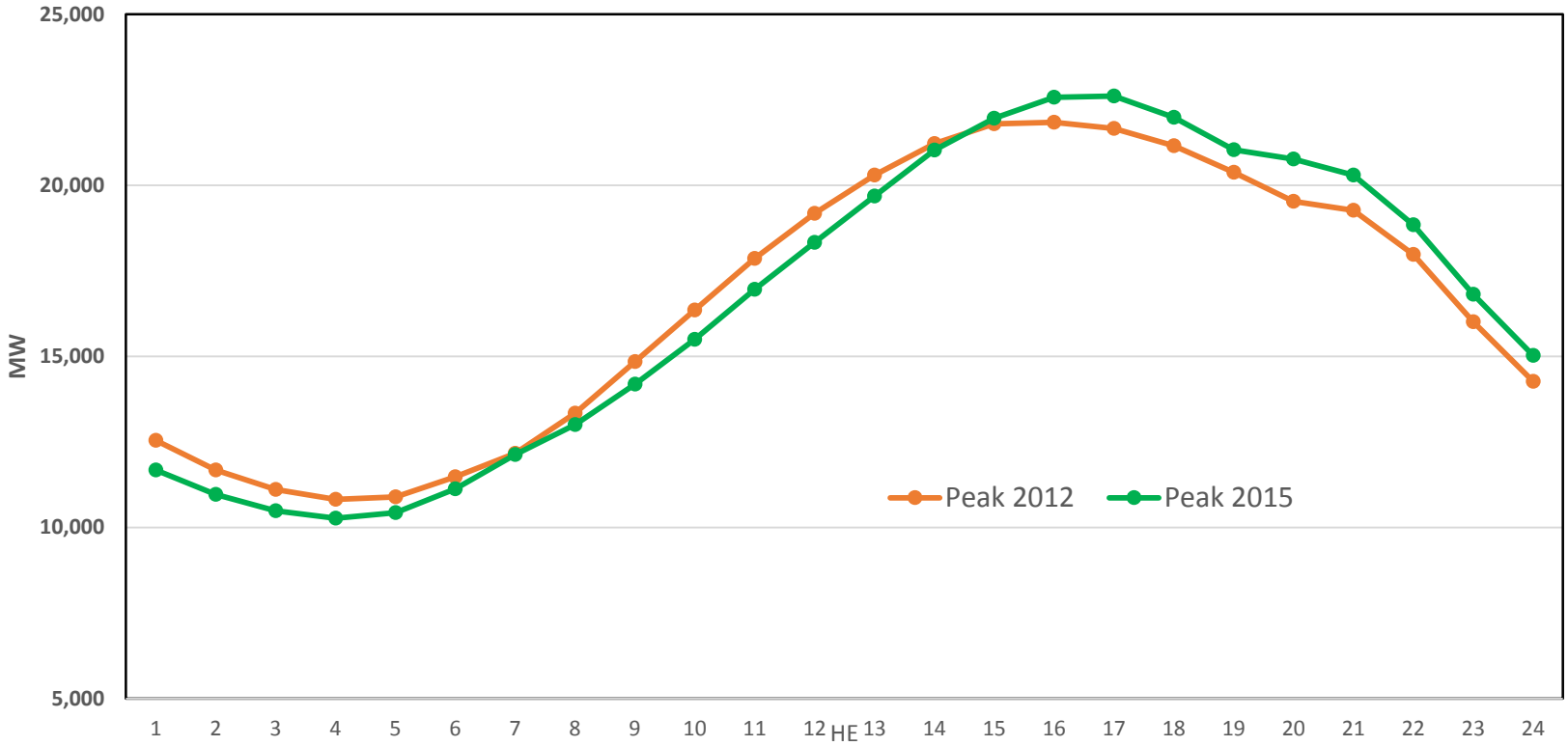
For discussion at CEC's 2016 IEPR Workshop

June 23, 2016

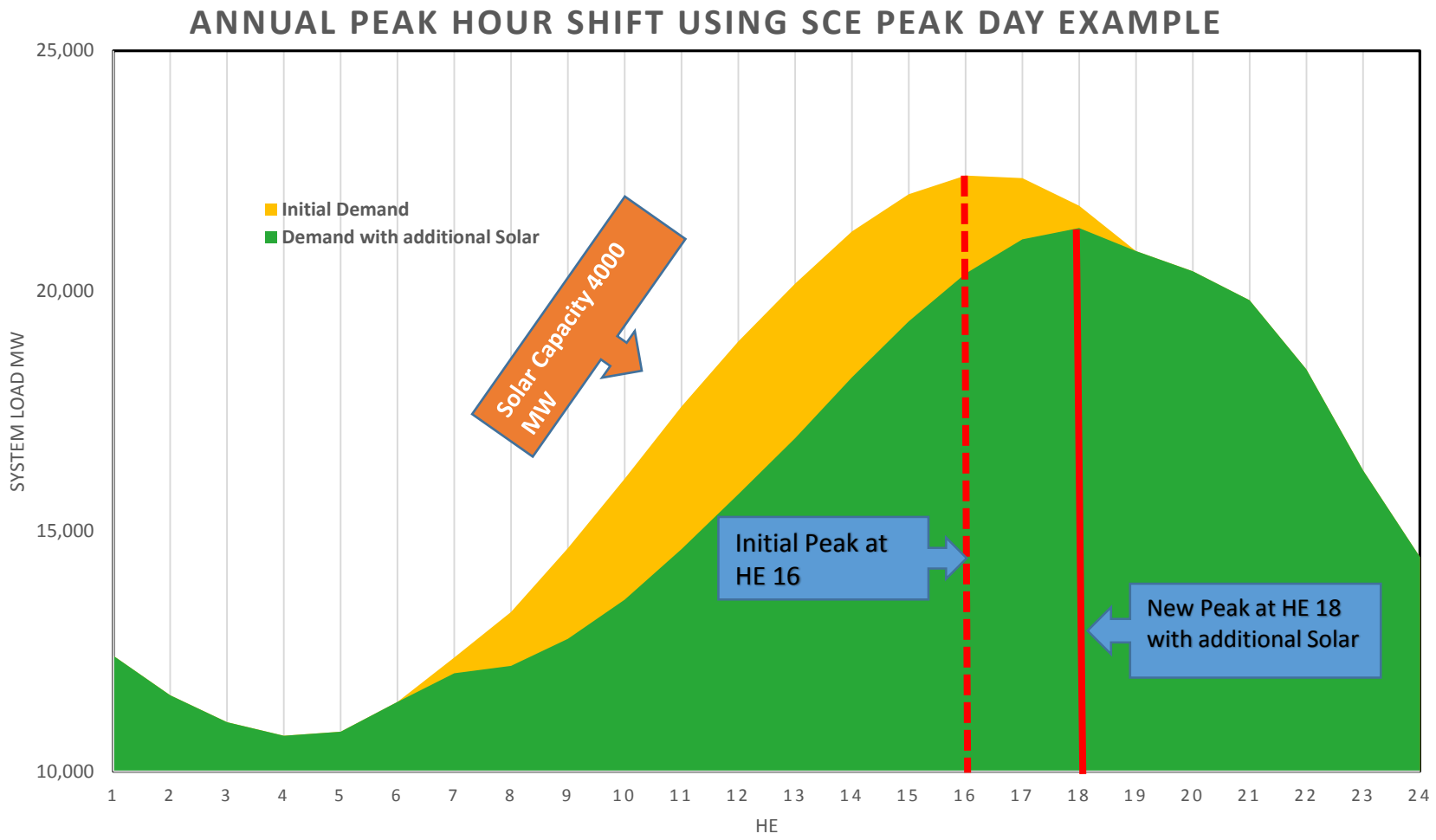
Historical Observations of Annual Peak Hour Shift

SCE already observed the annual peak hour shifting from HE 16 to HE 17.

Actual Annual SCE Peak Day Load Profiles in 2012 and 2015



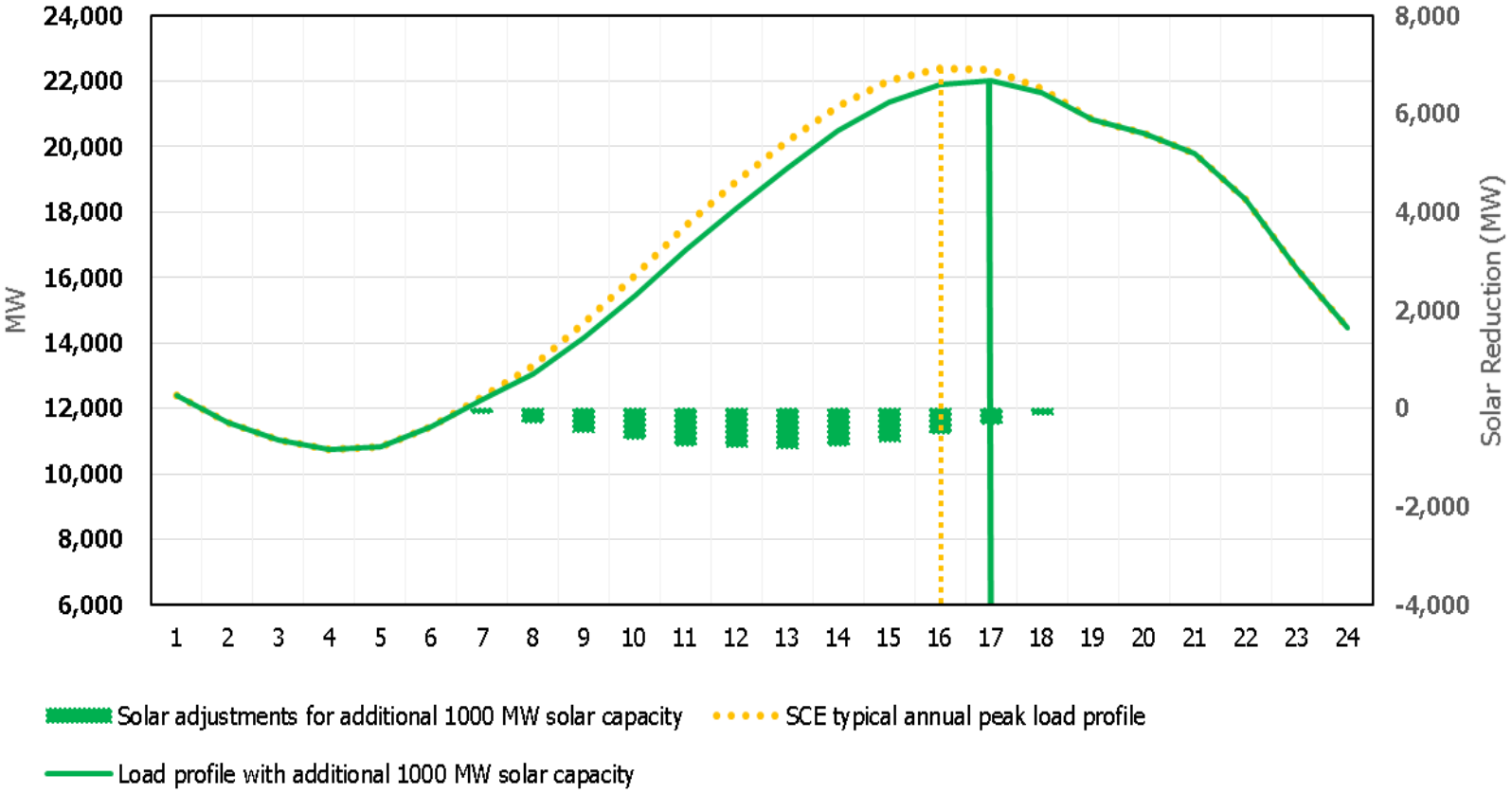
An Illustrative Example of Solar PV Impact on Annual Peak Hour Shift



- SCE typical annual peak hourly profile
- New SCE annual peak day hourly profile given 4,000 MW incremental solar PV capacity

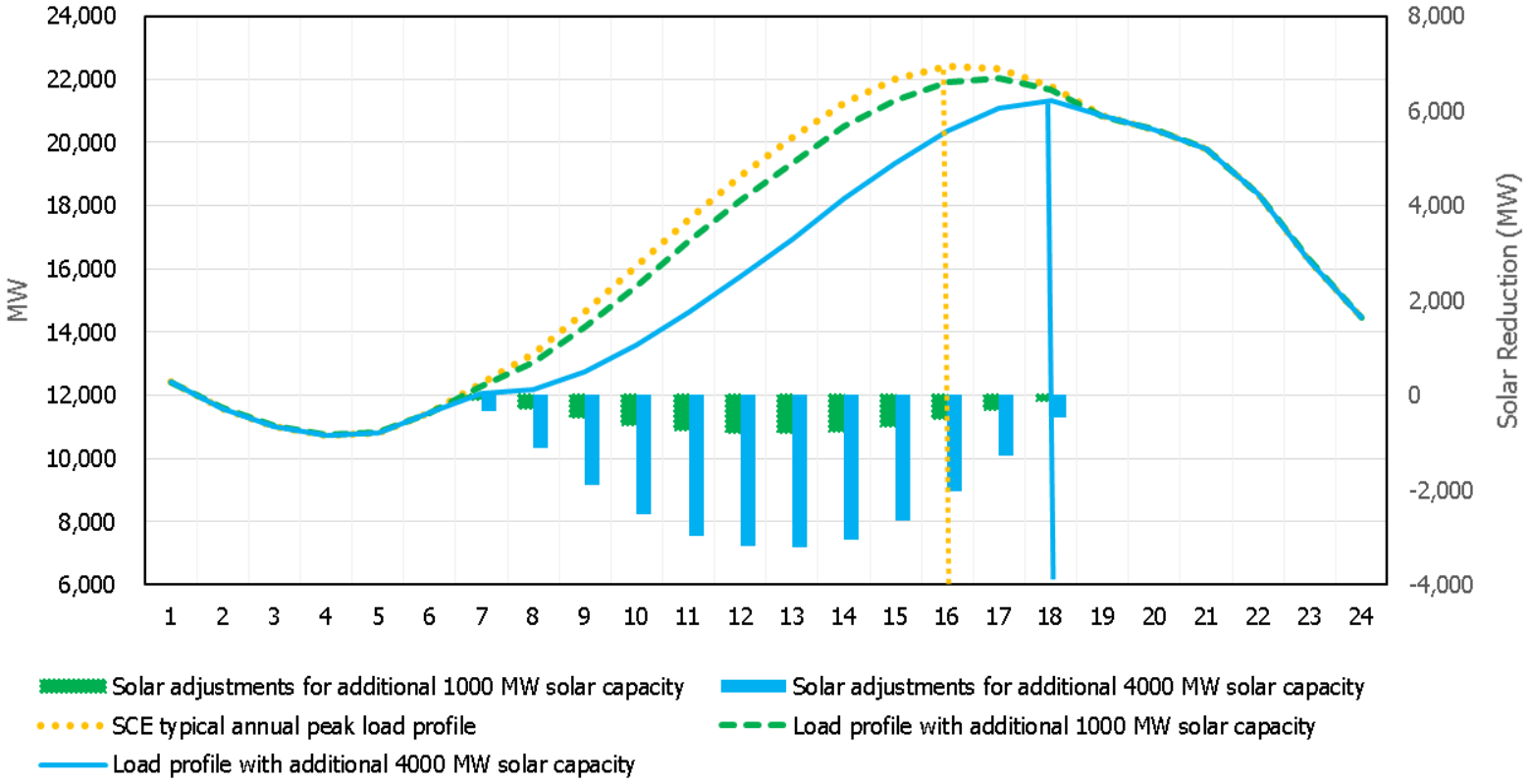
Analyzing Annual Peak Hour Shift – Scenario I

Scenario I: annual peak hour shifts from HE 16 to HE 17 with 1,000 MW Solar PV capacity added



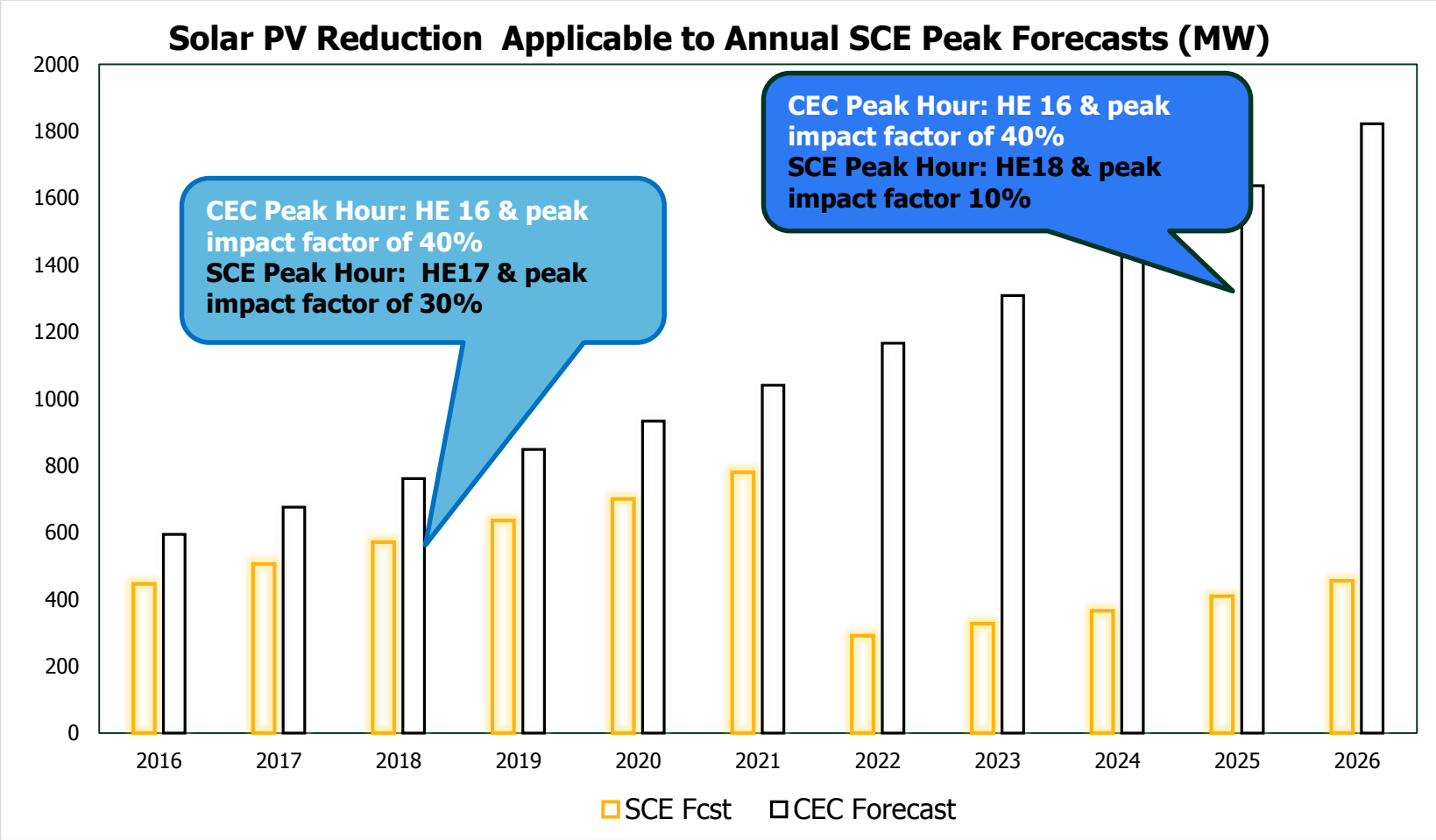
Analyzing Annual Peak Hour Shift – Scenario II

Scenario II: annual peak hour shifts from HE 16 to HE 18 with 4,000 MW Solar PV capacity added



Peak Impact from Incremental Solar Generation

As the annual peak hour is identified to shift to later hours (HE 17 or HE 18), the peak reduction from additional solar PV generation is significantly reduced.



Note that the peak impact factor reflects the contribution of solar PV to the reduction of the annual peak demand forecast. It differs depending on which hour is identified as the annual peak hour.

Annual Peak Forecast Impact Analysis Using Different Solar Peak Impact Factors

The projected SCE planning area peak demand could differ by more than 1,000 MW by 2026 if applying different solar peak impact factor from SCE's analysis.