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Historical Behind-the-Meter Distributed Generation Insights

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List of Acronyms and Initialisms

BTM – Behind-the-meter

CAISO – California Independent System Operator

CPUC – California Public Utilities Commission

DIB – Data Integration Branch

DG – Distributed Generation

DGStats – California Distributed Generation
Statistics

IOU – Investor-Owned Utility

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

UDC – Utility Distribution Company



Relevance

- Historical BTM PV capacity use cases:
 - Used to calculate BTM PV Generation
 - Hourly Load Model (HLM)
 - Sector Models
 - Input to dGen model
 - Forecasts BTM PV & Storage adoption
- Historical BTM Storage capacity use cases:
 - Input to dGen model
 - Forecasts BTM PV & Storage adoption



Key Findings

- 54% increase in storage capacity from 2023 to 2024
 - Month-to-month increase in attachment rate since NBT was adopted
- Q1 2024 BTM interconnection application volume close to Q1 2021 levels
 - Similar growth patterns in PG&E and SCE service territories



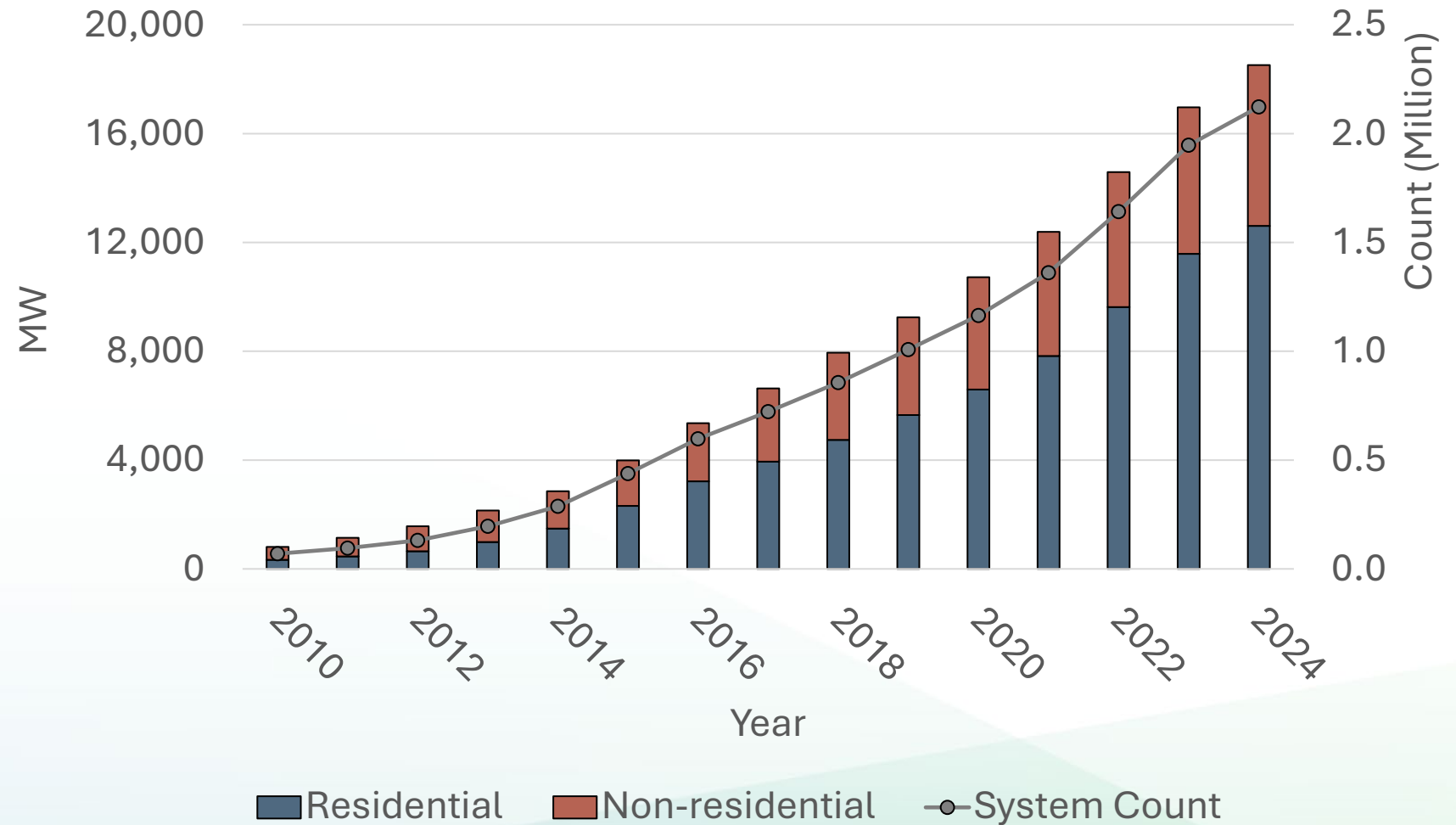
Historical BTM PV Adoption Trends





Historical BTM PV Stats: Statewide

Year	MW	Count
2023	17,000	1,947,000
2024	18,500	2,123,000



Source: CEC Staff



Historical BTM PV Capacity: CAISO

- From 2023 to 2024
 - 9% increase in capacity in CAISO
 - 10% increase in PG&E and SCE PAs

Year	PG&E (MW)	SCE (MW)	SDG&E (MW)	CAISO (MW)
2014	1,300	900	300	2,500
2019	4,300	3,000	1,200	8,500
2024	8,800	6,100	2,100	17,000



Source: CEC Staff



Historical BTM Storage Adoption Trends



Historical BTM Storage Stats: Statewide

- Storage growth rate 2023 to 2024:

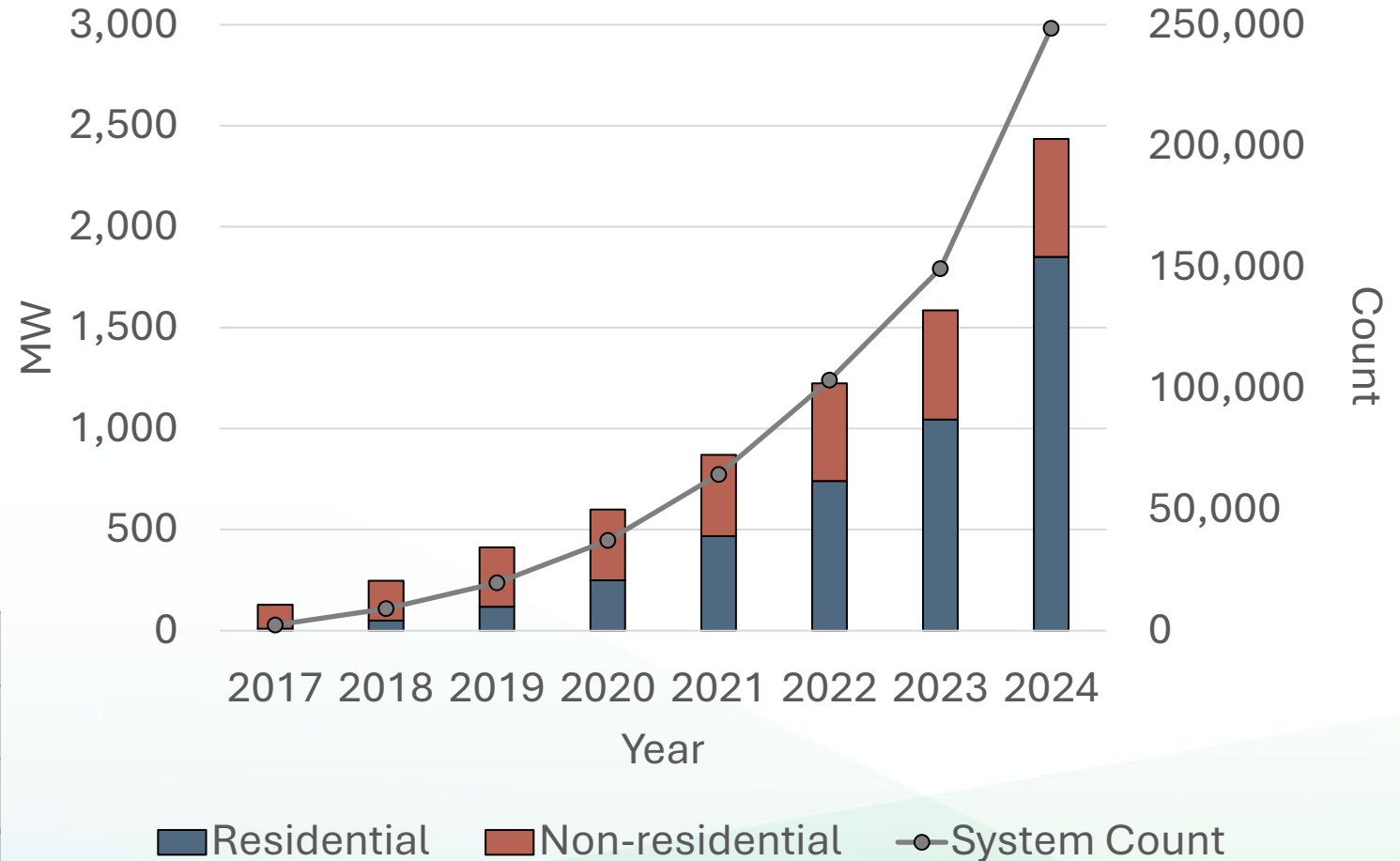
- Residential - 54%
- Non-residential - 8%

- Additions in 2024:

- Residential - 800 MW
- Non-residential - 40 MW

2024 Cumulative BTM Storage Stats

Sector	MW	MWh	Count
Residential	1,900	4,100	246,000
Non-residential	600	1,300	3,100
Total	2,500	5,400	249,100



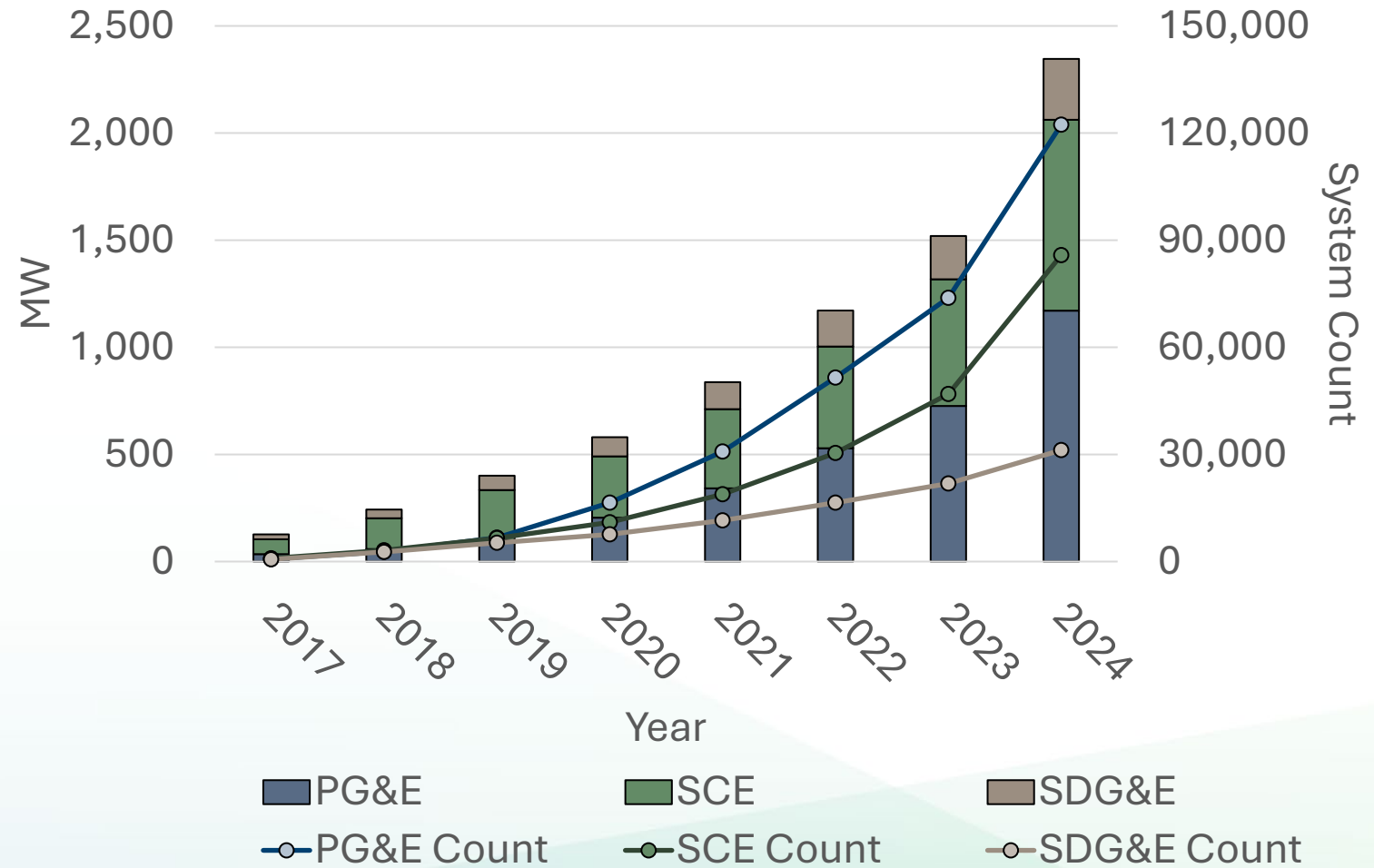
Source: CEC Staff



Historical BTM Storage Stats: CAISO

2024 Cumulative BTM Storage Stats

Planning Area	MW	MWh	Count
PG&E	1,200	2,700	123,000
SCE	900	2,000	86,100
SDG&E	300	500	31,200
Total	2,400	5,200	240,300

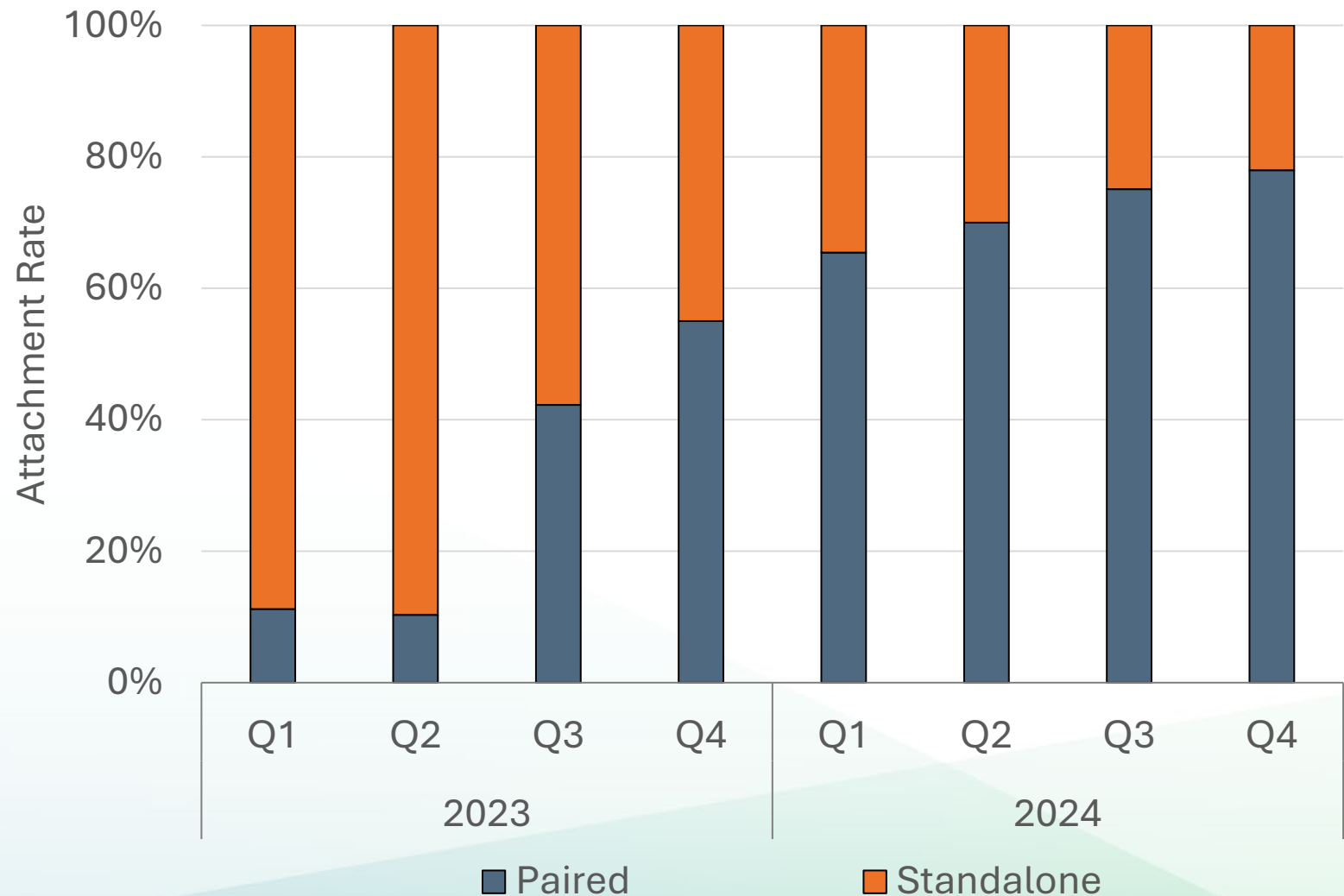


Source: CEC Staff



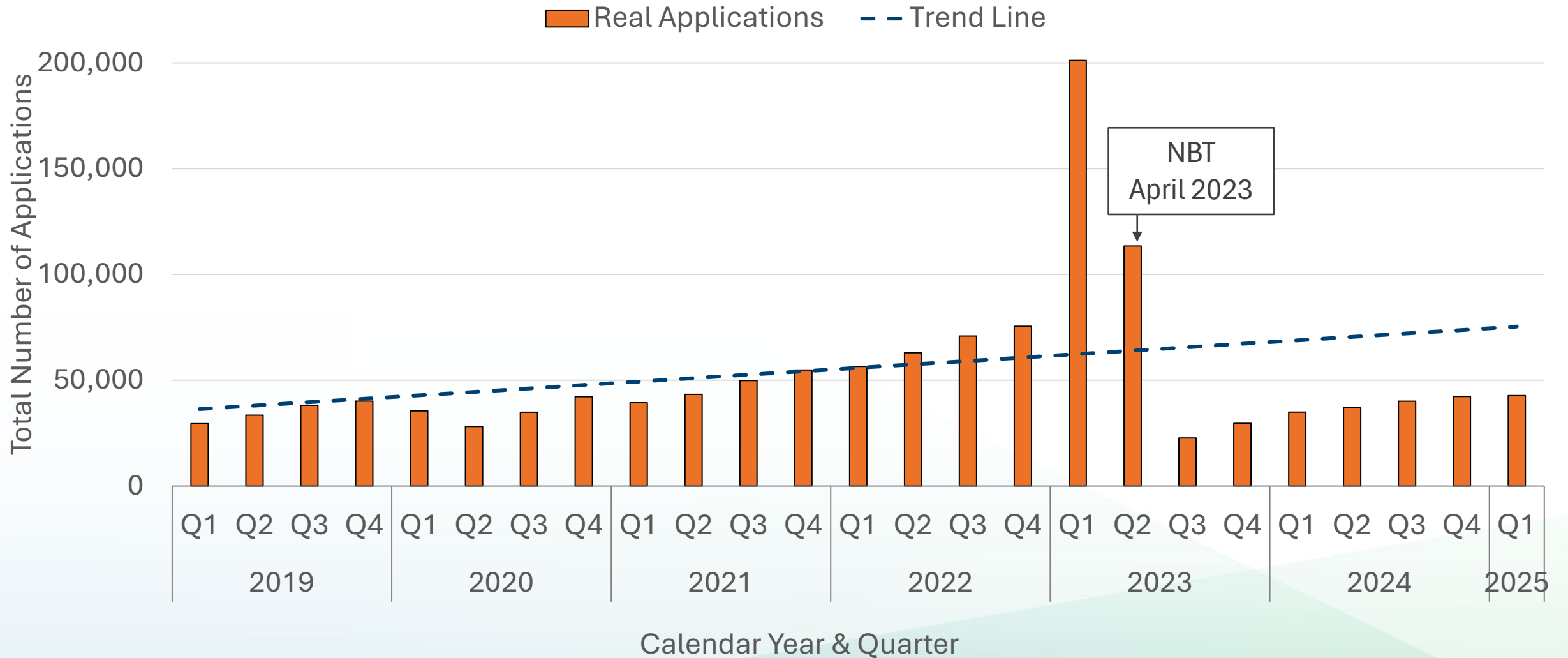
2023-2024 IOU Residential Attachment Rates

- Data for PG&E and SCE service territories
- Attachment rate
 - Q1 2023 – 11%
 - Q4 2024 – 77%
- 80% attachment rate in December 2024





Tracking Interconnection Applications



Thank You!



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