

# Transmission Project Status

DEFINITION	KEY FACT
The CAISO <sup>1</sup> approves new projects in its TPP <sup>2</sup> annually.	<b>56%</b> of CAISO-approved projects are ongoing since 2009.

## CAISO-Approved Project Status (2009-2024)

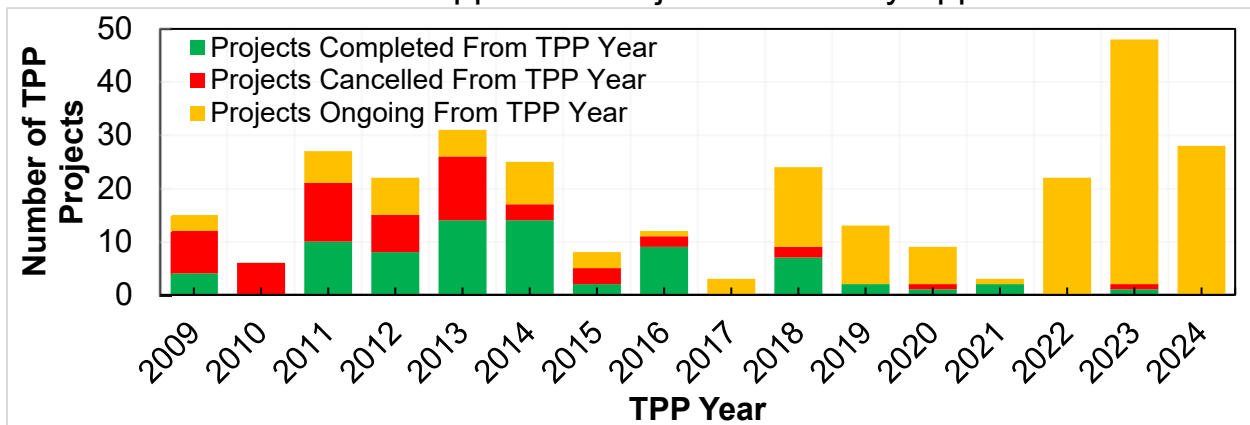
**296**  
Total<sup>4</sup>

  
**167**  
Ongoing

  
**73**  
Completed

  
**56**  
Cancelled<sup>5</sup>

## Current Status of CAISO-Approved Projects Sorted by Approval Year



**Projects are backlogged.** 34 of 146 projects approved from 2009-2016 are still ongoing, and 32 of those are delayed.



**Project backlogs are growing.** Only 13 of 150 projects approved since 2017 are now operational, and 4 are cancelled.



**CPUC permits are not needed for most projects.** Historically, only 11% of CAISO-approved projects require a CPUC permit.

<sup>1</sup> CAISO is the California Independent System Operator.

<sup>2</sup> TPP is the CAISO Transmission Planning Process.

<sup>4</sup> Based on 296 CAISO approved projects from 2009-2024. Sources include the CAISO TPP and Transmission Development Forum (TDF), Transmission Project Review (TPR), and CPUC transmission proceedings.

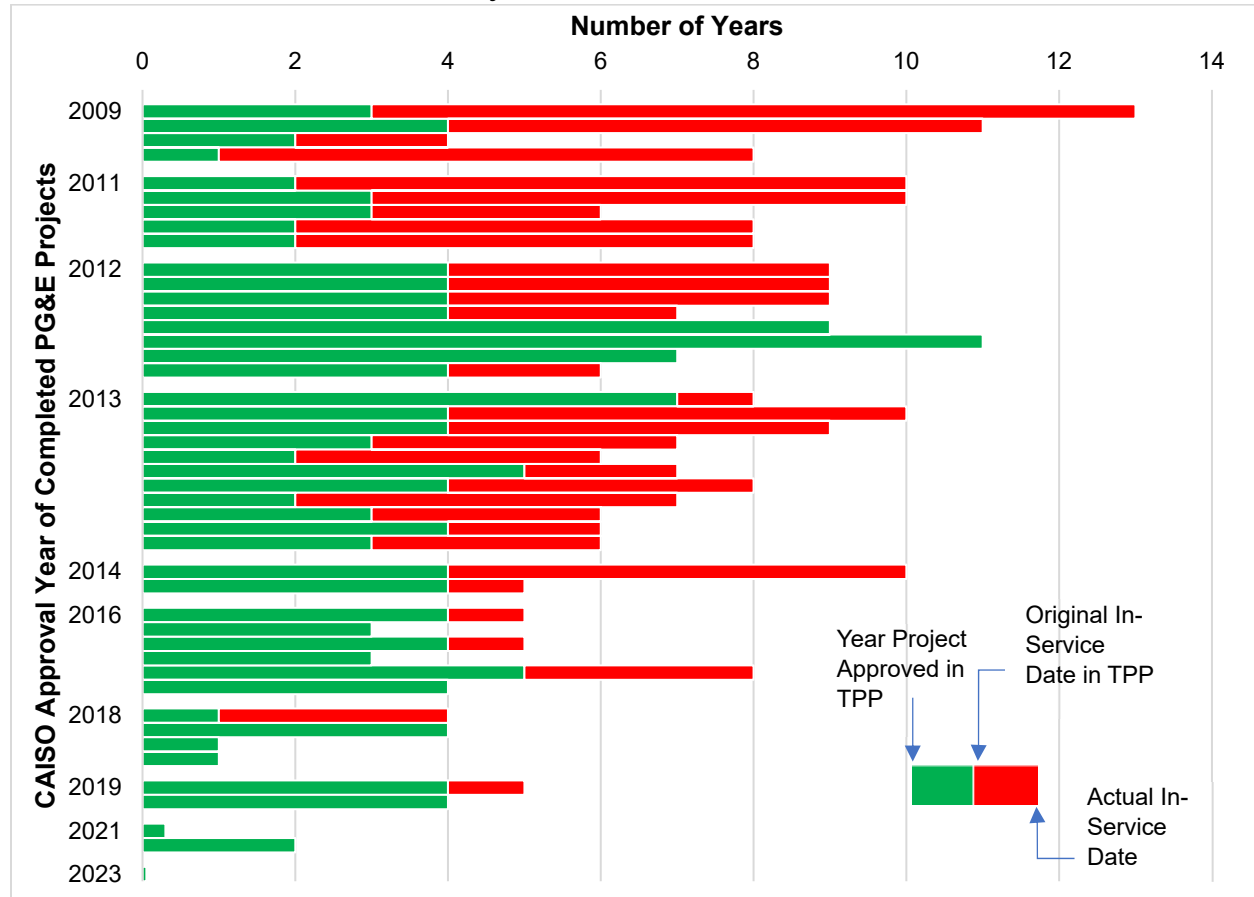
<sup>5</sup> Projects rescope in a CAISO Transmission Plan are considered canceled in that TPP year. Any rescope project approved by the CAISO is considered new in the TPP year the project was approved.

# Delay Times of PG&E Transmission Projects

## KEY FACT

**71%** of completed PG&E projects since 2009 were delayed.<sup>6</sup>

Project Development for 45 Completed PG&E Projects by Expected In-Service Date and Years Delayed<sup>7</sup>



The longest delay of a completed PG&E project is **10 years.**

The average delay of a completed PG&E project is **3.8 years.**

<sup>6</sup> A delayed project is defined as a CAISO-approved project when it exceeds the original estimated in-service date in the CAISO Transmission Plan. This is a list of 46 PG&E projects from CAISO's TPPs from 2009 to 2014 that are in-service. Transmission projects from other transmission owners are not displayed.

<sup>7</sup> Projects approved in CAISO's TPPs from 2009 to 2018 with no available completion dates are not on this list. Additionally, 10 PG&E projects approved after 2018 are delayed, but not yet completed.

# Transmission Development Timelines

## KEY FACT

Development of CAISO-approved projects takes **9+ years** on average.<sup>8</sup>

Some transmission projects require a permit from the CPUC before they can be built:

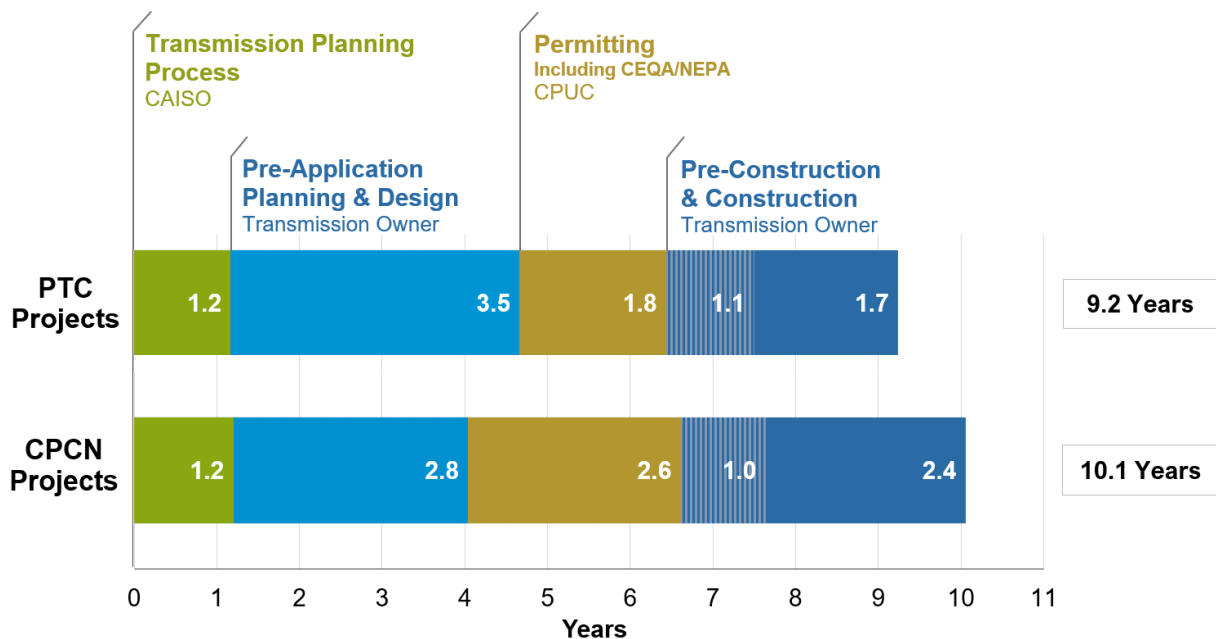
### Certificate of Public Convenience and Necessity (CPCN)

- 200 kV or above.
- Proof of project need, cost analysis, and environmental review.

### Permit to Construct (PTC)

- 50 – 200 kV.
- Environmental review only.

## Development Timeline: Concept to Construction



CPUC permitting is approximately 25% of the average project development timeline.

Transmission owners are responsible for approximately 65% of the average project development timeline.



33% of the average project development timeline is spent waiting for projects to be submitted to the CPUC for permitting.

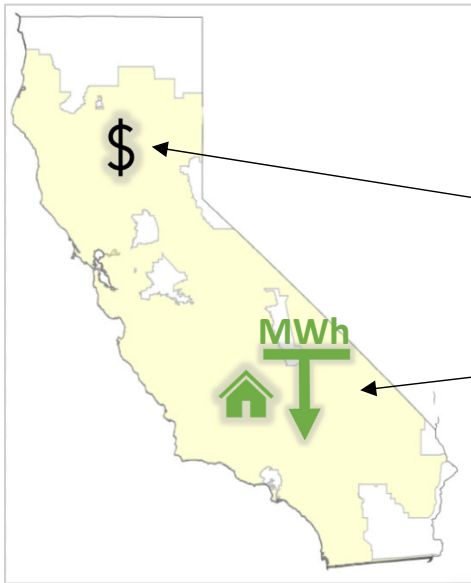
<sup>8</sup> The Public Advocates Office analyzed 54 transmission projects permitted at the CPUC between 2002-2024.

# Transmission Access Charge (TAC)

## DEFINITION

The TAC recovers the cost of electric transmission services in the CAISO region.

### What is the TAC?



The CAISO collects federally approved transmission costs based on the TAC rate.

The TAC rate is determined by this formula:

$$TAC = \frac{\sum \$}{\sum MWh}$$

**\$:** Annual transmission revenue requirements (TRR) for transmission facilities.

**MWh:** Annual gross load in the CAISO region.

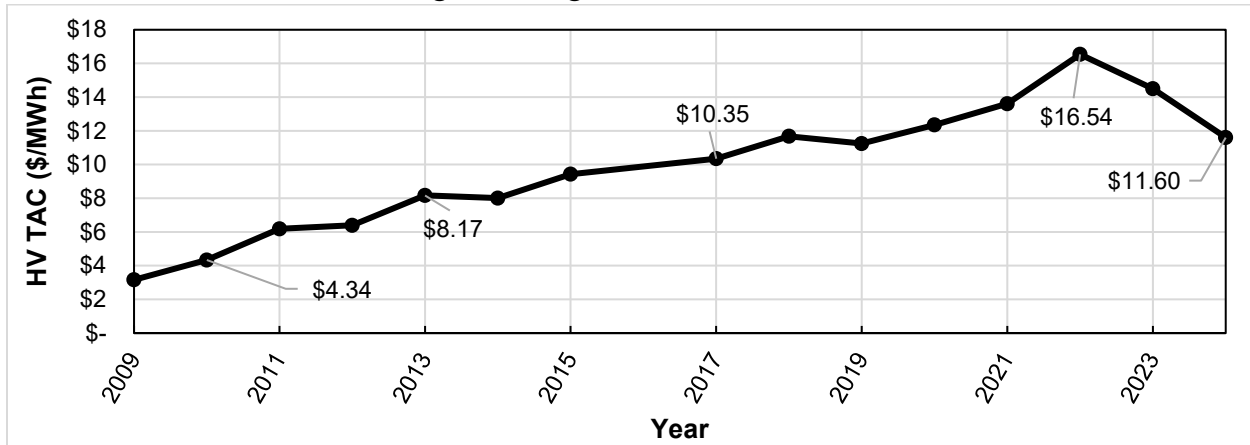
There are separate charges for high and low voltage facilities.

<b>Rate type:</b>	<b>High Voltage (HV) TAC</b>	<b>Low Voltage (LV) TAC</b>
Revenue types:	Facilities 200 kilovolt (kV) or above.	Facilities below 200 kV.
Load types:	Paid for by all end-use transmission customers in the CAISO region.	Paid for by customers in utility service territory (e.g., PG&E).
Rate structure:	Single rate for CAISO region.	Rates vary by utility.
Collection entity:	Load-serving electric utilities via CAISO settlement process.	Utility serving its own customers with low voltage transmission.

The TAC is reflected on customer utility bills as transmission rates.

# Historical TAC Rates

## Historical CAISO-Wide High Voltage TAC Rate



Changes to the TAC rate are driven by TRR (revenues) and load (consumption).

**Average annual increase of HV TRR since 2017:**

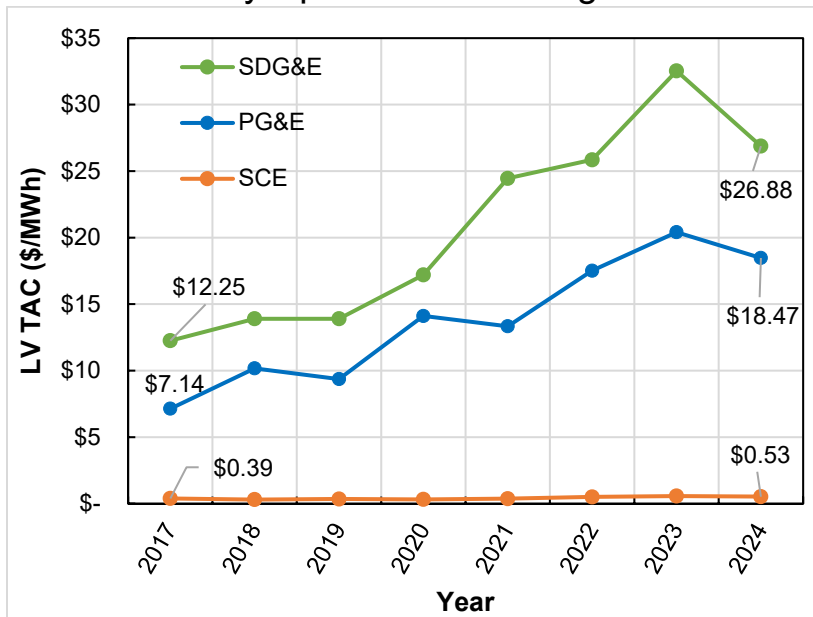
1.37%

**Average annual decrease of load since 2017:**

0.3%

From 2021 to 2023, the CAISO approved 25 policy-driven projects that are not yet in service but will add ~\$7 billion to the TAC in the future (see next page).

## Historical Utility-Specific Low Voltage TAC Rates



50% of the 2024 annualized transmission revenue requirement was allocated to low voltage transmission.

**Average annual increase of LV TRR since 2017:**

**SDG&E** +10.7%

**PG&E** +14.4%

**SCE<sup>9</sup>** +4.5%

<sup>9</sup> SCE's low voltage transmission costs may be recovered in CPUC or Federal Energy Regulatory Commission (FERC)-jurisdictional rates. SCE's high voltage transmission is recovered by FERC and thus included in the HV TAC.

## KEY FACT

## Forecasted TAC Rates

The HV TAC Rate could almost **double** by 2038 (\$22.5/MWh).<sup>10</sup>

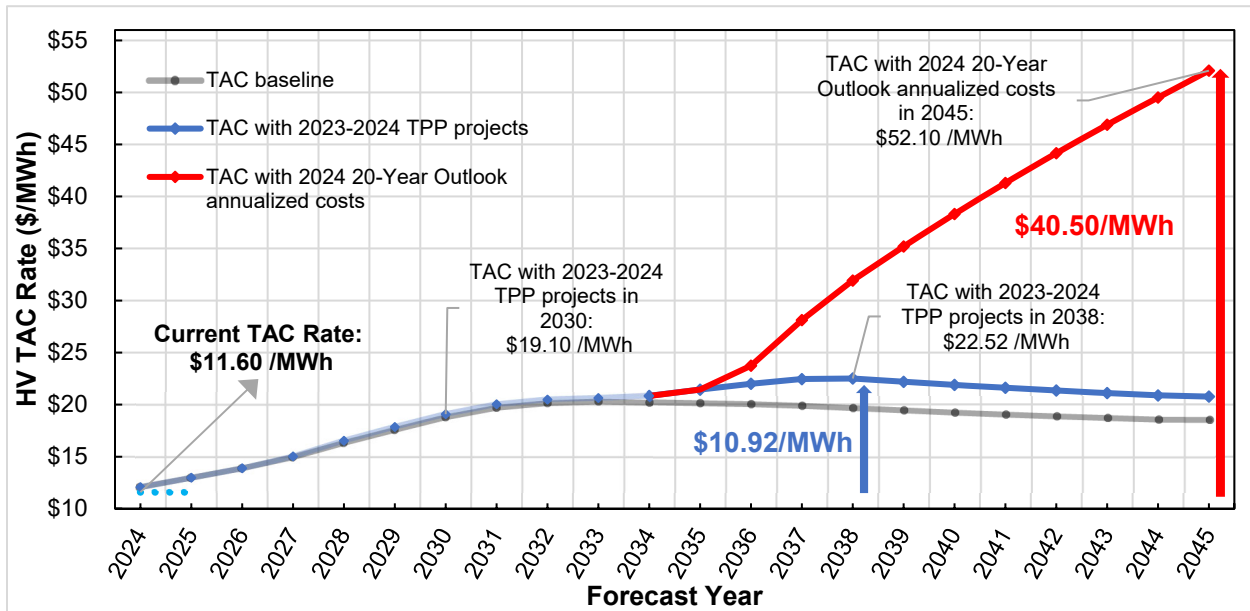


CAISO's 2023-2024 TPP approved \$6.3 Billion (nominal dollars) in transmission projects which increases transmission capacity by 85 MW by 2035.



CAISO's 20-Year Outlook forecasts the need for an additional \$63.2 Billion (nominal dollars) in transmission investment to decarbonize the grid and accommodate load growth by 2045.<sup>11</sup>

## HV TAC Rates Forecast and Forecast Scenarios



## Current TAC Rate (July 2024):

\$11.60/MWh

Potential increase to TAC from a grid with 100% clean energy resources:<sup>12</sup>

350% by 2045

<sup>10</sup> The HV TAC rate includes CAISO-approved projects' estimated costs in 2023 nominal dollars. Policy and reliability-driven projects approved in future CAISO TPPs, as well as transmission owner-initiated projects, are likely to add capital expenditures to the HV TAC Forecast.

<sup>11</sup> Scenario taken from CAISO's 20-Year Outlook (2024) high-level transmission blueprint is for informational purposes only. Projects already approved by the CAISO were removed from the total cost estimate. It's assumed Participating Transmission Owners will not incur transmission capital costs from 2045 going forward.

<sup>12</sup> CAISO's 20-Year Outlook considers a system-wide high electrification load projection, in which the 2045 peak load is 77,430 megawatts.

# CAISO Generation Interconnection Queue

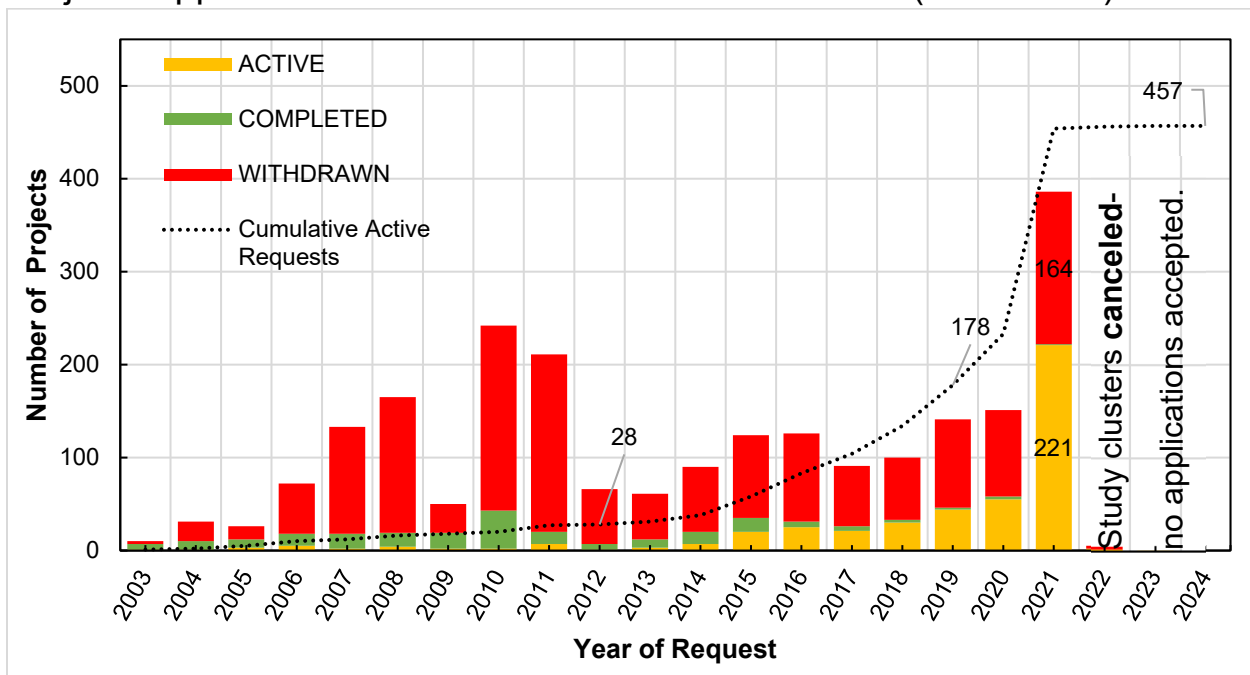
## KEY FACT

**457** Active generation interconnection requests (~126,700 MW requested in total) in the CAISO queue (since 2003).

## Interconnection Request Queue Status (2003-2021)



## Projects Applications for Transmission Interconnection (2003-2021)



There is more capacity requested in the interconnection queue than generation needed to meet energy and climate goals.

- **27,019 MWs** of installed capacity is in **operation**.
- **345,914 MWs** of capacity **withdrew** before completion.

- **70,000 MWs** of new renewable generation is **needed** by 2035 to meet state resource and load forecasts and energy goals.
- **126,728 MWs** of potential capacity is **actively** requesting interconnection.