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# 2025 IEPR

## Form 4 Demand Forecast

### Methods and Models

## San Francisco Public Utilities Commission

#### Overview

The attached IEPR report for the San Francisco Public Utilities Commission (SFPUC), Hetch Hetchy Power Enterprise provides the long-term energy forecast including peak demand and customer count for the City and County of San Francisco (City), including the San Francisco International Airport, and surrounding counties, where applicable.

#### Form 4 Demand Forecast Methods and Models

The methodology used for load forecasting takes into consideration various load influencing factors including real estate development trends in our service territory, and major load changes among key customers.

Overall, loads are projected to grow by a compound annual growth rate of 5.6% over the eleven-year planning period from 2025 to 2036. The forecasted increase is based on projected electricity demands from new municipal facilities that are planned or under construction. Many of these are electrification projects as the City looks to move away from natural gas, gasoline, and diesel to heat buildings, power vehicles, and produce emergency power.

The municipal customers with the largest load increases include the SF International Airport, SFPUC's Wastewater Enterprise, and the SF Municipal Transportation Agency (SFMTA). Airport loads are expected to grow by about 4 percent annually over the projection period due to load growth from new terminals and associated facilities, electric vehicle and electrification projects, and other projects from the airport's master plan. The Wastewater Enterprise construction at the Southeast Wastewater Treatment Plant will also increase power consumption, growing loads by about 5 percent annually over the planning period. SFMTA growth is primarily due to bus electrification projects.

Retail non-municipal electric load growth is generally associated with large redevelopment projects and related customer growth in the southeastern portion of San Francisco, as well as some "infill" projects throughout the city, particularly affordable housing. Current redevelopment-area customers in the plan include Alice Griffith, Candlestick Point, HOPE SF (Potrero and Sunnyside), Hunters Point, India Basin, Mission Rock, Pier 70, Treasure Island/Yerba Buena Island, Transbay Transit Center, and Visitacion Valley (Schlage Lock). Over the forecast period, retail non-municipal load is expected to grow by a cumulative 15 percent. Notably, roughly a third of this growth comes from a single large project that is expected to come online towards the end of the forecast horizon.

The compound annual growth rate noted above, although quite aggressive, does include an increase in 2035 and 2036 from one very large customer significantly driving up the percentage. While this growth is a key component of CCSF's energy forecast, it also means that this projected increase is dependent on economic growth that may be delayed or never materialize due to possible recession or other factors. With San Francisco's struggling economic recovery and a history of project delays, the projections in this forecast could see sizable shifts in the years ahead.

## Forecast Calibration Procedures

The annual load escalation factors were developed based on the above indicators and were calculated manually and reviewed and approved by our staff.

Unlike typical LSE's, the load served by Hetch Hetchy Power is mostly "municipal" loads (specifically, departments/services of the City and County of San Francisco, of which the San Francisco International Airport is the most significant from a load perspective) with a small component of retail loads. Hence, for this report we have elected to submit the required information as a lump sum number for the entire enterprise.

## Customer Count Forecast Procedures

Customers are defined as unique end-users of power. For example, while Hetch Hetchy serves all public schools in San Francisco, the San Francisco Unified School District is considered to be a single customer, rather than each school, or each account being a customer. Hetch Hetchy Power's customer base had remained mostly stable until the last few years when an increasing number of individually-metered residential customers were added. We expect this trend to continue. With the increase in the number of residential units being built in San Francisco and served with Hetch Hetchy Power, a modest customer growth factor of 4 percent was used, year over year. The customer count presented shows active retail customers as of the last day of the calendar year.

## Energy and Peak Loss Estimates

Electrical losses are estimated to be approximately 1.45 percent, and this includes distribution losses but excludes transmission losses and unaccounted for energy.

## Historical Peak and Projected Peak Loads

The historical peak demand includes some extreme weather-related spikes, while the base forecast for the eleven-year forecast horizon was generated using normalized weather from our regression models.

## Extreme Weather Peak Demand

The peak demand for the various scenarios were calculated based on the following assumptions: CCSF predicts a 4 percent increase in peak demand for an event with a 20 percent probability, a 7 percent increase for an event with a 10 percent probability and an 8 percent increase for an event with a 5 percent probability. These extreme weather peak demand forecasts were based on CEC's extreme weather predictions for the SFPUC service territory.

## Economic and Demographic Data

CCSF's long term electrical load forecast is made at a granular level projecting loads at individual municipal divisions/departments or other aggregations. And as such tends to yield a more accurate forecast compared to using a general metric based on San Francisco's economic or demographic data.

## Conservation, Efficiency, and Electrification among Residential Customers

Conservation efforts among residential customers is expected to have a minimal impact on power usage, and it may be offset by the growth in electric appliances and San Francisco's mandate that new homes be all-electric (as opposed to using natural gas). At this time, the effects of electrification and efficiency gains among residential customers are expected to roughly equal each other. Electrification and energy efficiency is an area that staff will continue to revisit in coming years to refine the volume.

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END OF REPORT