



# California Energy Commission

Title: Behind-The-Meter Distributed Generation Forecast Updates

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# List of Acronyms and Initialisms

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**BTM** – Behind-the-Meter

**CEC** – California Energy Commission

**CPUC** – California Public Utilities Commission

**DG** – Distributed Generation

**dGen** – Distributed Generation Market Demand Model

**DGStats** – California Distributed Generation Statistics

**IEPR** – Integrated Energy Policy Report

**IOU** – Investor-Owned Utility

**MW** – Megawatt

**NBT** – Net Billing Tariff

**NEM** – Net Energy Metering

**PV** – Photovoltaics



# BTM DG Forecast Calibrations: Background

- dGen model forecasts NBT BTM DG installations
  - Exogenously added NEM systems reported as interconnected in 2024
    - According to DGStats data, 689 MW BTM PV capacity interconnected under NEM tariff in 2024
  - DGStats data used in preliminary forecast complete through July 2024
    - New data includes NEM interconnections through October 2024
    - Estimated added capacity for Nov. and Dec. 2024
- Storage attachment rates predicted in dGen are lower than what's observed in updated DGStats data
  - Modeled attachment rate: 50-60%
  - Observed attachment rate from DGStats: 69%
- CPUC recommendation to base storage attachment rates on recent NBT installation data
- Calibrated forecast storage attachment rates using DGStats data



# BTM Solar PV Update: Forecast Year 2024

- Prelim forecast added approx. 1,250 MW to IOU planning areas in 2024
- Updated capacity aligns with expected end of year PV additions
- Change only affects 2024 additions

Planning Area	BTM PV Additions in 2024 (MW)		
	DGStats Data (Through Oct. 31)	Prelim Mid Forecast	Updated Mid Forecast
PG&E	573	605	870
SCE	530	545	679
SDG&E	144	101	185
<b>IOUs Totals</b>	<b>1,247</b>	<b>1,252</b>	<b>1,735</b>
<b>Statewide</b>	<b>N/A</b>	<b>1,483</b>	<b>1,966</b>

Source: CEC Staff



# Forecast Average Hourly PV Generation: September 2024

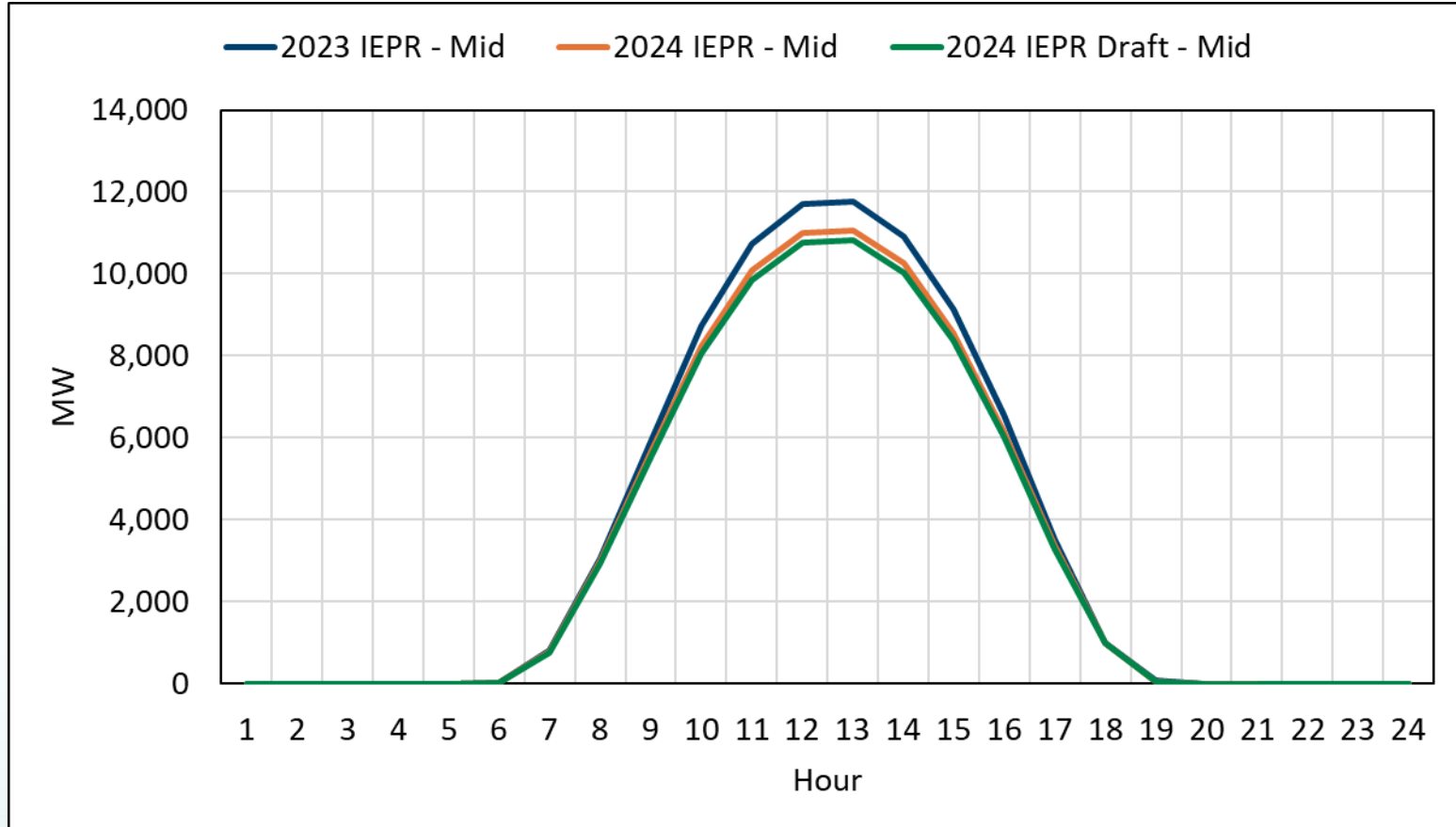
- Nameplate capacity comparison:

2023 IEPR Mid (MW)	2024 IEPR Mid Draft (MW)	2024 IEPR Mid (MW)
15,447	16,675	17,037

- PV generation forecast:

Hour	2024 IEPR Mid Draft (MW)	2024 IEPR Mid (MW)
13	10,809	11,045
17	3,297	3,370

CAISO Region



Source: CEC Staff



# BTM Storage Update: Forecast Year 2024

- Staff externally adjusted residential storage attachment rates to align with recent DG Stats data
- Updated forecast adds 241 MW of storage capacity to IOU planning areas in 2024

Planning Area	Storage Capacity Added in 2024 (MW)		
	DG Stats Data (Through Oct. 31)	Prelim Mid Forecast	Updated Mid Forecast
PG&E	220	129	268
SCE	279	149	283
SDG&E	78	31	44
<b>IOUs Totals</b>	<b>578</b>	<b>355</b>	<b>596</b>
<b>Statewide</b>	<b>N/A</b>	<b>381</b>	<b>632</b>

Source: CEC Staff



# BTM Storage Update: Future Years

- Cumulative capacity in:
  - **2030:** 850 MW higher than prelim forecast
  - **2040:** 1,350 MW higher than prelim forecast

Statewide Cumulative BTM Storage Capacity (MW)		
Year	Prelim. Mid Forecast	Updated Mid Forecast
2024	1,924	2,175
2030	4,334	5,186
2040	6,235	7,586

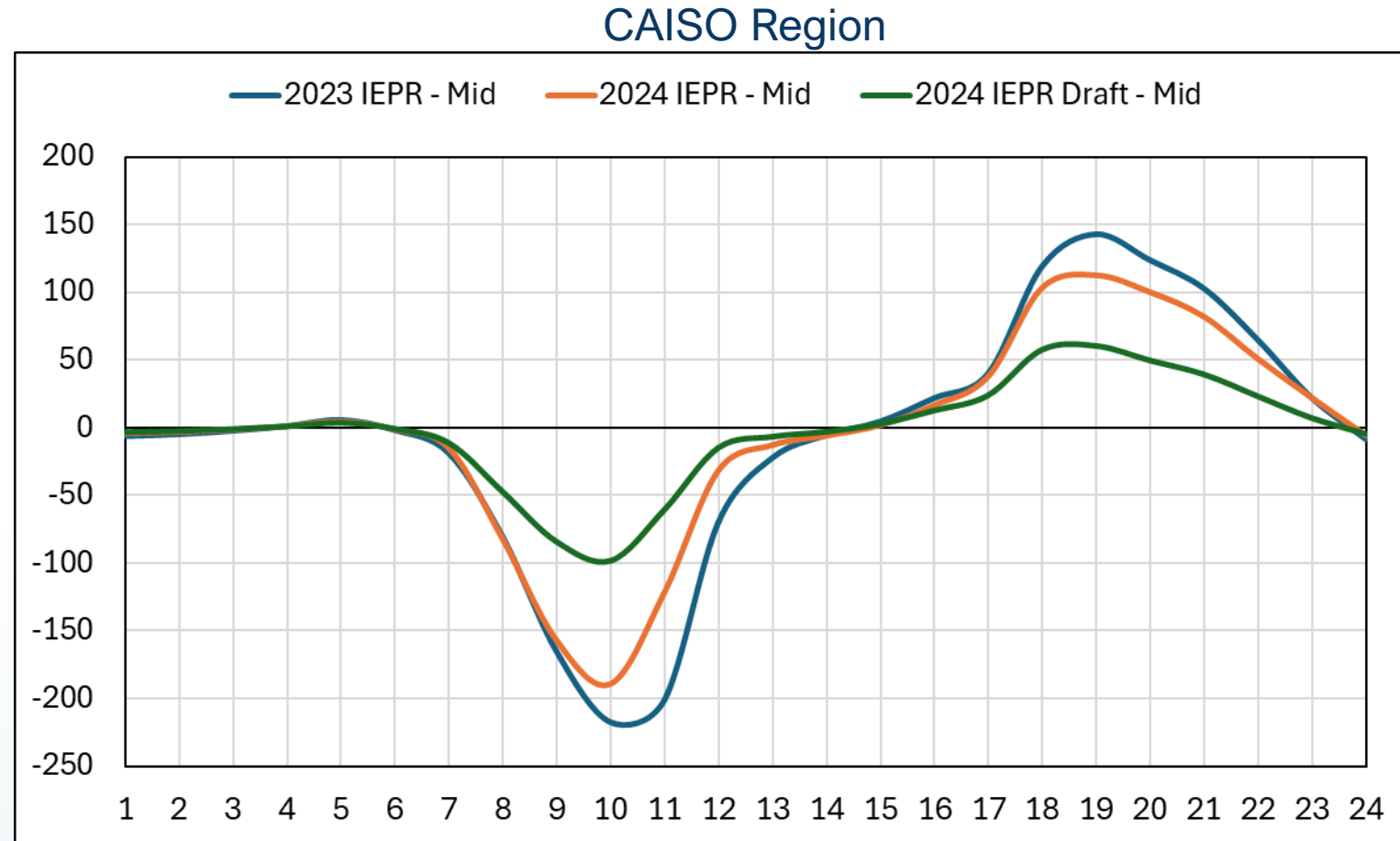
Source: CEC Staff



# Forecast Average Hourly Storage: September 2024

- 2024 IEPR update includes:
  - Less net dispatch compared to the 2023 IEPR, like draft forecast
  - Increased net dispatch compared to draft 2024 IEPR forecast

Hour	2024 IEPR Mid Draft (MW)	2024 IEPR Mid (MW)
17	24	38
19	60	113



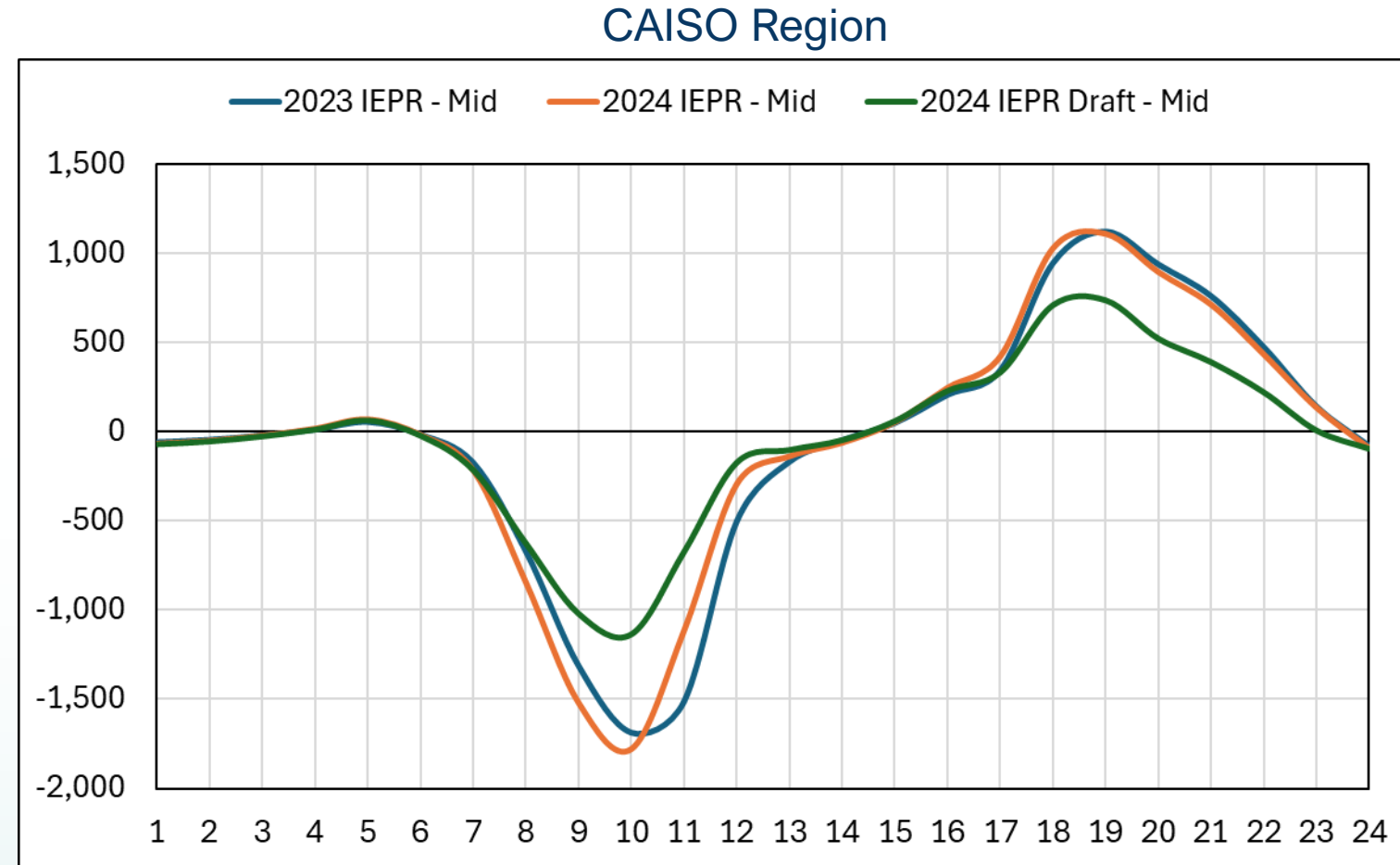
Source: CEC Staff



# Forecast Average Hourly Storage: September 2040

- Similar net dispatch compared to 2023 IEPR
  - Lower PV adoption
  - Higher residential storage attachment rates

Hour	2024 IEPR Mid Draft (MW)	2024 IEPR Mid (MW)
18	713	1,026
19	739	1,107



Source: CEC Staff



# Thank You!