

| <b>DOCKETED</b>         |                                                                            |
|-------------------------|----------------------------------------------------------------------------|
| <b>Docket Number:</b>   | 26-IEPR-03                                                                 |
| <b>Project Title:</b>   | Electricity and Gas Demand Forecast                                        |
| <b>TN #:</b>            | 272219                                                                     |
| <b>Document Title:</b>  | Presentation - Historical Behind-the-Meter Distributed Generation Insights |
| <b>Description:</b>     | 3A. Bobby Wilson, CEC                                                      |
| <b>Filer:</b>           | Raquel Kravitz                                                             |
| <b>Organization:</b>    | California Energy Commission                                               |
| <b>Submitter Role:</b>  | Commission Staff                                                           |
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# Historical Behind-the-Meter Distributed Generation Insights

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# Abbreviations

**BTM** – Behind-the-meter

**CAISO** – California Independent System Operator

**CPUC** – California Public Utilities Commission

**CY** – Calendar Year

**DIB** – Data Integration Branch

**DG** – Distributed Generation

**DGStats** – California Distributed Generation Statistics

**IOU** – Investor-Owned Utility

**HLM** – Hourly Load Model

**MW** – Megawatt

**MWh** – Megawatt-Hour

**NBT** – Net Billing Tariff

**NEM** – Net Energy Metering

**PA** – Planning Area

**PG&E** – Pacific Gas and Electric

**POU** – Publicly Owned Utility

**PV** – Photovoltaics

**QFER** – Quarterly Fuel & Energy Report

**SCE** – Southern California Edison

**SDG&E** – San Diego Gas & Electric

**TPO** – Third Party Owned

**UDC** – Utility Distribution Company



# Relevance

## Historical BTM PV Capacity Use Cases

- Used to calculate historical BTM PV Generation
  - Hourly Load Model (HLM)
  - Sector Models

## Historical BTM PV & Storage Adoption Use Cases

- Input to dGen model
  - Historical deployments used to establish market saturation



# Key Findings

- Share of TPO systems in IOU service territory has doubled since 2023
  - It remains at 50% of applications in 2024, 2025, and Q1 2026
- Application volume in IOU service territory for Q1 2026 is similar to Q1 2025
- Average monthly total BTM PV capacity requested in applications:
  - Q1 2025 - 163 MW AC
  - Q1 2026 - 147 MW AC
- California interconnected 2,000 MW of BTM PV and 1,600 MW of BTM storage in 2025
  - This represents an increase compared to 2024 levels of 1,700 MW BTM PV and 870 MW BTM storage



# Historical BTM PV Adoption Trends



# Historical BTM PV Methodology

- Data from [QFER form 1304b](#)
  - Collected by CEC under Title 20 §1304(b)
  - Cleaned and aggregated using R
  - Quality controlled and compared against:
    - Previous forecast cycle estimates
    - CPUC's DGStats



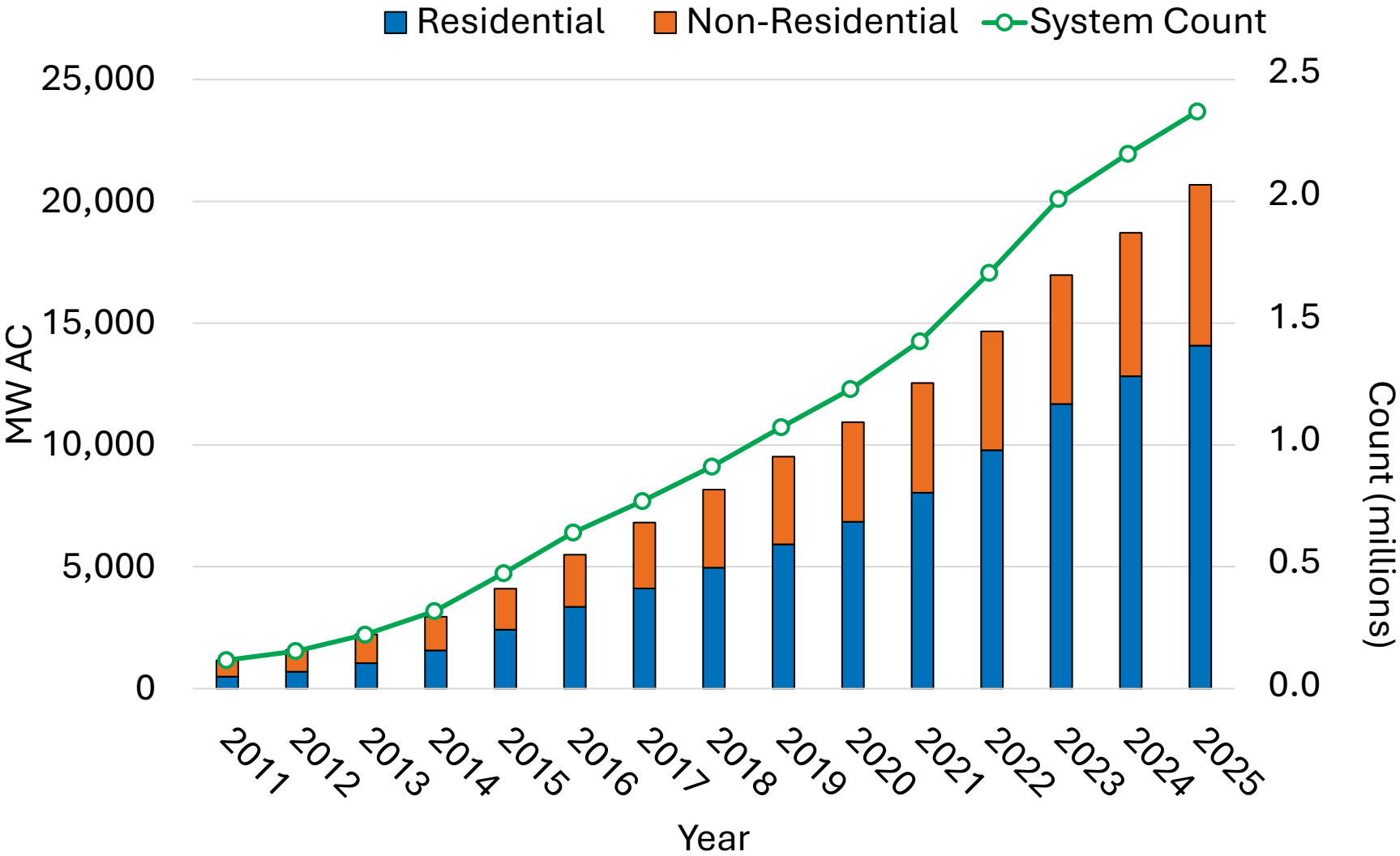
# Historical BTM PV Stats: Statewide

## 2025 System Interconnections

- Residential: 168,000
- Non-residential: 4,600

## 2025 Cumulative BTM PV Stats

| Year | MW     | Count     |
|------|--------|-----------|
| 2024 | 18,700 | 2,166,000 |
| 2025 | 20,700 | 2,339,000 |



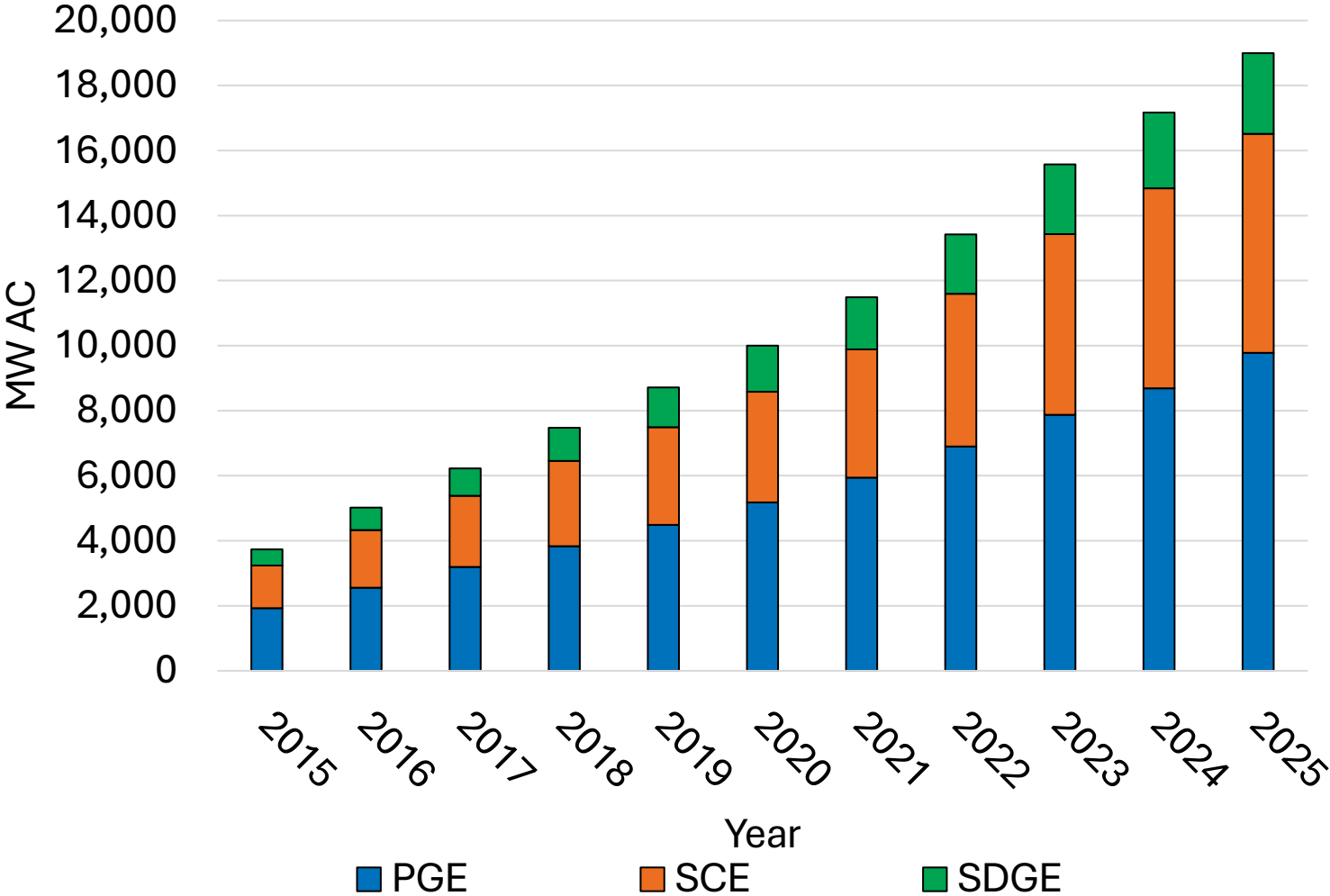


# Historical BTM PV Stats: CAISO

- 1,800 MW of BTM PV capacity added in 2025

2025 Cumulative BTM PV Stats

| Year | PG&E (MW) | SCE (MW) | SDG&E (MW) | CAISO (MW) |
|------|-----------|----------|------------|------------|
| 2015 | 1,900     | 1,300    | 500        | 3,700      |
| 2020 | 5,200     | 3,400    | 1,400      | 10,000     |
| 2025 | 9,800     | 6,700    | 2,500      | 19,000     |

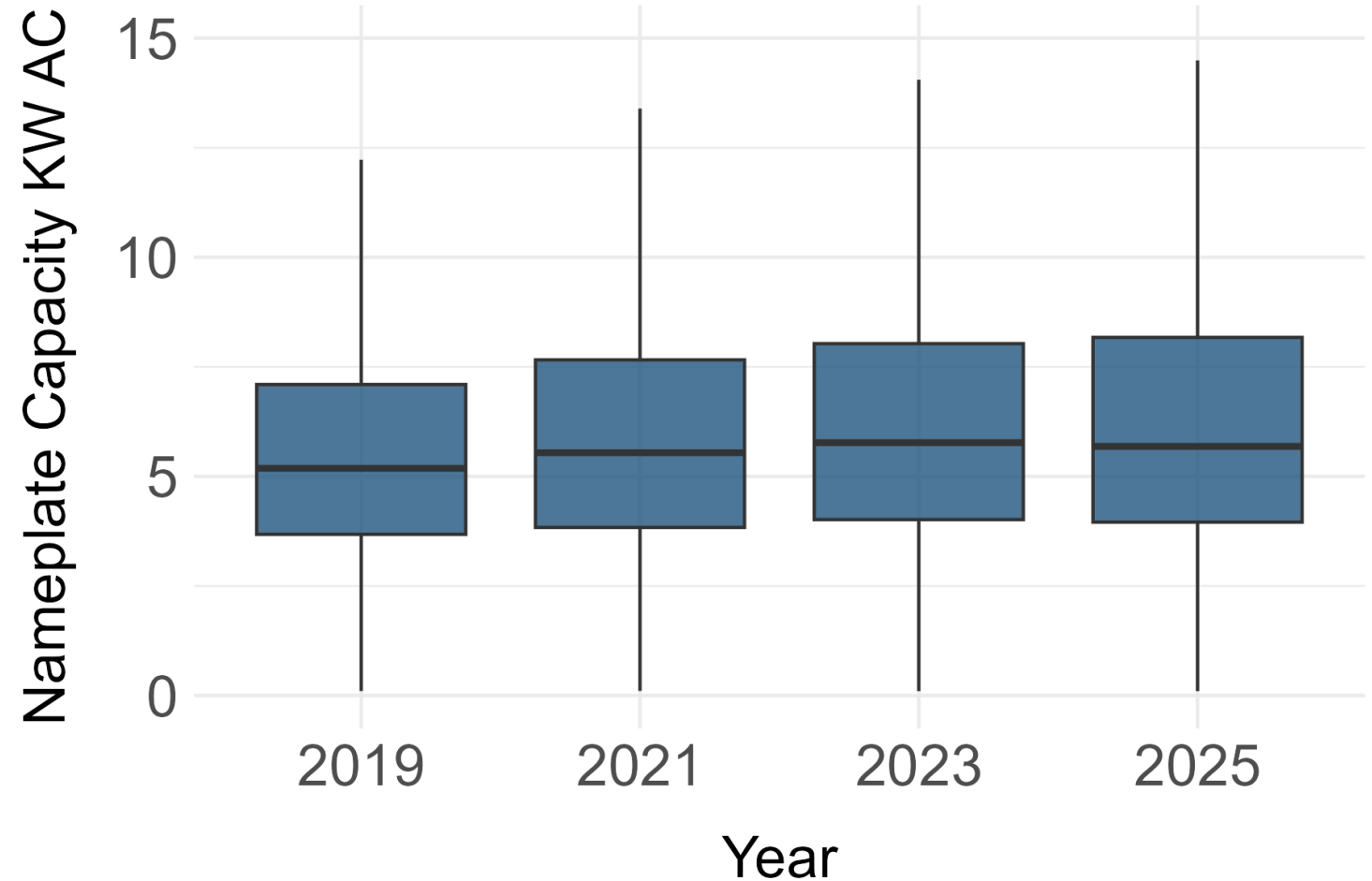




# BTM Residential PV System Sizes

- Includes PG&E, SCE, SDG&E service territories
- PV Systems less than or equal to 15KW

| Year | Median Nameplate Capacity kW (AC) |
|------|-----------------------------------|
| 2019 | 5.2                               |
| 2021 | 5.5                               |
| 2023 | 5.8                               |
| 2025 | 5.7                               |



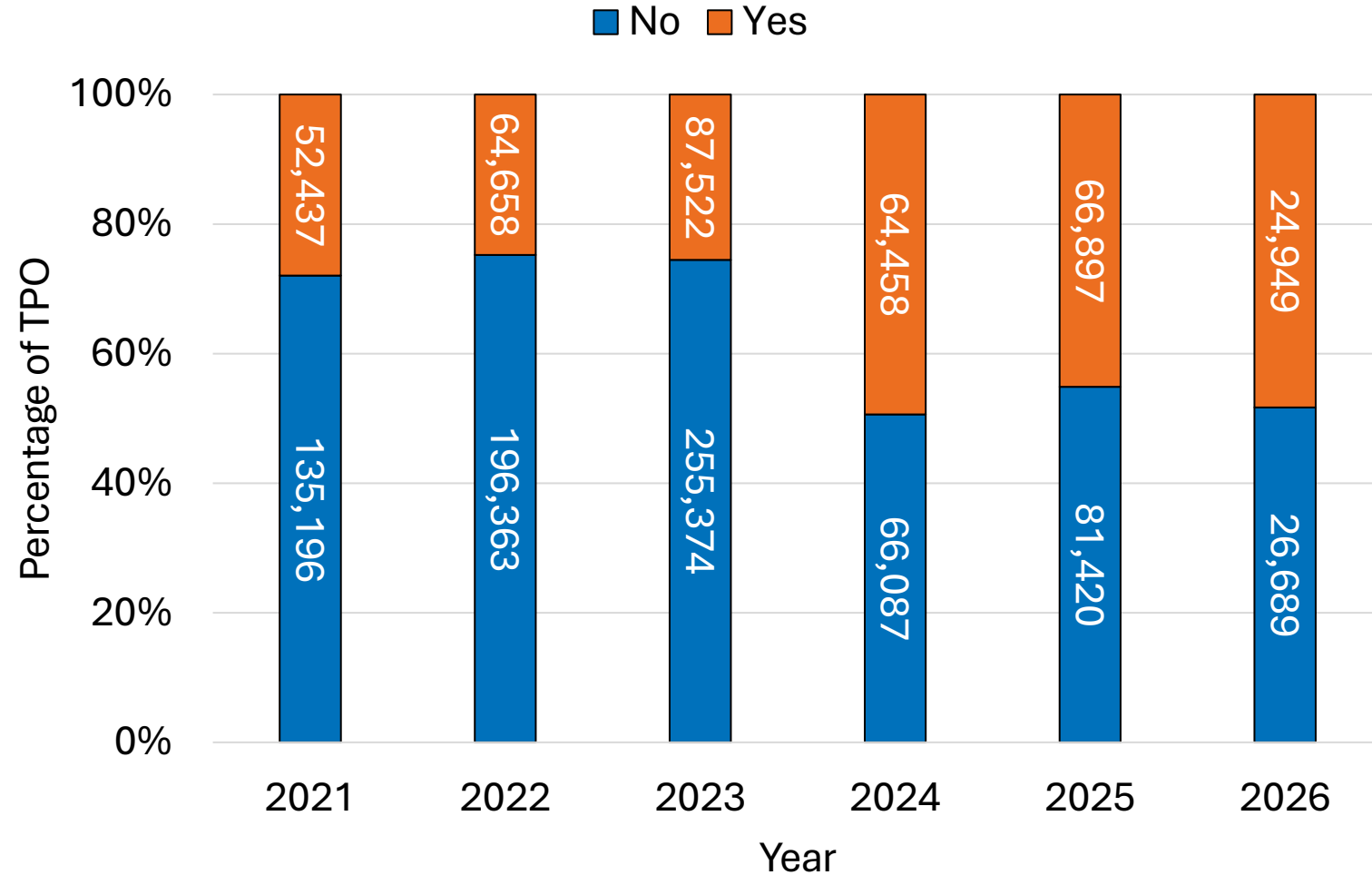


# Third Party Owned BTM Residential PV Systems

- 16% increase in share of TPO systems from 2021 to 2026
- Year shown is when the application was received
- Data current through May 2026

**Total Applications by IOU Service Area**

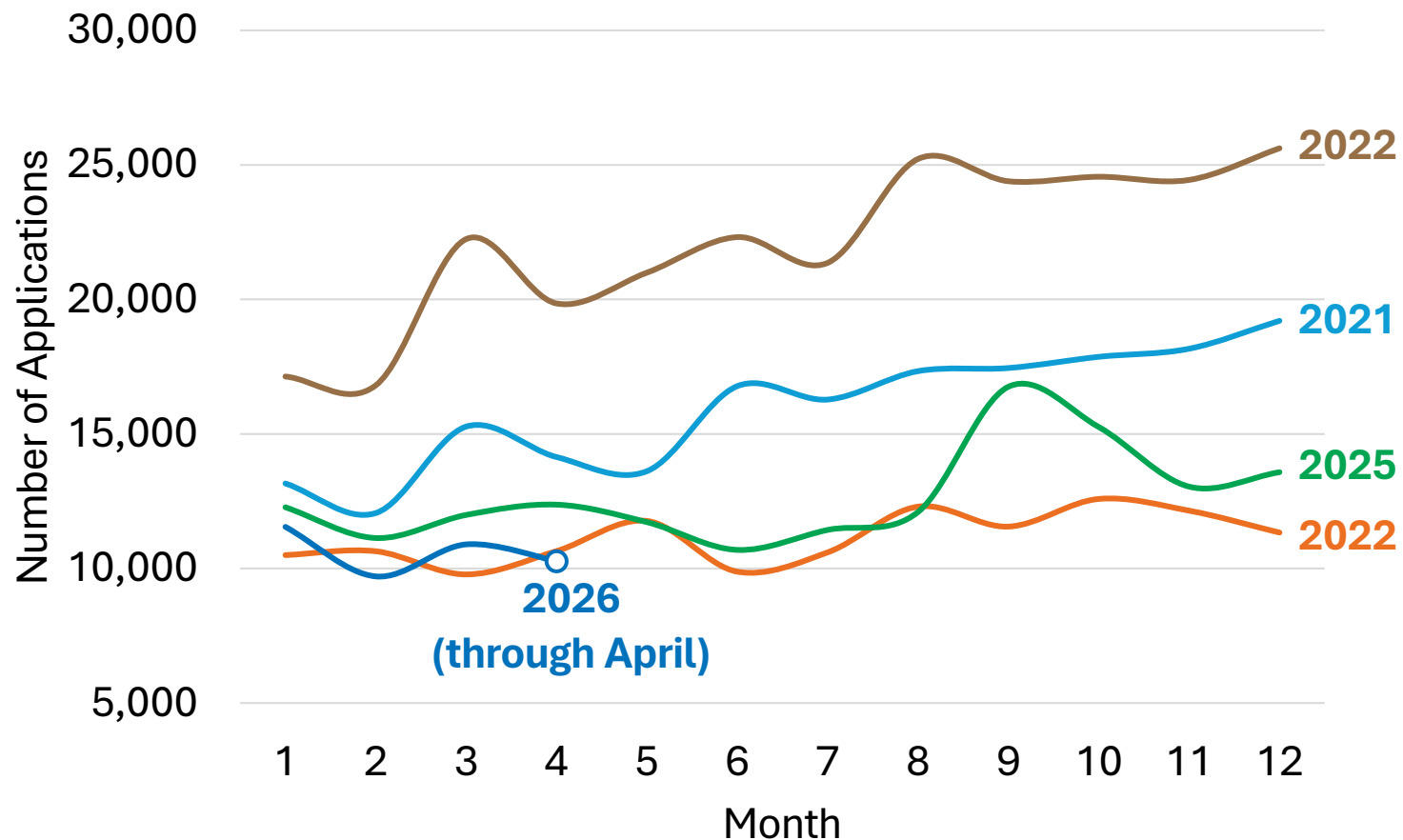
| Year | PG&E    | SCE     | SDG&E  |
|------|---------|---------|--------|
| 2023 | 146,000 | 142,500 | 55,000 |
| 2024 | 65,000  | 52,500  | 13,000 |
| 2025 | 71,500  | 63,000  | 14,000 |
| 2026 | 24,000  | 23,500  | 5,000  |





# Monthly PV Application Volume by IOU

- Q1 2026 application volume consistent with levels seen in Q1 2024 & 2025
  - ~10,000 applications per month
- Includes PG&E, SCE, SDG&E service territories.
  - CY 2023 omitted





# Historical BTM Storage Adoption Trends

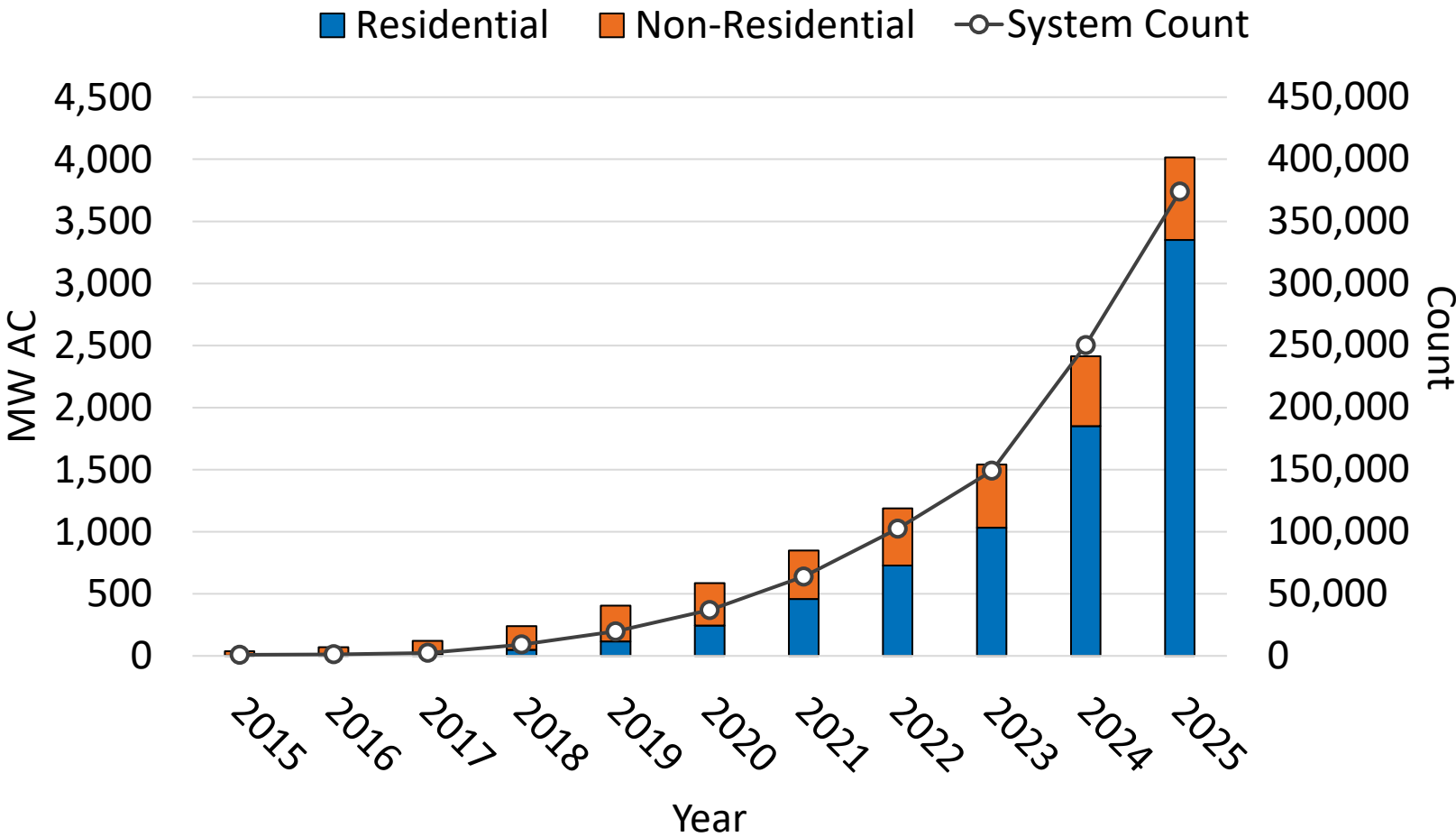


# Historical BTM Storage Stats: Statewide

- 1,600MW of capacity and 124,000 systems added in CY 2025
- 2,800MW of capacity and 270,000 systems added since 2022

2025 Cumulative BTM Storage Stats

| Sector          | MW    | Count   |
|-----------------|-------|---------|
| Residential     | 3,350 | 368,000 |
| Non-residential | 665   | 5,500   |
| Total           | 4,015 | 373,500 |

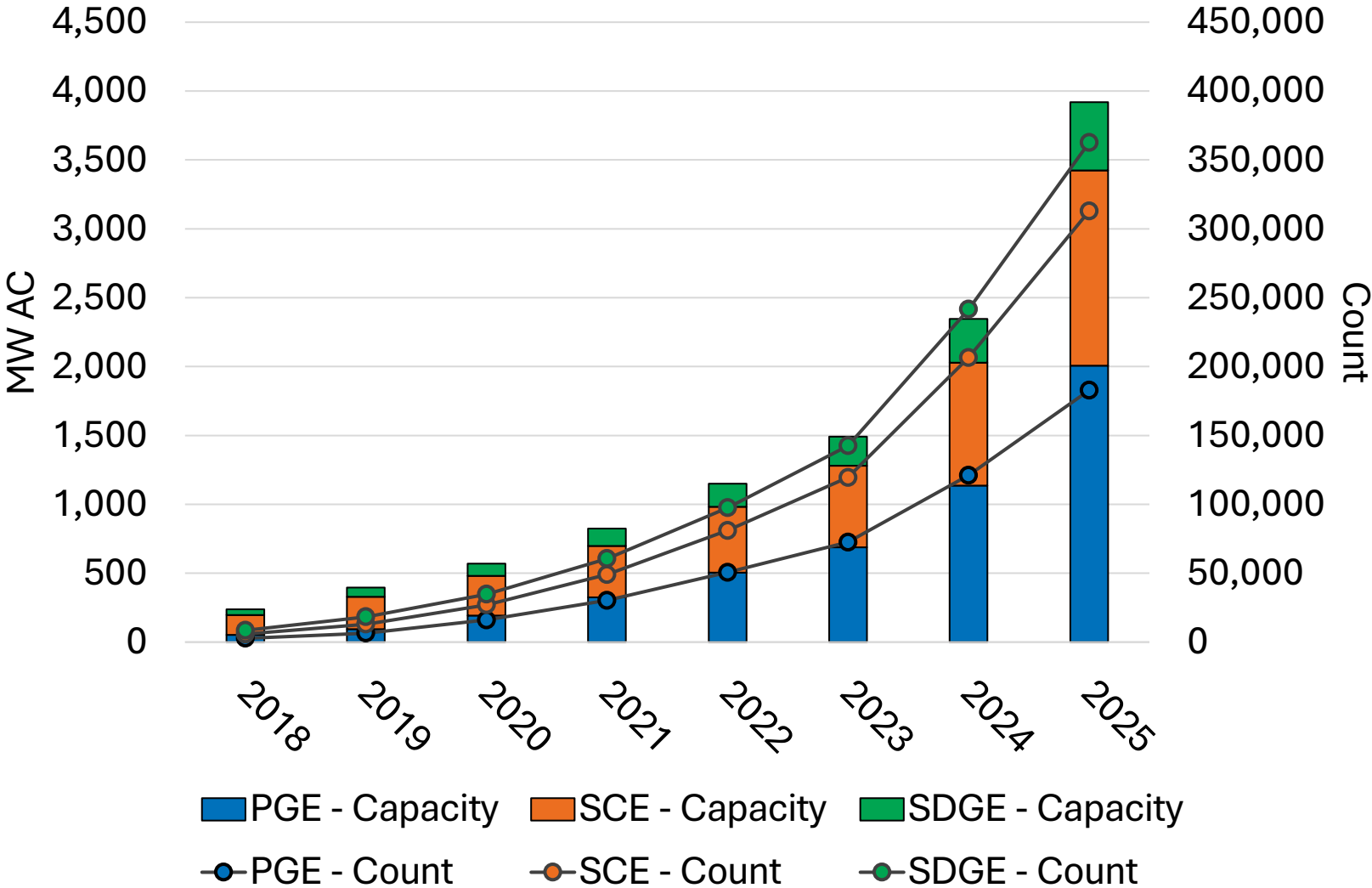




# Historical BTM Storage Stats: CAISO

2025 Cumulative BTM Storage Stats

| Planning Area | MW           | Count          |
|---------------|--------------|----------------|
| PG&E          | 2,000        | 183,000        |
| SCE           | 1,400        | 130,000        |
| SDG&E         | 500          | 50,000         |
| <b>Total</b>  | <b>3,900</b> | <b>363,000</b> |



Source: CEC Staff analysis of Title 20 §1304(b) interconnection data



# Thank You!

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