



To: Honorable Public Utilities Board

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Subject: By Motion, Accept Alameda Municipal Power’s Load Forecast for Fiscal Year 2024

RECOMMENDATION

By *motion*, accept Alameda Municipal Power’s Load Forecast for fiscal year 2024.

BACKGROUND

Each year staff prepares a forecast of the peak demand and energy requirements (load forecast) for the next 10 years. Staff relies on the load forecast in developing Alameda Municipal Power’s (AMP) budget and rates for fiscal year (FY) 2024. In addition to the FY 2024 budget, AMP staff will use the FY 2024 load forecast for the following:

- Projecting AMP’s finances with the 10-year Pro-Forma Financial Model
- Developing Northern California Power Agency’s (NCPA) annual budget and pre-billing of monthly power costs
- Complying with California’s Renewable Portfolio Standard and other environmental regulations

The report presents forecast results for Most Likely, High, and Low scenarios. Results for the Most Likely scenario represent staff’s best projection of AMP’s customer energy usage based on currently available information. The High and Low scenarios are used to examine the impacts of high and low load conditions and will bracket the Most Likely scenario. The report will provide the Public Utilities Board (Board) with a summary of the FY 2024 load forecast, the methodology used in preparation of the forecast, a detailed look into the individual rate classes, and a comparative analysis of recent forecasts.

DISCUSSION

Summary of the FY 2024 Load Forecast

The FY 2024 load forecast uses recent trends of energy sales, losses, and assumptions for various load modifiers such as customer growth, distributed generation (DG), electric vehicles (EVs), energy efficiency (EE), and electrification (i.e. switching fuel sources in buildings to electricity) to forecast sales and load for each customer class for a 10-year period. The

assumptions for customer growth are based on staff’s projections for future residential and commercial development in Alameda. Figure 1 shows actual and forecasted load over a 10-year period by customer class.

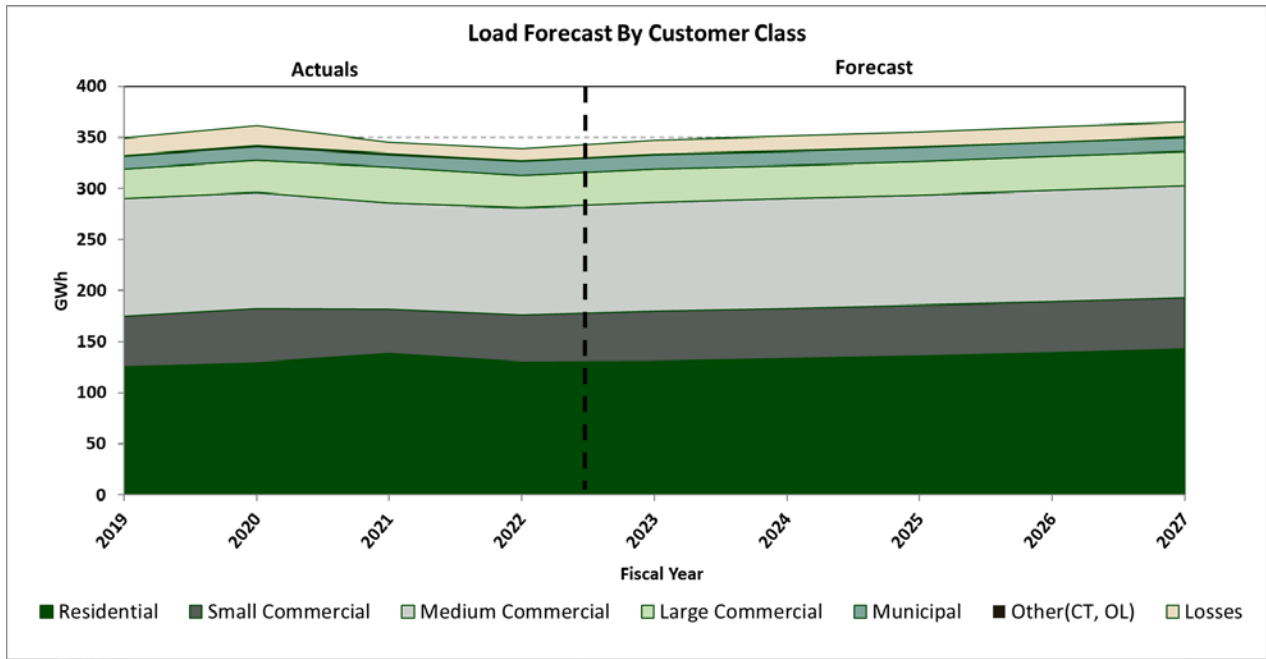


Figure 1: Actual Load and Most Likely Scenario

Actual load data through mid-year FY 2023 reveals a flat trend of load growth with a large decrease in FY 2021 and 2022 followed by a small rebound through mid-year FY 2023. Covid-19 caused significant impacts to load in FYs 2021 and 2022 as well as longer lasting impacts to trends in development and usage. Staff considers FY 2022 and the first half of FY 2023 to approximately represent the new usage baseline and will no longer specifically reference Covid impacts moving forward. The FY 2024 forecast builds off the FY 2023 rebound and continues with tempered growth from new development, EVs, and electrification. In the near-term, new development is expected to drive growth between 1 and 1.5 percent. After FY 2027, load is expected to return to a slower rate of growth for the remainder of the forecast period, averaging approximately 0.6 percent per year. There is some cause for concern with an increasing risk of recession in 2023, particularly in the small and medium commercial classes.

Figure 2 illustrates the three load growth scenarios from the current FY through FY 2032. Affecting the different scenarios are assumptions for new developments, electrification, DG, EE, and EVs.

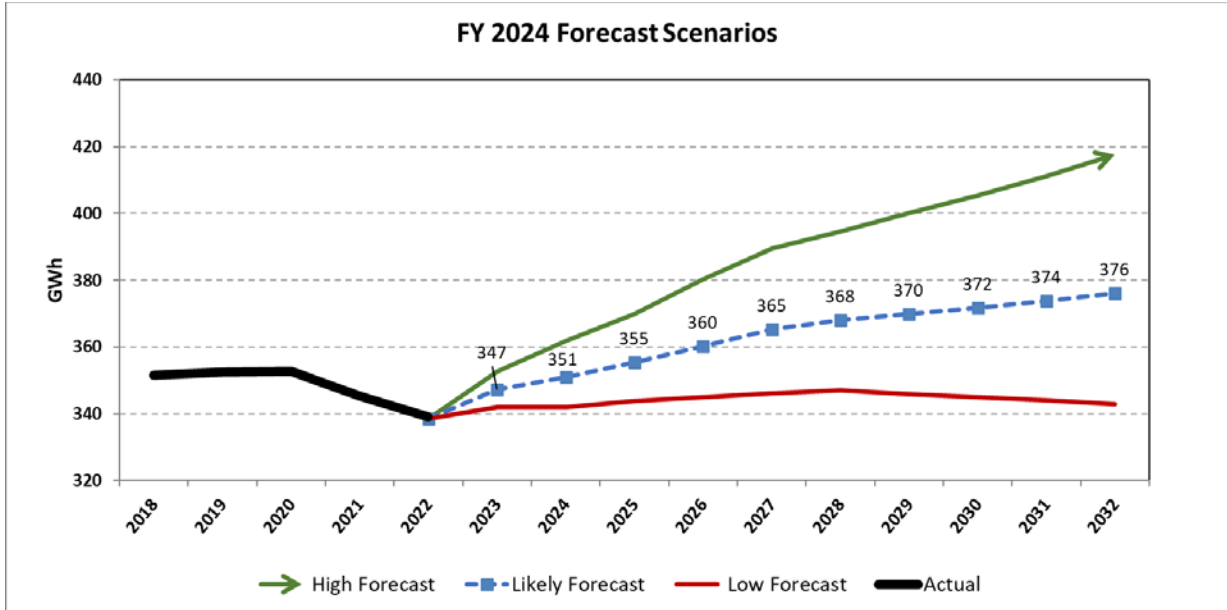


Figure 2: 10-Year Load Forecast Scenarios

Figure 3 compares the Most Likely load forecast for the current and previous two fiscal years. The FY 2024 forecast falls closely in line with the FY 2023 forecast. New developments remained similar in the FY 2024 forecast and based on recently observed trends the latest forecast has increasing levels of EVs, electrification, and DG with offsetting impacts.

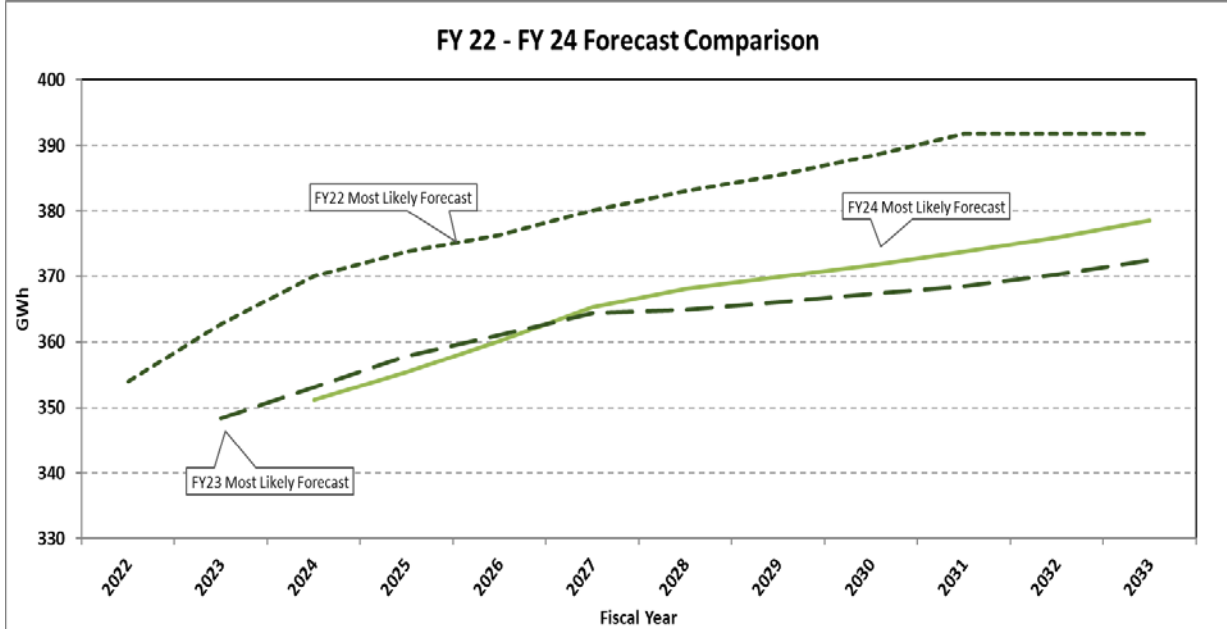


Figure 3: Fiscal Year (FY) 2024 and Prior FY Load Forecasts, Most Likely Scenario

Load Forecast Methodology

AMP staff continues to follow the same basic forecasting methodology as in years past with a few modifications to improve accuracy. Staff begins with the preceding year’s load/sales actuals as the base load in the forecast. The following years’ forecast is then modified based on various factors affecting load like new development, EE, DG, EVs, and electrification. Unlike last year, staff has not continued to make individual class adjustment for Covid-19 impacts.

Factors Affecting Short-Term Load Forecast

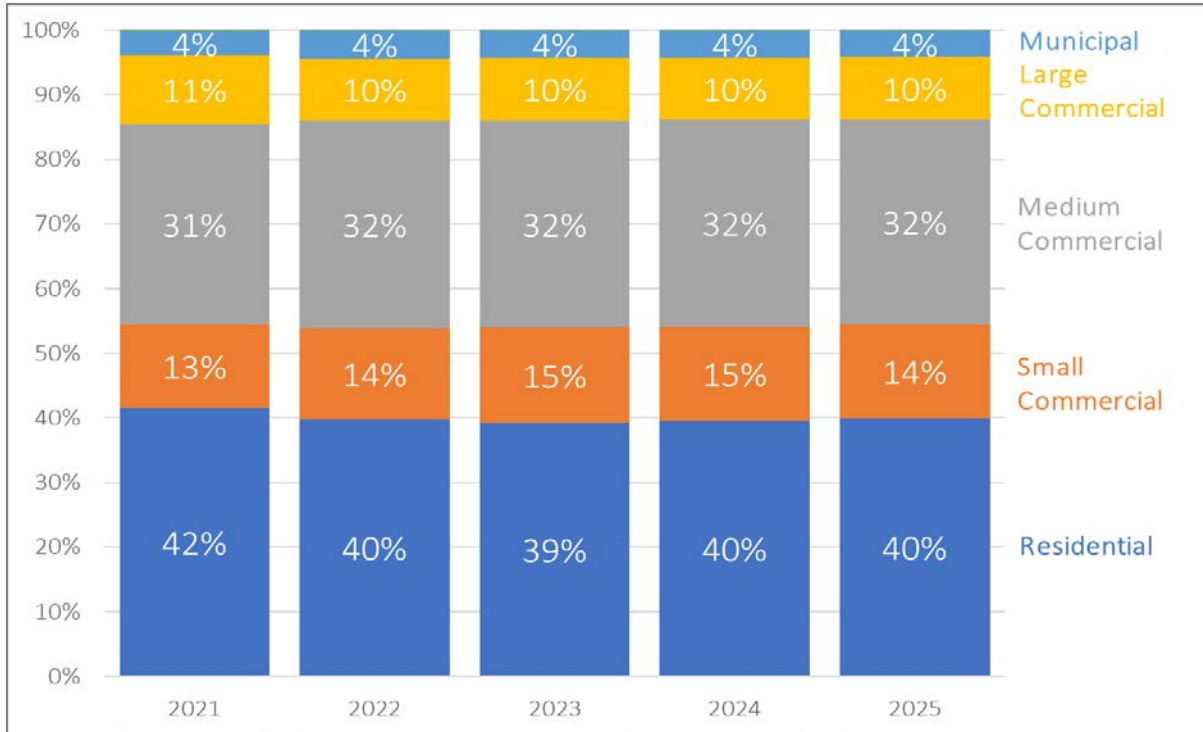


Figure 4: Fiscal Years 2021 through 2025 AMP Load Share by Customer Class, Percent

Residential Class Forecast

AMP has two residential customer classes, D-1 for individually metered dwellings and D-2 for multi-family dwellings with a single meter. The D-1 class accounts for more than 98 percent of all residential customer load. The D-2 class is closed to new customers.

To forecast the load for the D-1 class, AMP forecasts the number of new customers in each year of the 10-year period. To accomplish this, AMP staff consults with the City of Alameda Planning Department’s Development Forecast, AMP’s engineering and key account management personnel, and reviews relevant City Council reports and news articles to develop a forecast of new residential developments.

Table 1 has actual and forecasted Most Likely Scenario data from the FY 2024 load forecast for number of customers and the usage per customer. The customer growth is based on residential

new development forecasts for the number of new units. After staff forecasts the base load for D-1 customers from the projected number of new customers and the forecasted usage per customer, additional factors that affect customer load are applied which are discussed below.

Table 1: New Customers and Usage, Most Likely Scenario

	Actual		Fiscal Year 2023 Forecast					
	2021	2022	2023	2024	2025	2026	2027	2028
Total Customers	31,804	31,924	32,379	33,019	33,745	34,385	35,221	35,744
New Customers			455	640	726	640	836	523
(kWh/customer/year)	4,312	4,010	4,038	4,034	4,036	4,049	4,069	4,100

Table 2 below highlights some of the major developments slated to come online in the next five years.

Table 2: Residential Customer Growth by Area

Area	Details	New Units	Time frame
Alameda Landing	Waterfront	350	2022-2025
Alameda	Del Monte Building	360	2023-2026
Alameda Point	Site A	675	2022-2024
Alameda	Alameda Marina (Clement)	760	2023-2027

Figure 5 illustrates the total contribution of the additional factors affecting residential sales through the FY 2028 forecast period using the Most Likely Scenario, relative to the updated forecast for total residential sales in FY 2023. The forecasted residential sales are expected to increase, driven by major new developments across the island. Compared to the FY 2023 forecast, solar and electrification estimates associated with residential new developments have been revised based on latest information.

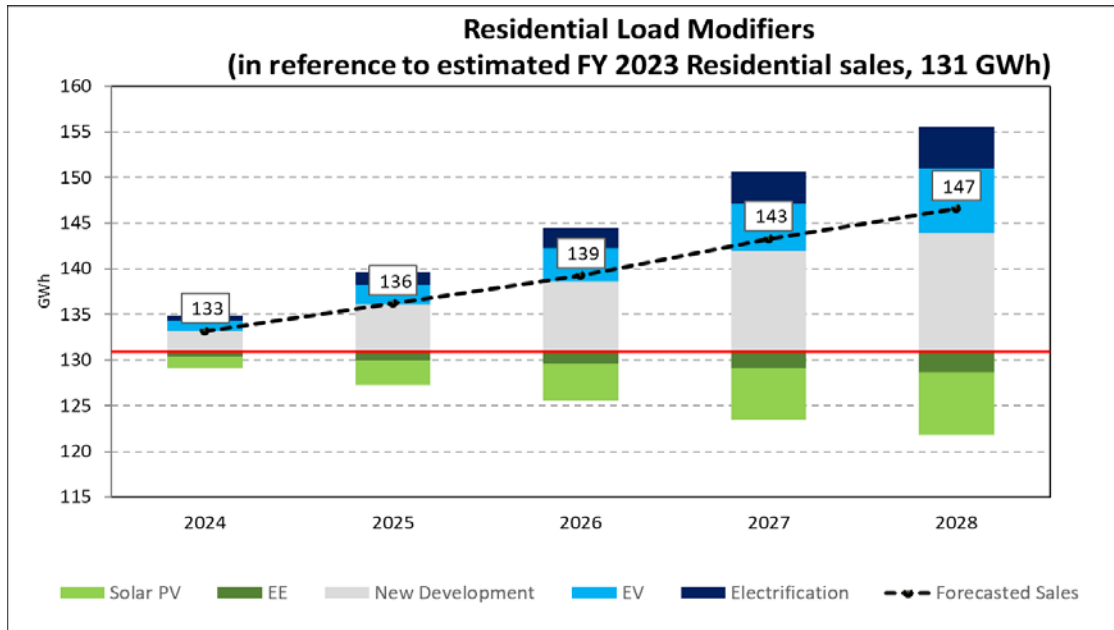


Figure 5: Factors Affecting Residential Load Forecast

Commercial Class Forecast

AMP has four commercial rate classes (A-1, A-2, A-3, and A-4) where customers’ usage and demand by month determines which rate class each entity is enrolled into. Currently, AMP does not have any A-4 customers. Table 3 shows the actual sales in FY 2021 followed by forecasted sales for the commercial classes for the next five years.

Table 3: Forecast Sales by Commercial Class, Fiscal Years 2022–2027

Fiscal Year	Sales (GWh)			Total Sales (GWh)
	A-1	A-2	A-3	
2022	45.8	105.0	31.6	182.3
2023	48.9	106.9	32.3	188.1
2024	49.2	107.5	32.6	189.3
2025	49.4	108.1	32.9	190.4
2026	49.8	108.9	33.3	192.0
2027	50.0	109.3	33.5	192.8

To project commercial load, the forecast starts with the total commercial load through mid-year FY 2023, then subtracts the incremental load reductions from EE and solar PV installations and adds the incremental load from new development and EVs.

Figure 6 illustrates the total impacts of the load modifiers of commercial load through FY 2028 under the Most Likely Scenario. In relation to the FY 2023 commercial sales forecast, the three commercial classes are expected to grow primarily as a result of new development.

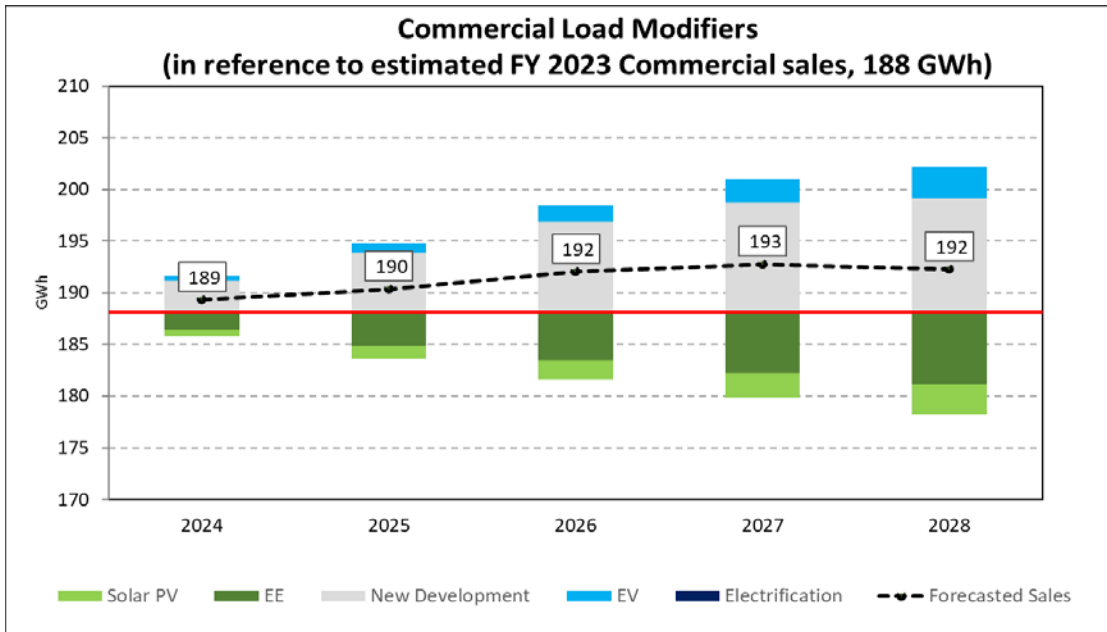


Figure 6: Factors Affecting Commercial Load Forecast

New Development

The principal driver of commercial customer sales is new development. The forecast is compiled using the City of Alameda Planning Department’s Development Forecast, AMP engineering and key account management input, and load assumptions from comparable existing customers. Staff expects significant commercial floor space growth over the next five years as development at Harbor Bay Business Park, Marina Village Parkway, and undeveloped areas in Alameda continue. For the most part, staff has a good grasp on square footage and timing of construction, but there is much more uncertainty around timelines to secure tenants and phase-in their load. In addition, certain sectors such as biotech, which represent a significant portion of AMP’s new development, have large variations in usage on a kWh per square foot basis. Table 4 has the forecasted commercial floor space growth by area for the larger proposed projects.

Table 4: Commercial Floor Space Growth by Area

Area	Details	Sq. Ft. ('000)	Time Frame
Harbor Bay Business Park	North Loop Rd, 5 Office Buildings	187	2021-2024
Harbor Bay Business Park	Wind River – New Tenants	125	2022-2024
Harbor Bay Business Park	2900 Harbor Bay Pkwy	173	2021-2024
Marina Village Parkway	Shipway Buildings	112	2022-2025
Alameda Point	Astra Expansion	179	2022-2023

Forecast for Other Customer Classes

The forecasted sales for AMP’s other customer classes for FY 2024 is 14.4 gigawatt hours (GWh), approximately 4 percent of AMP’s total sales. Load growth for these classes is expected to be relatively flat for the forecast period. These other classes include municipal accounts (M-1, M-2, and M-3), privately owned outdoor lighting (OL), and service for the two NCPA combustion turbine units (CT). M-1 consists of all municipal accounts including Alameda Unified School District, with the exception of municipal street lighting (M-2) and AMP’s operations (M-3).

Municipal Forecast

Municipal load is assumed to remain relatively flat for the forecast period.

OL and CT Forecast

The forecast assumes that the OL and CT loads remain relatively flat.

Comparing Recent Energy Forecasts

In recent years prior to FY2023, the actual annual load has been lower than forecasted and prominently so in the years most impacted by Covid-19, FY 2021 and FY 2022. Table 5 provides a comparison of the forecasted and actual loads for four prior fiscal years and the year-to-date (YTD) forecast for the current fiscal year prior.

Table 5: Fiscal Year Forecasted Annual Load Forecast vs. Actual Annual Load

Fiscal Year	Forecast Load (GWh)	Actual Load (GWh)	% Difference
2019	353	351	-0.62%
2020	356	353	-0.92%
2021	363	345	-4.98%
2022	354	338	-4.34%
2023 (YTD)	348 (174)	(178)	2.44%
2024	351	-	-

Despite expected electrification related load growth over the next five to ten years, staff does not anticipate a proportional increase in revenues.

FINANCIAL IMPACT

This load forecast does impact the upcoming budgeting process, the development of AMP's revenue requirements for ratemaking updates, and future analysis of resource acquisitions and other longer-term activities. Even with modest load growth this year's forecast is still a slight downward revision from the prior year's forecast and with expenses increasing faster than revenue expectations staff anticipates substantial rate increases may be required.

NEXT STEPS

Staff will develop the FY 2024 forecasts of power costs and revenues at current rates for use in AMP's FY 2024 budgeting process.

LINKS TO BOARD POLICY AND OBJECTIVES

ISSUE 1: Sustainability

Strategy 2: Deliver and maintain 100 percent carbon-neutral energy resources by 2020

ISSUE 3: Business Resiliency

Strategy 2: Develop financial planning processes that provide fiscal stability

EXHIBIT

- A. FY 2024 Most Likely Scenario Load Forecast
- B. FY 2024 Load Forecast PowerPoint Presentation

Fiscal Year 2024 Load Forecast

January 23, 2023

Overview



Background



**Results Fiscal
Year 2024
Load Forecast**



**Comparison
with Prior
Years**



Next Steps

BACKGROUND

Rationale for a Load Forecast?



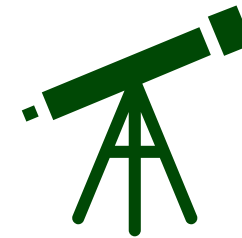
Short-Term

AMP's Power budget

AMP's Pro-forma

Cost-of-service & Ratemaking

Short-term revenue projections



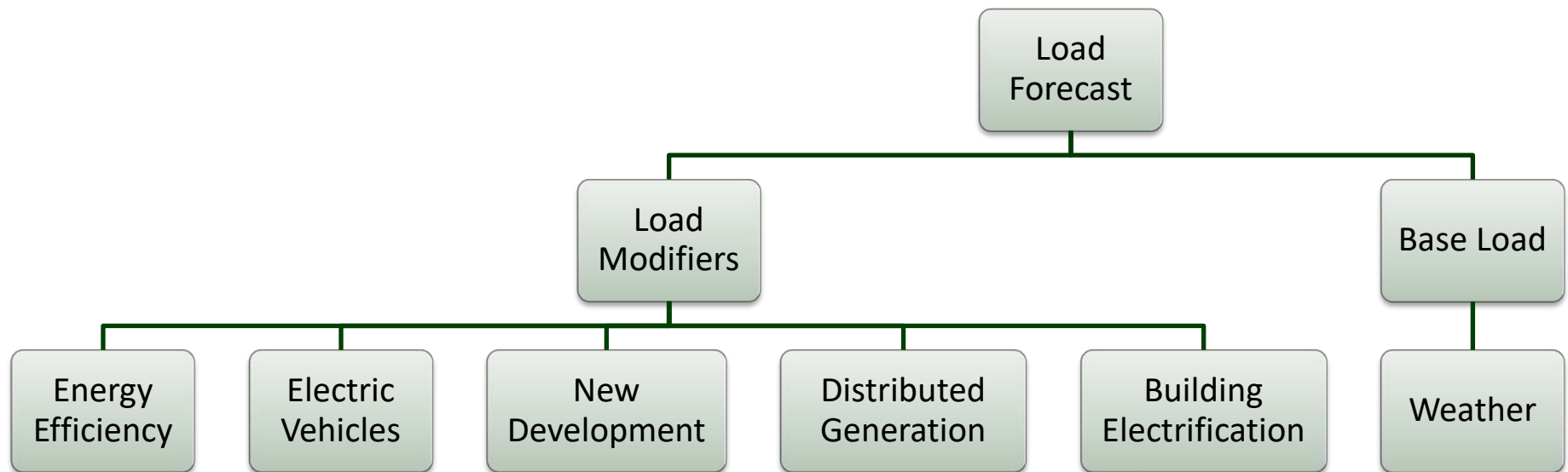
Long-Term

Resource planning

Long-term compliance

Financial planning

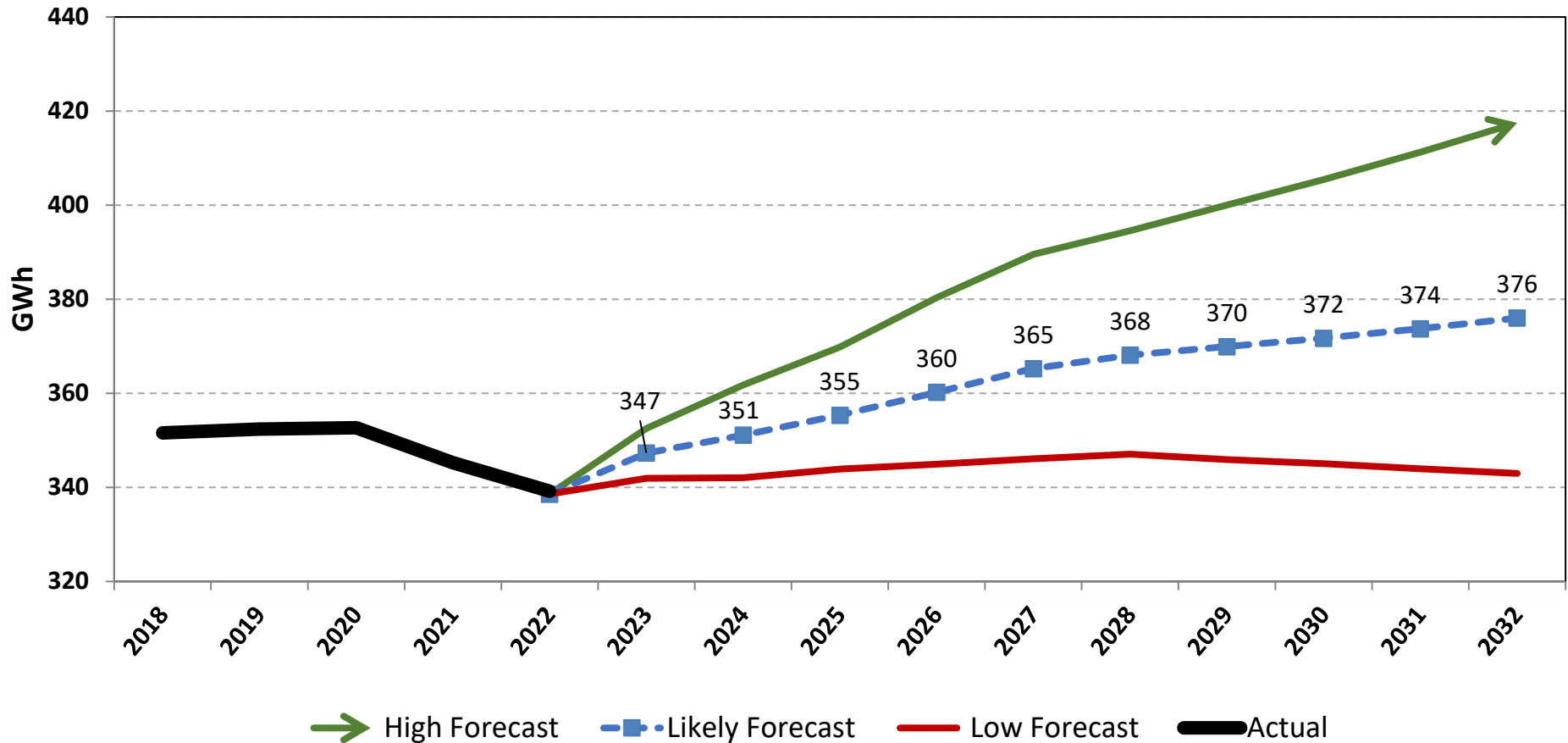
Forecast Methodology



RESULTS

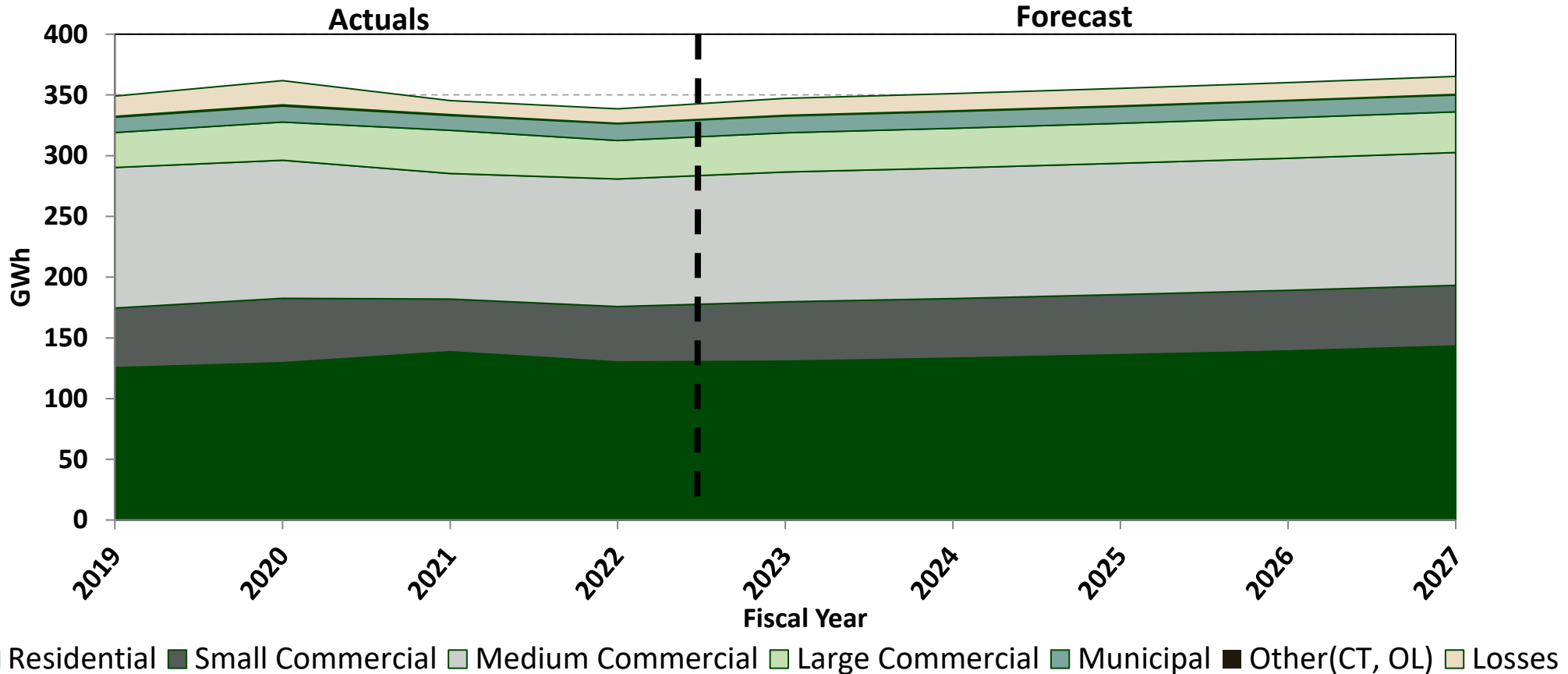
Load Forecast

FY 2024 Forecast Scenarios



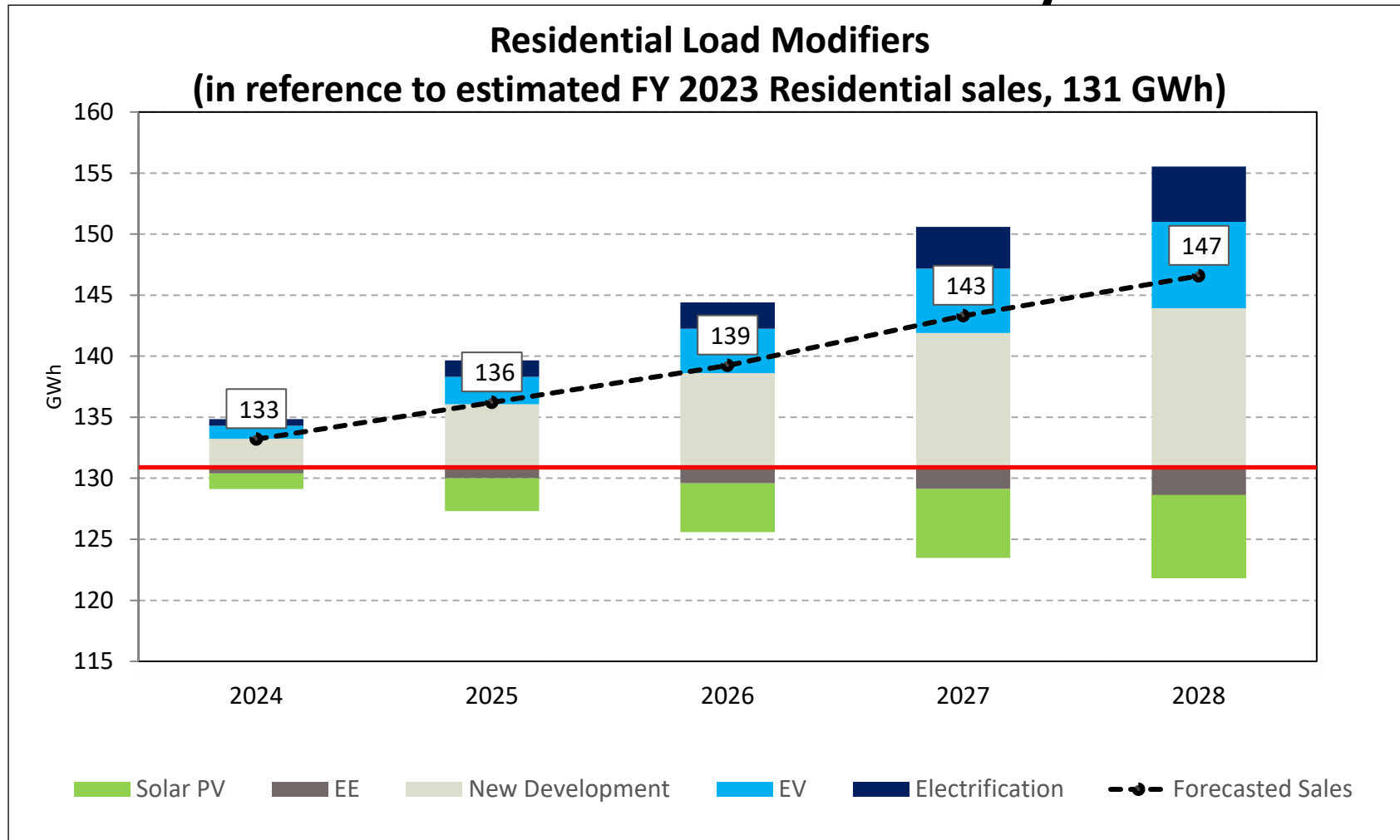
Customer Class Breakdown

Load Forecast By Customer Class



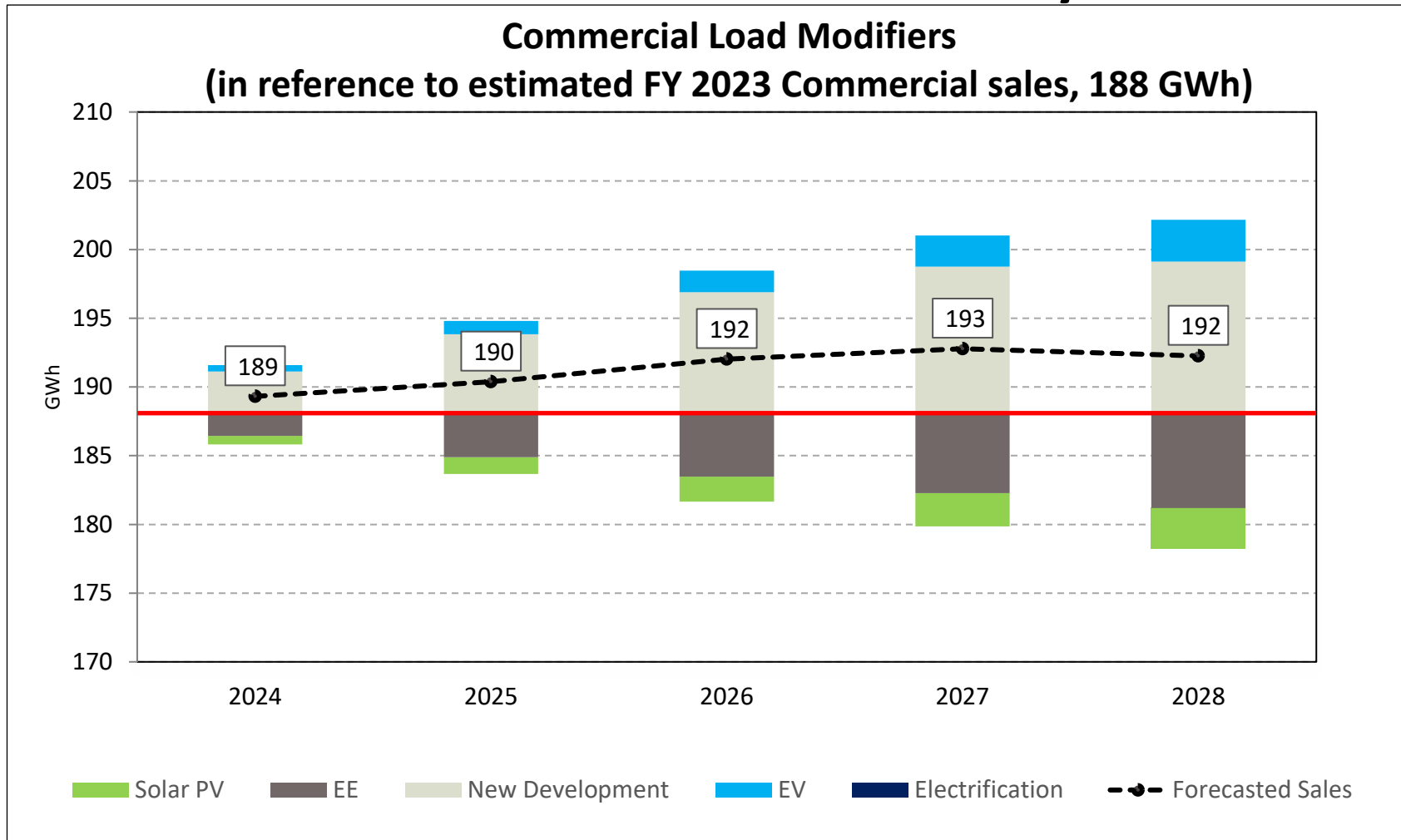
Residential Sales Forecast

5-Year Residential Sales: Most Likely Scenario



Commercial Sales Forecast

5-Year Commercial Sales: Most Likely Scenario



Key factors driving Load Change

SHORT TERM (<4 YEARS)

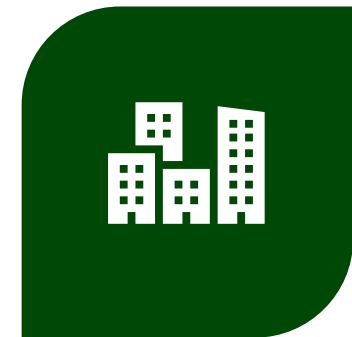


NEW DEVELOPMENTS

LONG TERM (4+ YEARS)



ELECTRIC VEHICLES
AND PUBLIC CHARGING



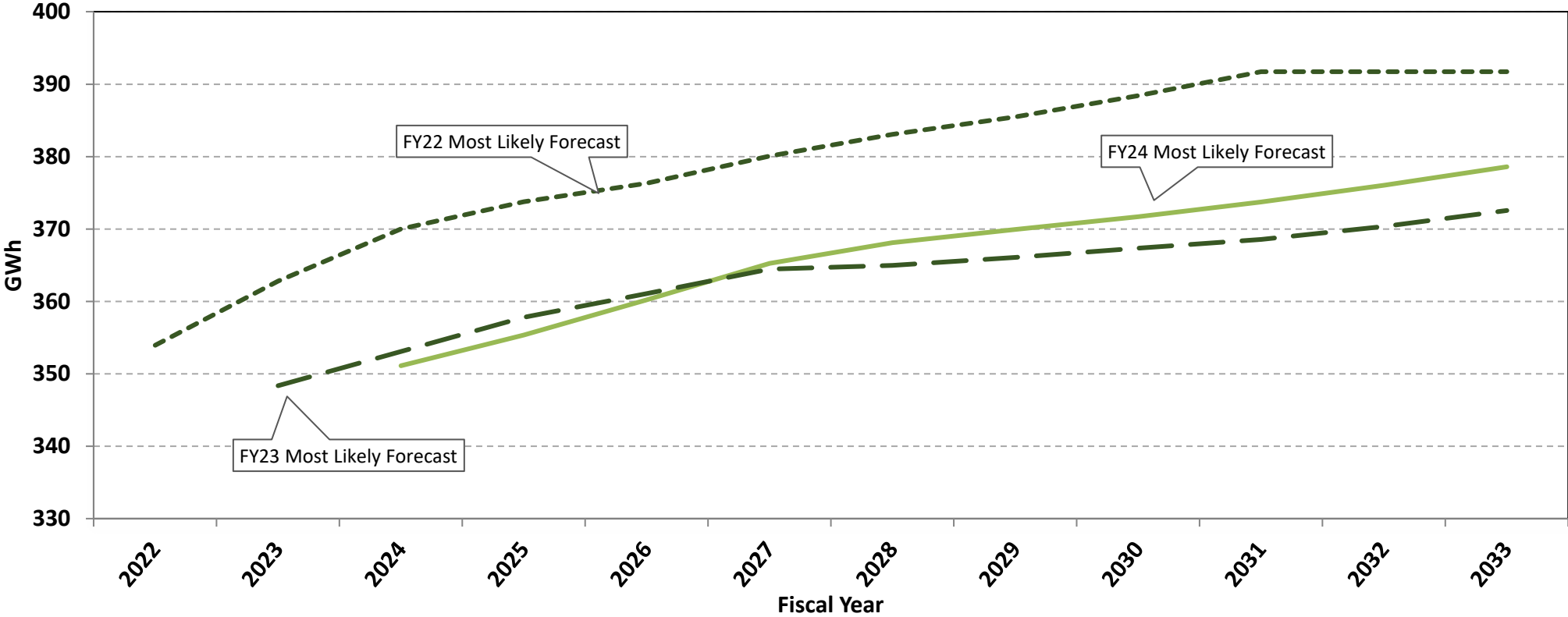
IMPACTS OF BUILDING
ELECTRIFICATION

- There is some cause for concern with an increasing risk of recession in 2023.

COMPARISON TO PRIOR YEARS

Load Forecast Comparison to Prior Years

FY 22 - FY 24 Forecast Comparison



Forecast Error: Prior Year Forecasts

- Forecast Load v. Actual Load
 - FY 2021 and FY 2022 larger margin, related to Covid-19

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2020	356	353	-0.92%
2021	363	345	-4.98%
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2023 (YTD)	348 (174)	(178)	2.44%
2024	351	-	-

Key Takeaways

- FY 2024 forecast continues with modest growth back to FY 2019 levels but represents a slight downward revision from FY 2023 forecasts for FY 2024.
- Staff anticipates modest kWh growth will not result in equivalent revenue growth.
- With expenses increasing faster than revenue staff anticipates substantial rate increases may be required.

Next Steps

- Staff recommends accepting Alameda Municipal Power's FY 2024 Load Forecast
- Staff will use the Load Forecast for:
 - Pro Forma, 10-Year: March 20
 - FY 2024 Budget/Rates: April 17
 - NCPA Monthly Pre-Billing for FY 2024

Questions?

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