



California Energy Commission

Self-Generation Forecast CED 2017 Revised

Demand Analysis Working Group
Sacramento, CA

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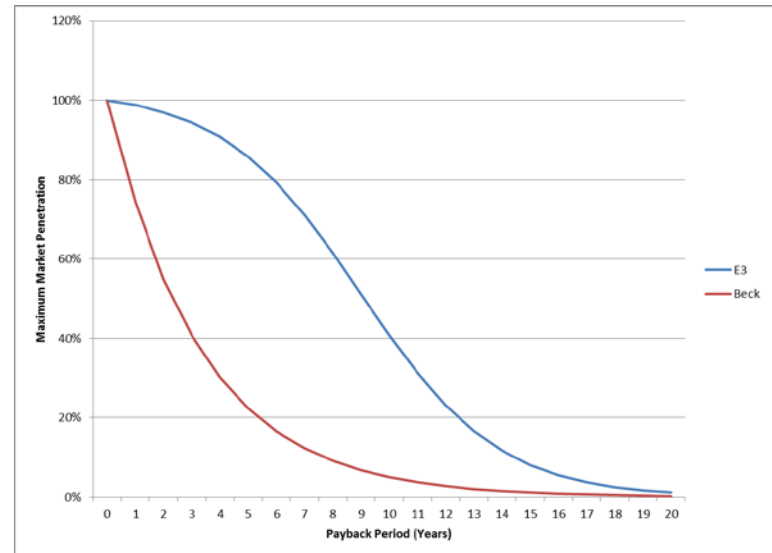
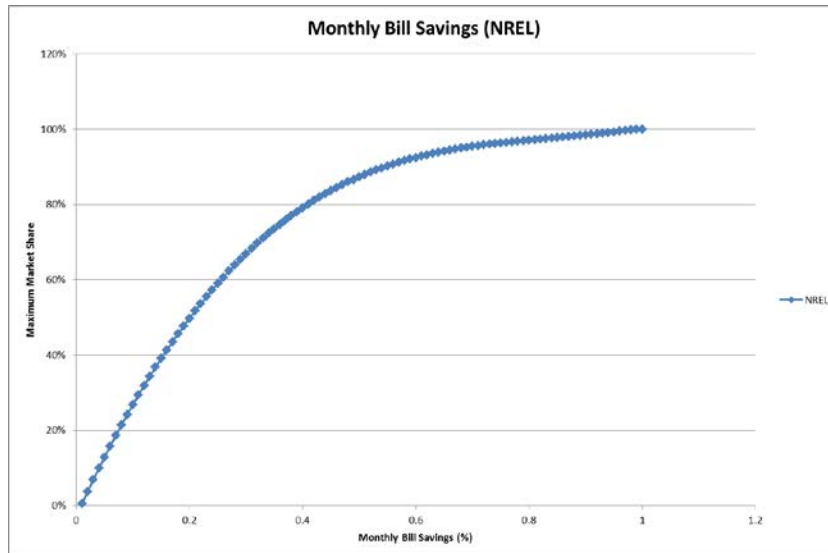
Updates For Revised Forecast

- Updated historical data
 - LSE supplied PV interconnection data requested through Forms for 2015/2017 IEPR (2012-2016)
 - Rebate program data for years before 2012
 - CSI/SGIP/ERP/NSHP/POU SB 1
- Updated economic/demographic data
- Updated scenarios
 - PV adoption differentiated by response to cost-benefit results by scenario
 - Shows greater variation among the three demand scenarios relative to preliminary forecast



Adoption Curve Vary by Scenario

Low Demand scenario uses Monthly Bill Savings for IOUs/SMUD based on NREL study and an updated payback curve from CPUC NEM tool for other POU's. High Demand scenario uses payback curve from R.W Beck/EIA for all LSEs. PV capacity in Mid Demand Scenario is average of additions in Low and the High scenarios





Other Updates

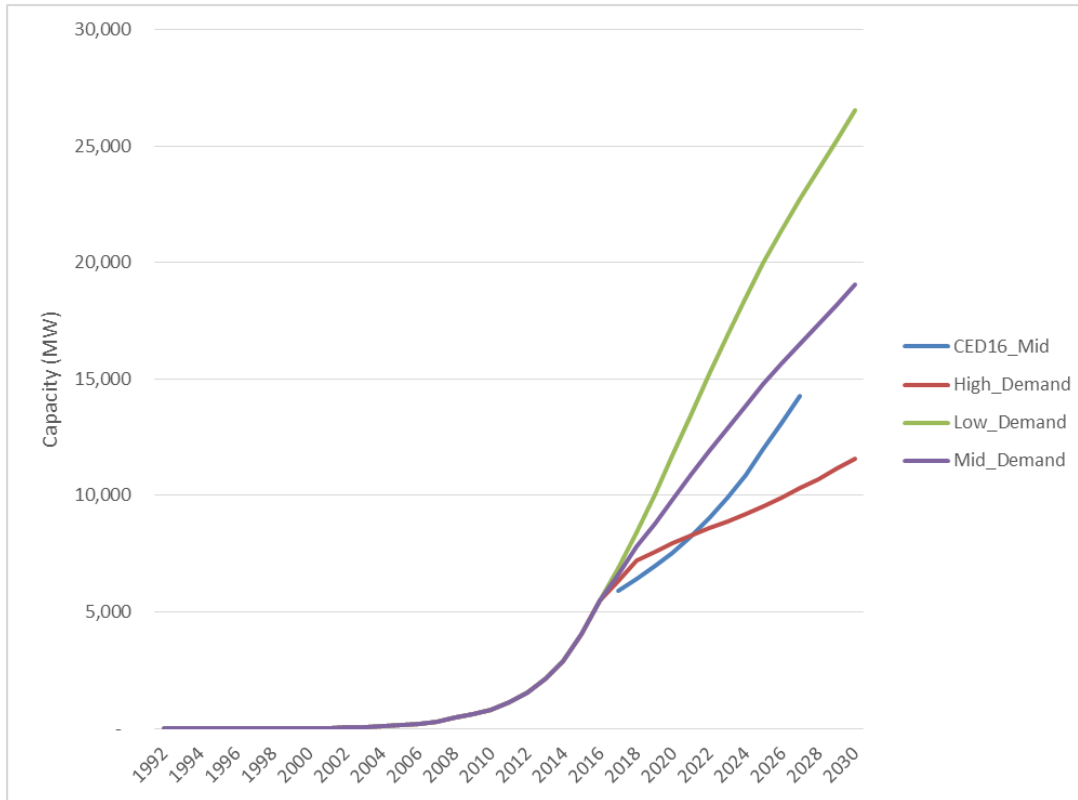
- Uncommitted PV forecast
 - Responds to stakeholder comments/requests for incorporating treatment of zero net energy homes in demand forecast
 - Based on data supplied by staff in Energy Efficiency Division
 - Low Scenario assumes 90% of new single family homes will have PV
 - High Scenario assumes 70% of new single family homes will have PV
 - Mid Scenario assumes the average of additions in Low and High scenarios (~80% of new single family homes)



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Baseline Statewide Results (PV Capacity- MW)

Annual growth rates between 5% in High Demand to 9% in Low Demand





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2030 Baseline Statewide Results (PV Capacity - MW) – Planning Area and Scenario

| | High_Demand | Low_Demand | Mid_Demand |
|-------|---------------|---------------|---------------|
| BUGL | 46 | 66 | 56 |
| IID | 111 | 190 | 151 |
| LADWP | 519 | 773 | 646 |
| NCNC | 521 | 1,082 | 801 |
| OTHER | 21 | 21 | 21 |
| PGE | 5,592 | 11,790 | 8,691 |
| SCE | 3,683 | 10,113 | 6,898 |
| SDGE | 1,098 | 2,530 | 1,814 |
| | 11,591 | 26,564 | 19,078 |



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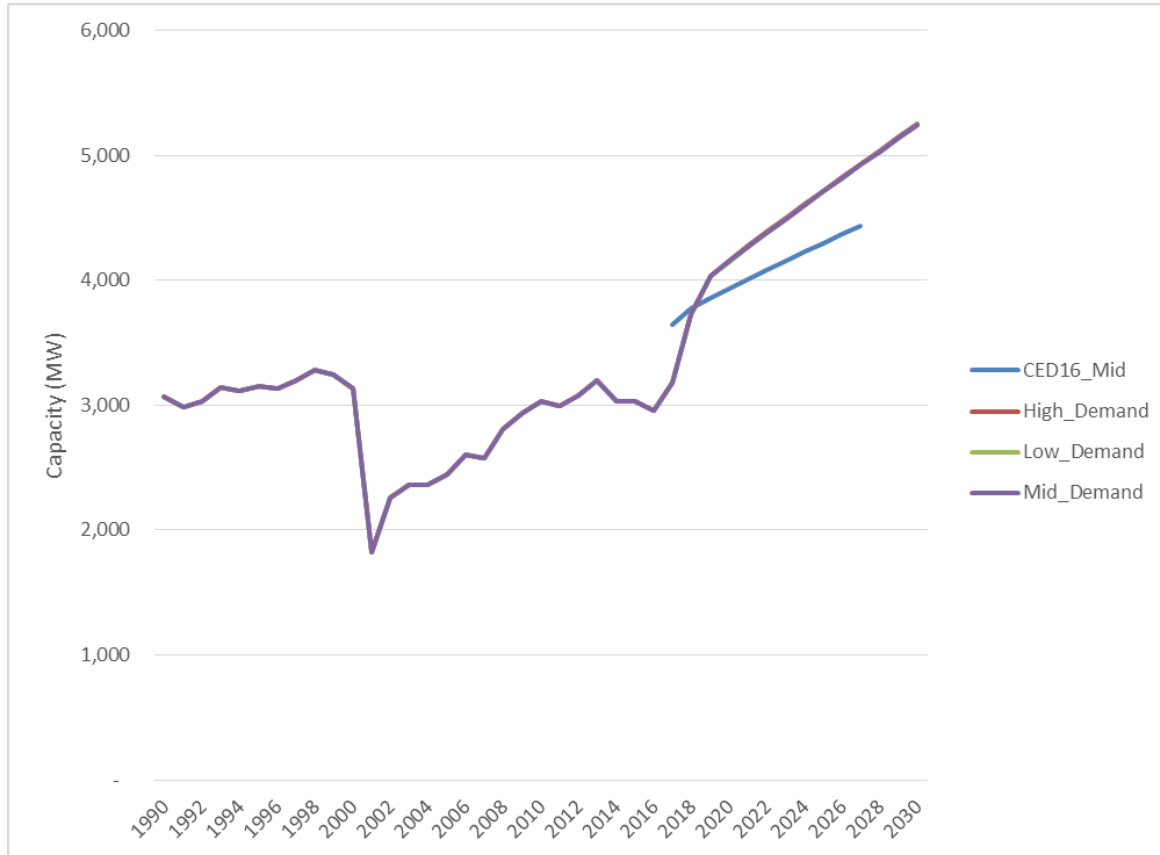
2030 Baseline Statewide Results (PV Energy - GWh) – Planning Area and Scenario

| | High_Demand | Low_Demand | Mid_Demand |
|-------|---------------|---------------|---------------|
| BUGL | 80 | 115 | 97 |
| IID | 191 | 330 | 261 |
| LADWP | 897 | 1,344 | 1,121 |
| NCNC | 898 | 1,870 | 1,384 |
| OTHER | 34 | 34 | 34 |
| PGE | 9,618 | 20,451 | 15,035 |
| SCE | 6,520 | 17,995 | 12,257 |
| SDGE | 1,930 | 4,496 | 3,213 |
| | 20,170 | 46,636 | 33,403 |



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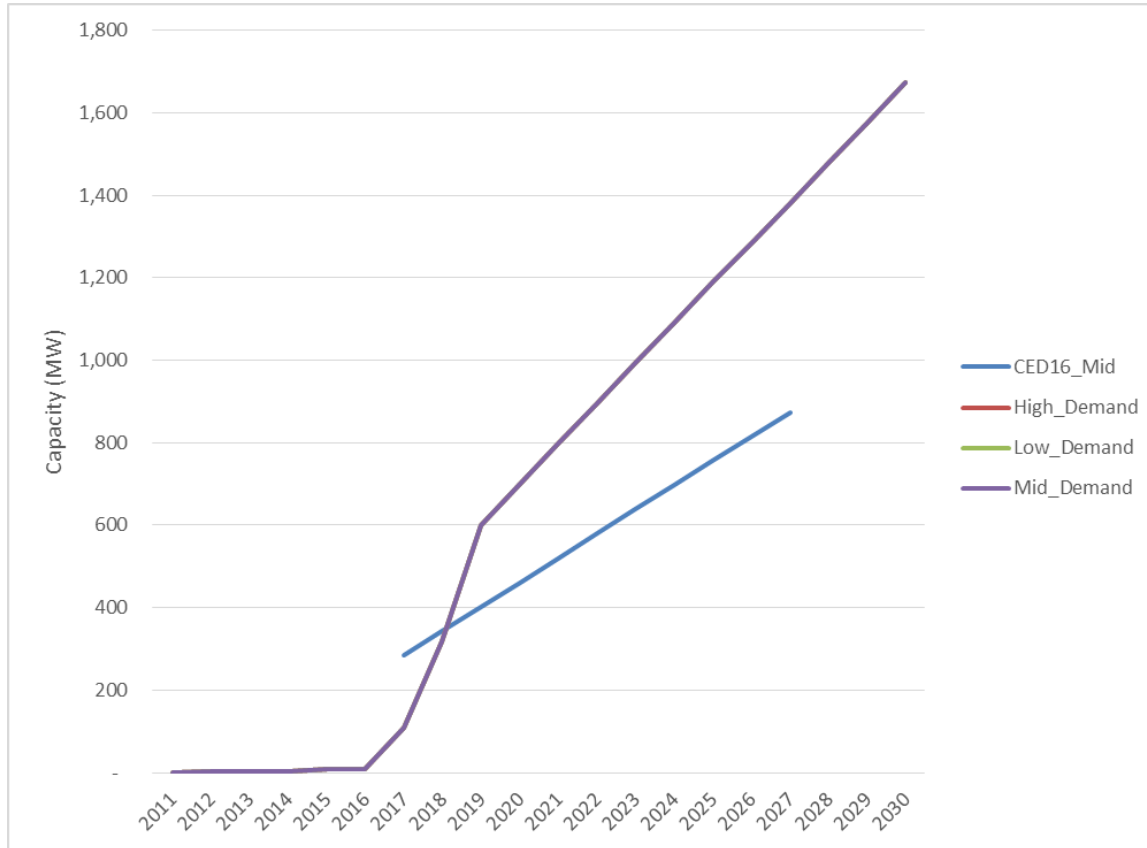
Baseline Statewide Results (Non-PV Capacity - MW)





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Baseline Statewide Results (Energy Storage Capacity - MW)





Zero Net Energy Homes

- Incremental to forecasted adoption of PV in baseline forecast
- Limited to new single family homes starting in year 2020
- Low Scenario assumes 90% of new single family homes will have PV
- High Scenario assumes 70% of new single family homes will have PV
- Mid Scenario assumes the average of additions in Low and High scenarios (~80% of new single family homes)



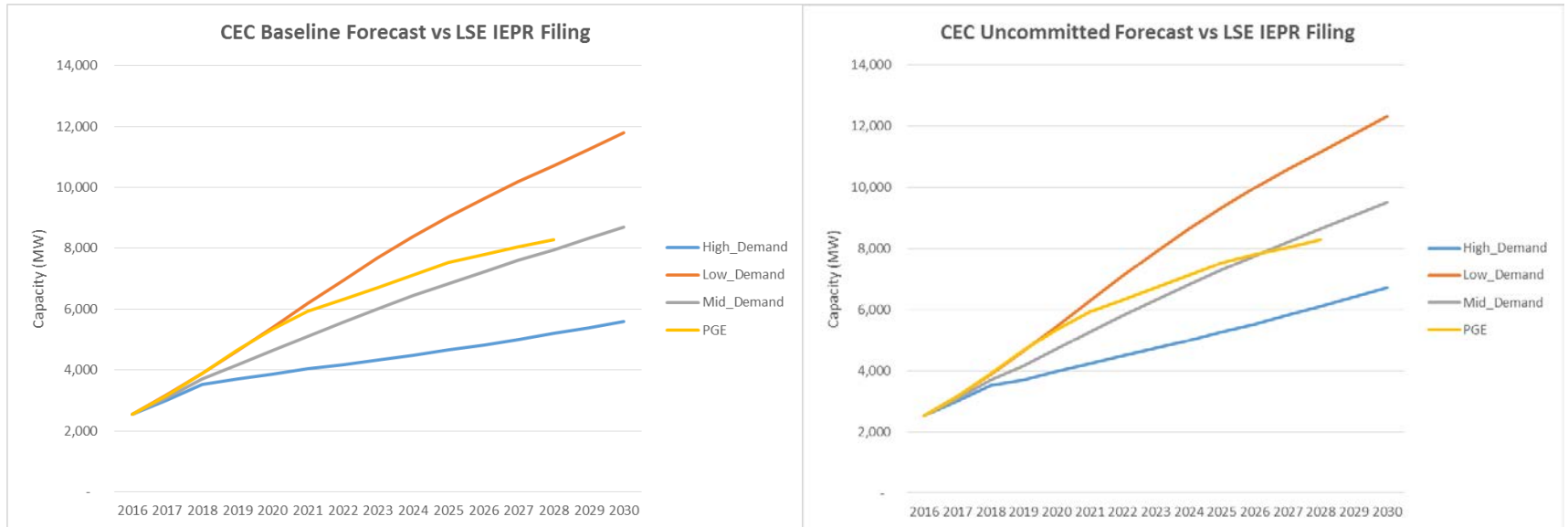
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Comparison of cumulative PV adoption in 2030 Baseline forecast vs Uncommitted forecast

| | High_Demand | | | Low_Demand | | | Mid_Demand | | |
|--------------------|---------------|---------------|--------------|---------------|---------------|--------------|---------------|---------------|--------------|
| | Baseline | Uncommitted | Difference | Baseline | Uncommitted | Difference | Baseline | Uncommitted | Difference |
| BUGL | 46 | 53 | 7 | 66 | 74 | 8 | 56 | 63 | 8 |
| IID | 111 | 189 | 79 | 190 | 282 | 91 | 151 | 236 | 85 |
| LADWP | 519 | 643 | 123 | 773 | 913 | 140 | 646 | 778 | 131 |
| NCNC | 521 | 736 | 216 | 1,082 | 1,303 | 221 | 801 | 1,020 | 218 |
| PGE | 5,592 | 6,705 | 1,112 | 11,790 | 12,320 | 530 | 8,691 | 9,512 | 821 |
| SCE | 3,683 | 4,693 | 1,010 | 10,113 | 10,730 | 618 | 6,898 | 7,712 | 814 |
| SDGE | 1,098 | 1,305 | 206 | 2,530 | 2,614 | 83 | 1,814 | 1,959 | 145 |
| Grand Total | 11,591 | 14,344 | 2,753 | 26,564 | 28,256 | 1,692 | 19,078 | 21,300 | 2,222 |

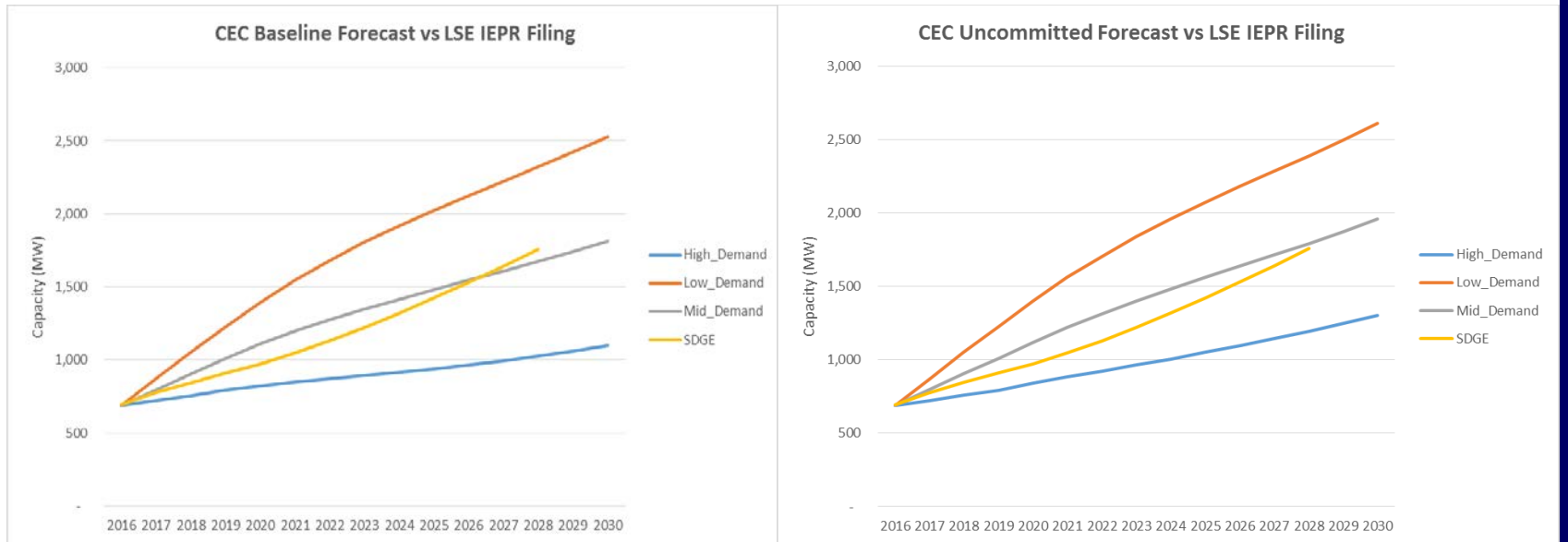


PV Forecast Comparison - PGE





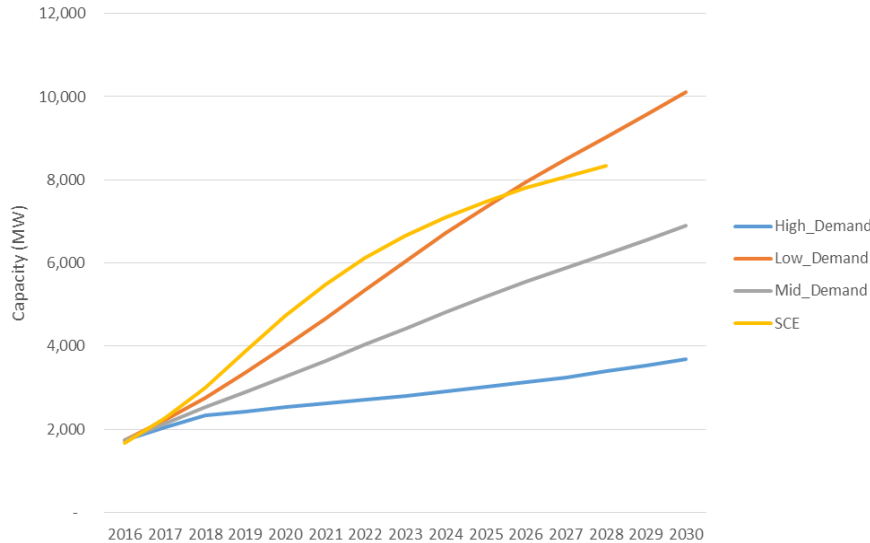
PV Forecast Comparison - SDGE





PV Forecast Comparison - SCE

CEC Baseline Forecast vs LSE IEPR Filing



CEC Uncommitted Forecast vs LSE IEPR Filing

