

DOCKETED

Docket Number:	18-IEPR-04
Project Title:	Energy Demand Forecast Update
TN #:	224102
Document Title:	Presentation - Behind-the-Meter Photovaltaic Systems
Description:	Presentation by Sudhakar Konala at the July 10 IEPR Commissioner Workshop on the 2018 California Energy Demand Forecast Update
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Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	7/9/2018 4:35:31 PM
Docketed Date:	7/9/2018



Behind-the-Meter Photovoltaic Systems

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Background: Data Sources

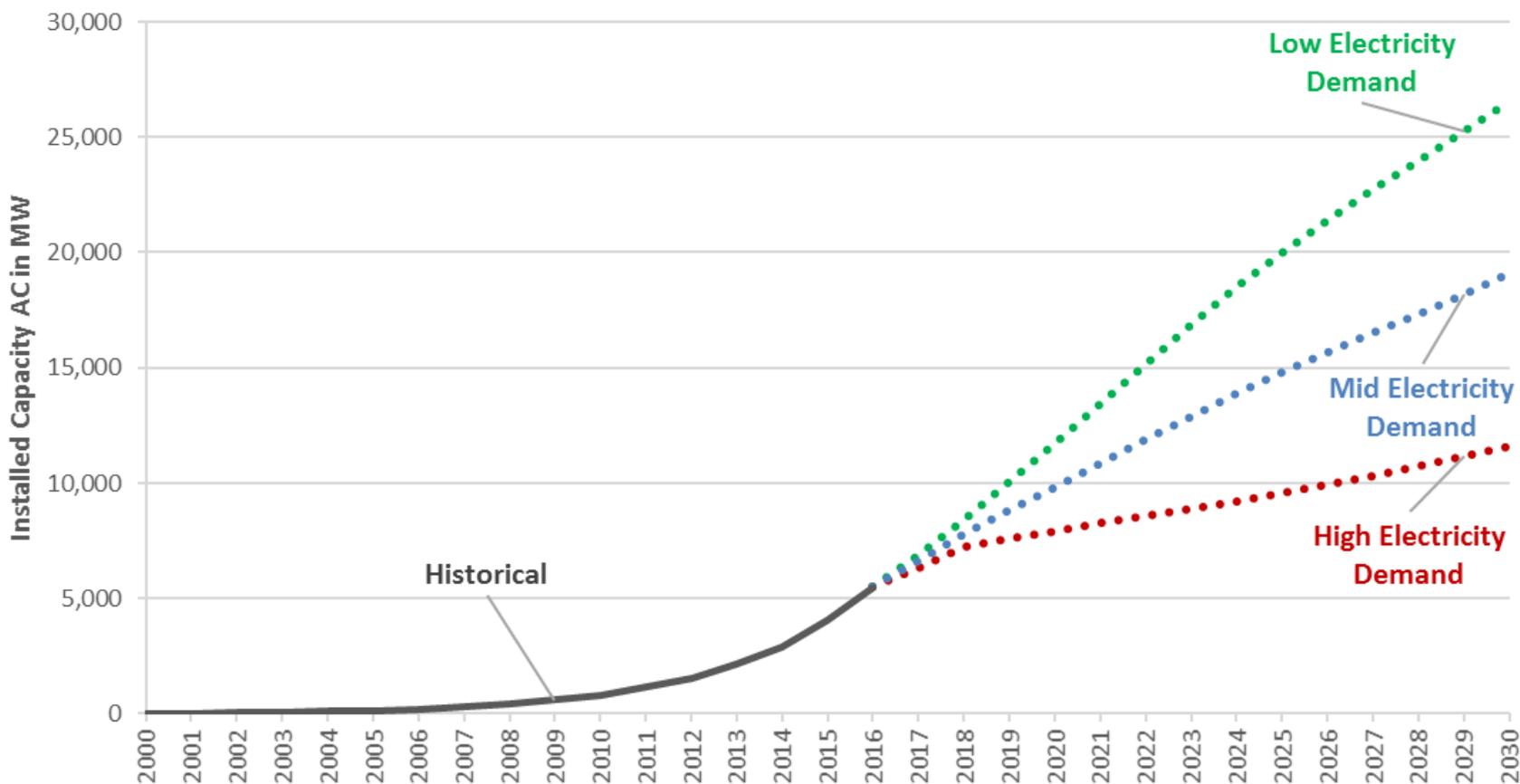
- Build a comprehensive dataset combining all available sources of PV data.
- Example: Calculate installed PV capacity using...
 - Interconnection Data
 - IEPR Form 1.8 Utility Interconnection Filings
 - NEM Currently Interconnected Data Set
 - Solar Incentive Program Data
 - California Solar Initiative
 - Self-Generation Incentive Program (SGIP)
 - New Solar Homes Partnership (NSHP)
 - Emerging Renewables Program (ERP)
 - SB1 POU Program Data

NOTE: Depending on the year, different sources of data for PV may be used.



Review: 2017 BTM PV Forecast

BTM PV - Statewide Capacity

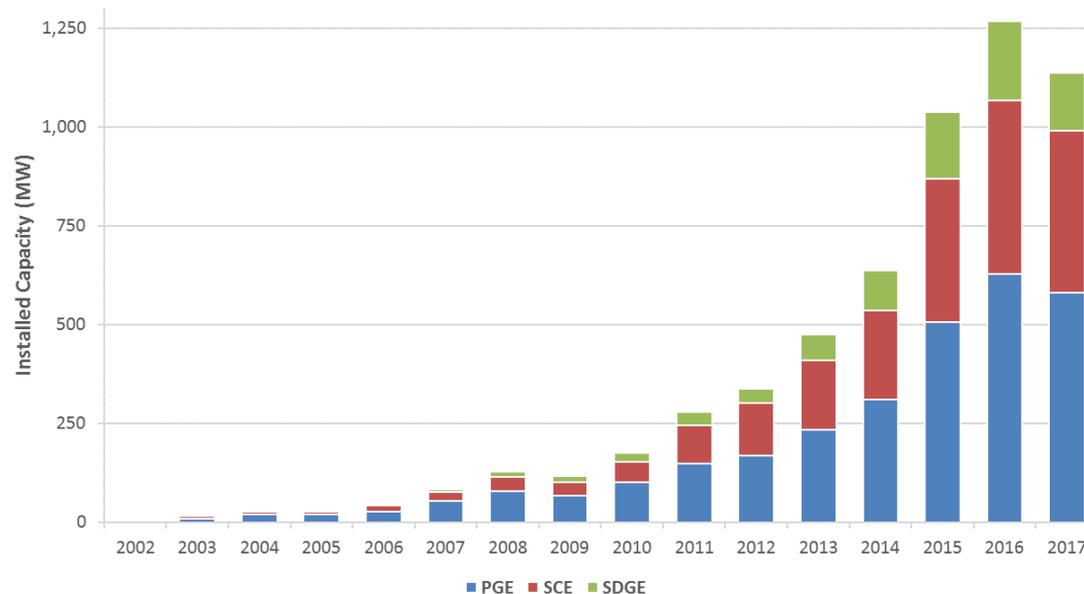




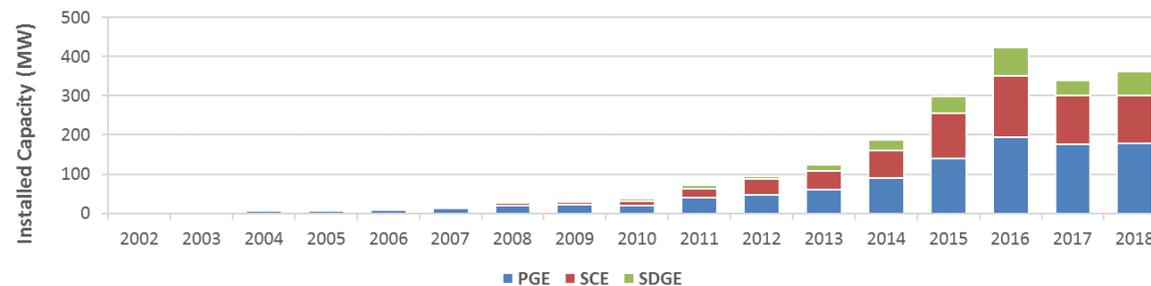
Recent Trends – BTM PV Installations

- 2017
 - New PV installations decreased by 10% from 2016 levels
 - Return to normal levels from a spike caused by an expected expiration of federal solar investment tax credit?
- 2018
 - Data for first four months
 - Slight growth in new installations from 2017

IOU - Newly Installed BTM PV Capacity



IOU - Newly Installed BTM PV Capacity (Jan - Apr Only)

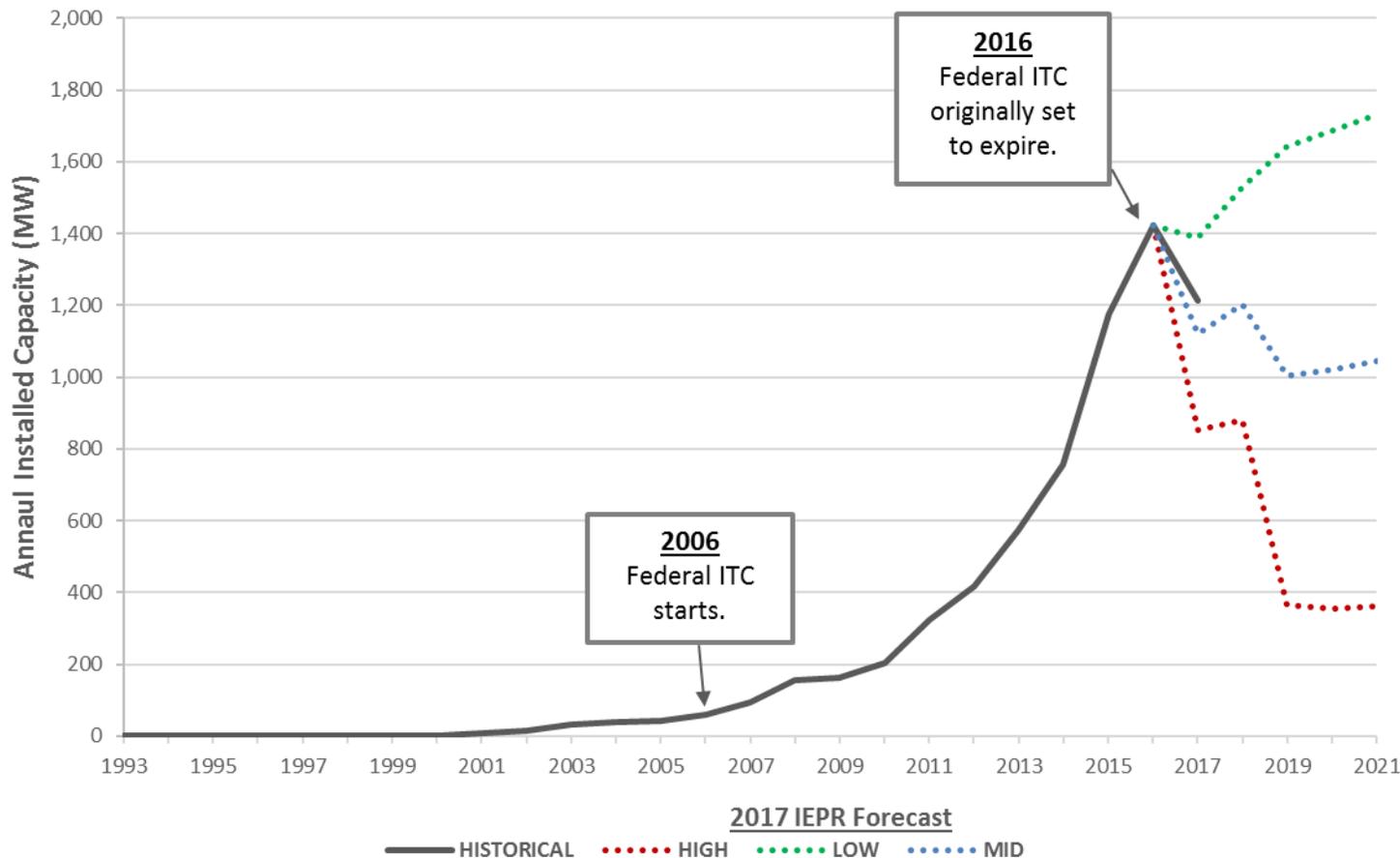


source: www.californiadgstats.ca.gov "NEM Currently Interconnected Data Set".



2017 PV Forecast vs. Measured Installations

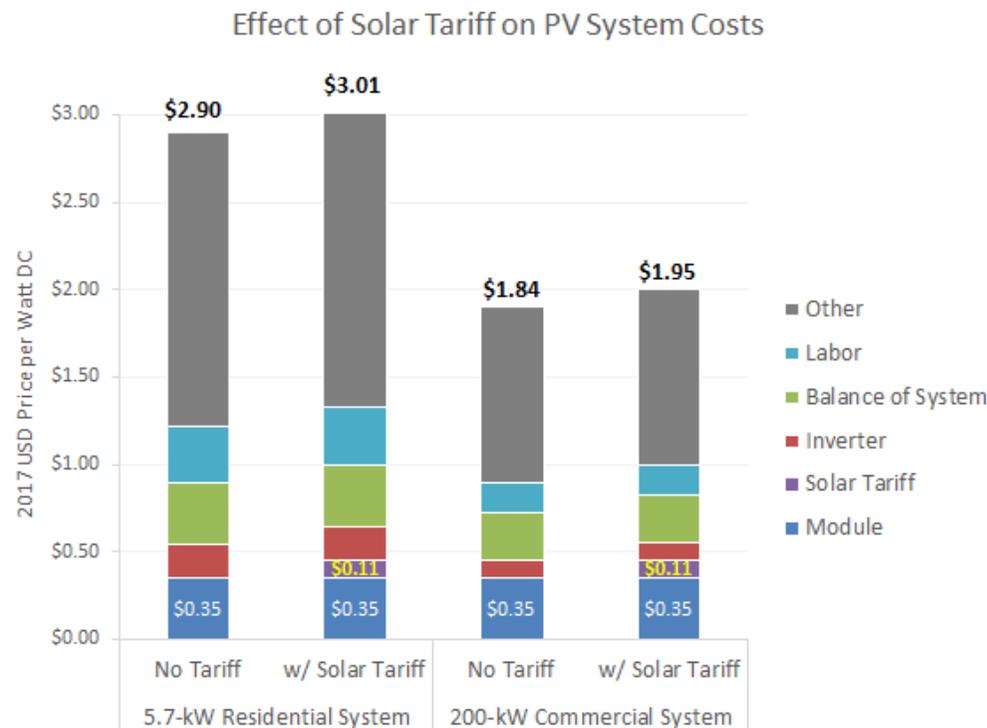
New Behind-the-Meter PV Installations in California





2018 BTM PV Forecast Update

- Update historical data
 - 2017 PV installation data
 - Econ / Demo
 - Housing count
 - Installation costs
- New tariff on imported PV modules
 - Tariff = 30% of module cost in 2018
 - 25% in 2019
 - 20% in 2020
 - 15% in 2021
 - Eliminated thereafter
 - Not expected to have major impact on residential or commercial installation costs
- 2019 Title 24 Building Standards



Source: Energy Commission analysis of National Renewable Energy Laboratory data.

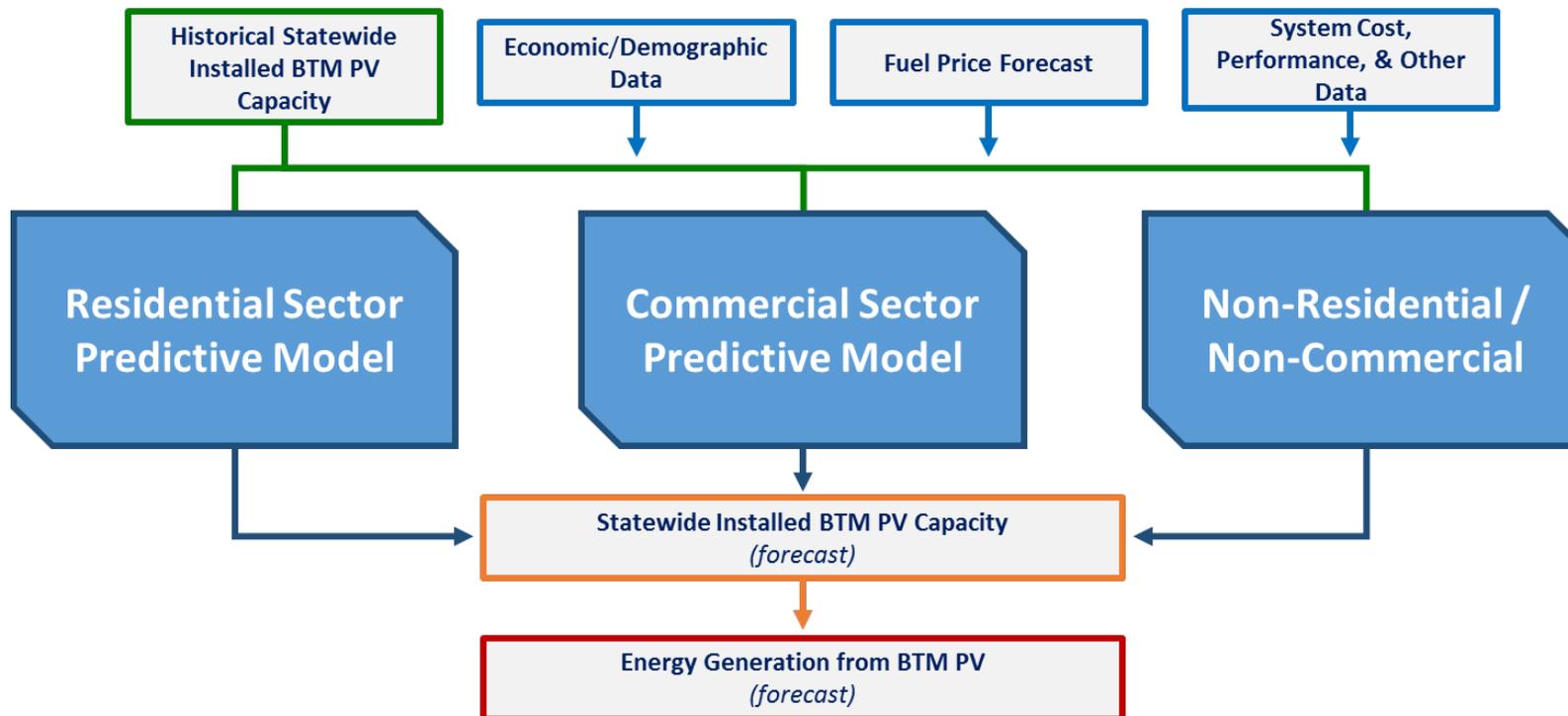


AAPV Forecast Update

- Additional achievable photovoltaic (AAPV) adoption
 - Accounts for PV system requirements for new homes (2019 Title 24 standards)
 - In baseline forecast, a certain percentage of new homes adopt PV systems
 - AAPV = difference between PV adoptions for new homes due to 2019 Title 24 regulations vs. new home PV adoptions already in baseline forecast
- Future of AAPV forecast
 - For 2018 IEPR update, AAPV remains separate from baseline forecast
 - Maintain consistency with AAEE forecast
 - AAPV will be incorporated into 2019 baseline PV forecast
- Revisit / update assumptions from 2017 IEPR AAPV
 - Expected level of compliance
 - Average PV system size for new homes



Energy Commission PV Model



- Residential and commercial models predict PV penetration based on calculated payback / bill savings.



NREL's PV Model

- Distributed Generation Market Demand (dGen) model.
 - Stimulates potential adoption of distributed energy resources for residential, commercial, and industrial entities
 - Bottom up, market-penetration model with “representative agents”
 - Capable of producing more disaggregate geospatial forecast
- NREL staff working to adapt dGEN to California market