SAN MATEO COUNTY
Sustainability Department

TRC

BAYREN

Bridging the Gap to Simplify and Standardize Heat Pump Water Heater Permits

Energy Code Ace Conference
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Alhad Dighe
San Mateo County Sustainability Department

David Douglass-Jaimes,
Jenna Lusczynski, Marianne Olson
TRC

Agenda

- Introduction and Background
  - BayREN Codes and Standards
  - Why permit simplification and standardization
  - Why HPWH
- Current permitting processes
  - Processes in San Mateo County
  - Applicant feedback and innovative strategies
- Pilot Strategies and Implementation Plan
- Next Steps

Who is BayREN?

The Bay Area Regional Energy Network (BayREN) is a **coalition of the Bay Area's nine counties** partnering to promote resource efficiency at the regional level, focusing on **energy and greenhouse gas reduction**.

Through its programs, BayREN serves **residents, business owners, and local government staff** with funding, technical assistance, and more.

BAYREN

Local Governments Empowering Our Communities

BayREN.org

BayREN's Codes & Standards Program

BayREN's Codes & Standards Program supports Bay Area local governments to increase energy and greenhouse gas savings through **trainings and tools** designed to:

1. **Improve compliance** with the State Energy Code (Title 24, Part 6)
2. Advance **local energy policies**
3. Coordinate with partners to provide local government perspectives to help **inform state energy policy**

Background

BAY AREA AIR DISTRICT RULE 9-6

- Effective January 1, 2027
- Bans gas water heaters <75k BTU/hr with NO_x emissions
- Only electric HPWHs meet the zero-NO_x standard
- Expected surge in HPWH permits across the Bay Area

THE CHALLENGE

- ~250k water heaters in San Mateo County, 800k pop.
- More requirements for fuel switching (Gas WH to HPWH)
- Inconsistent processes and large fee spread across jurisdictions
- Many water heating replacement projects go un-permitted

THIS PILOT

- Collaborative solution for San Mateo County and support before Rule 9-6
- Develop user-friendly, efficient strategies
- Focus: Single-family & multifamily retrofits
- Possible model to support entire Bay Area

Background Research Data Collection

- **21 jurisdictions** in San Mateo County
- **Permit process** details for HPWH
- Staff and applicant **roles** on HPWH permitting
- **Web-based platforms** and other tools
- Typical permit application processing **timelines and fees**
- Staff **training** and education on HPWH

Current Application Processes

- 8 of 21 jurisdictions offer HPWH permits without plan check
  - “Instant” or “Express,” typically online
  - May still require some documentation with the application
- 14 jurisdictions offer a single/combined permit for HPWH (rather than separate plumbing and electric)
- 18 jurisdictions have online application options for HPWH
- Typical application documentation:
  - Location plan
  - Electrical calculations and/or single-line diagrams
  - Product specifications
  - Energy Code compliance documentation

Application Fees

- Lowest: $0
- Highest: $534

- Higher fees tend to be in jurisdictions requiring two permits

- Sensitive topic with varied responses
  - Some recognize that low permit fees helps support permit compliance
  - Cost-recovery fee structure drives reluctance to lower fees
  - Simplified permit process does not necessarily equal reduced staff effort
  - Fees typically calculated manually based on project scope – potential for inconsistencies

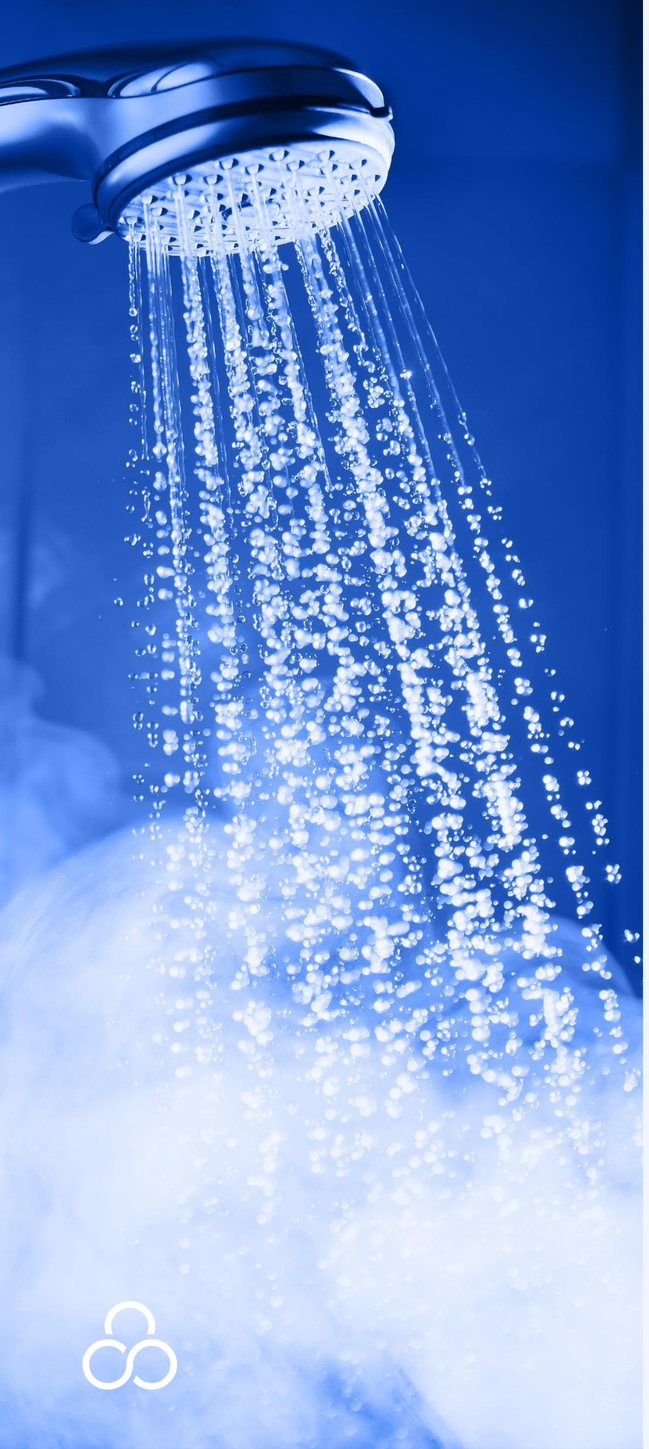
Industry Stakeholder Reponses

- Fees are generally reasonable, but can be inconsistent
- Application review and timeline generally reasonable

- Inspections are generally reasonable, but with some barriers
  - 4-hour time window is a challenge
  - Inspection and plan check seen as redundant
  - Some issues with inspectors' familiarity with HPWH systems (plumbing inspectors not familiar with electrical systems; electrical inspectors not familiar with plumbing systems)

Innovative Processes and Tools

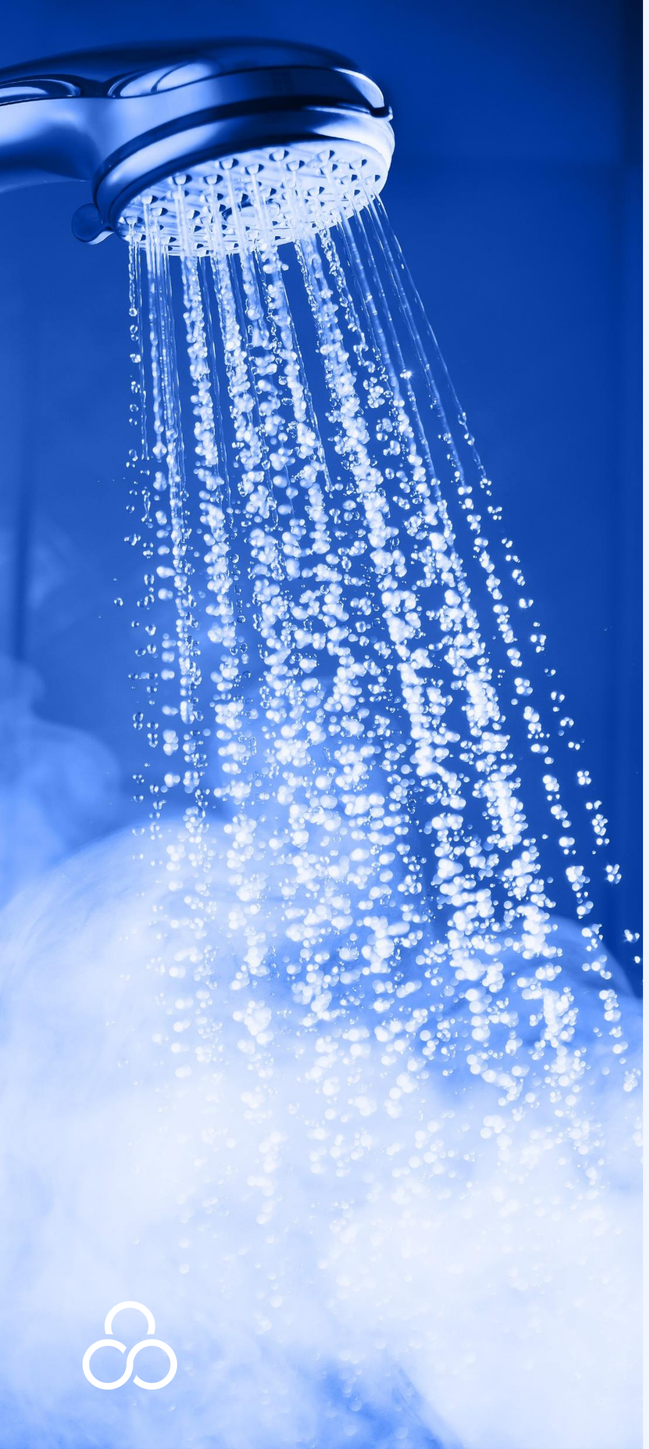
- Automated or AI-supported tools allow instant permitting
  - SolarAPP+, Symbium, BlitzPermits, etc.
- Virtual or remote inspections to minimize waiting times
  - Many jurisdictions used remote inspections during the COVID pandemic
- Self-certification and/or sampled inspections for trusted contractors



HPWH Permit Simplification Pilot

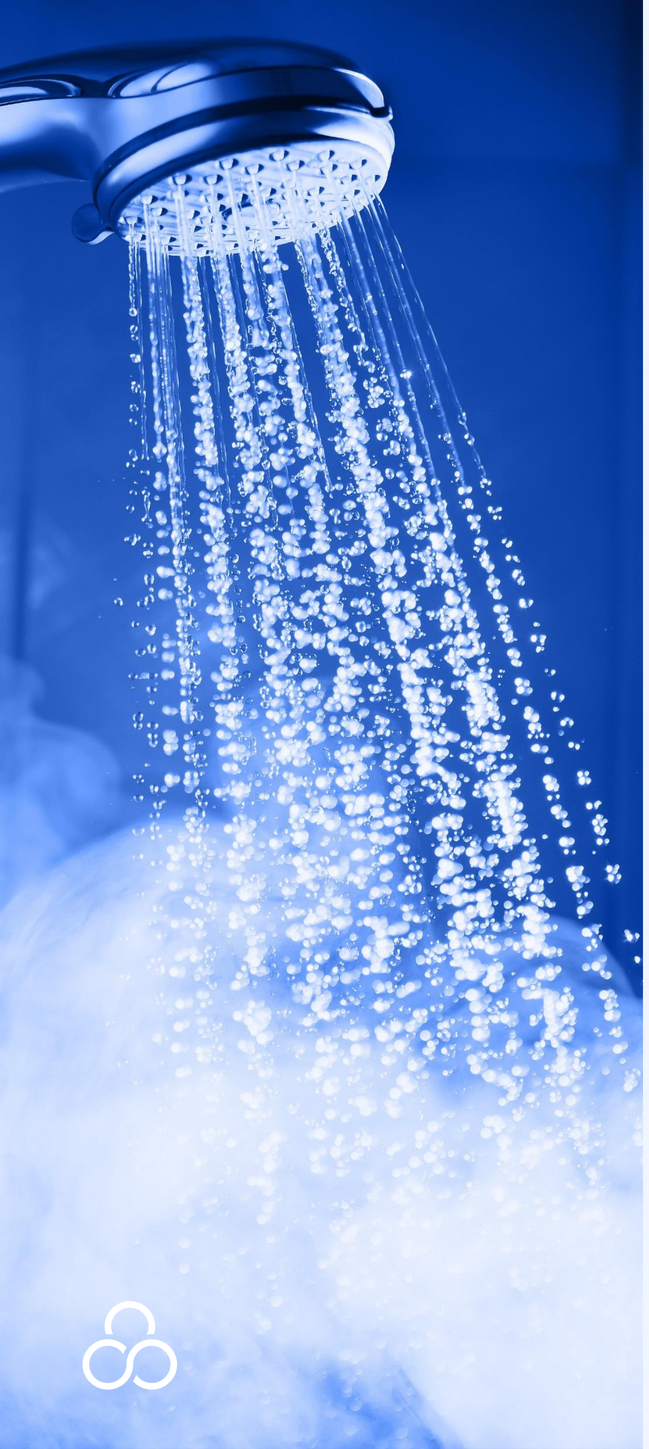
- Background Research and Analysis of Current HPWH Permit Processes
- Proposed Simplified Permitting Process
- Strategy for Pilot Implementation
- Implementing Pilot Program
- Reporting and Evaluation

We are here



Pilot Opportunities

- Resources to support permit applicants (checklists, guidelines, etc.)
- Clear, up-front application documents and fee information to minimize manual processing
- HPWH-specific criteria to support “instant” or “express” permitting
- Opportunities to reduce friction at inspection



Addressing All Stages of the Process

Pre-application

- Information Resources
- Standardize Experience
- Fee Structure

Application

- Single Permit
- Fee Structure
- Standardize Experience

Plan Check

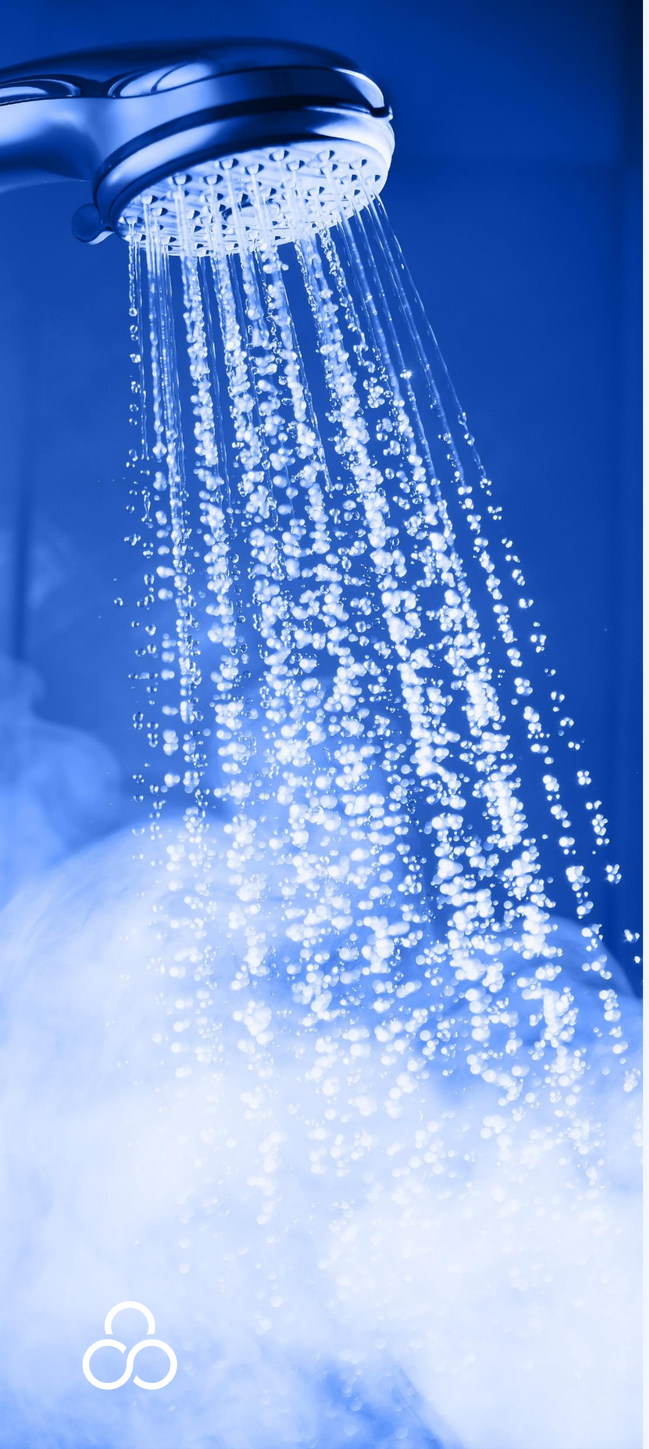
- Express Permitting
- Single Permit
- Fee Structure
- Training Resources

Inspection

- Inspection Simplification
- Training Resources

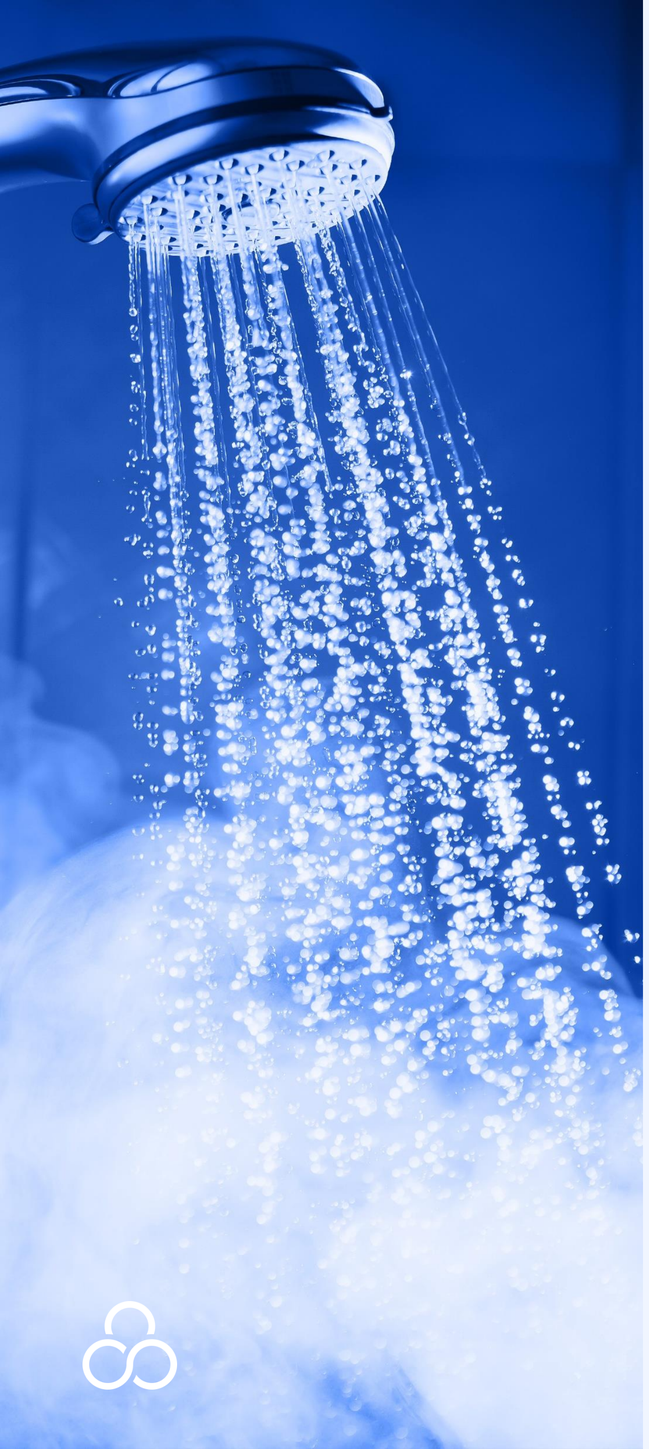
Multiple Approaches for Each Strategy

Express Permitting	Inspection	Standardize Online User Experience	Single Permit	Fee Structure	Training Resources	
AI Plan Check Tool	Sampled Inspections	County Web Hub	n/a	Reduced Flat Fee	n/a	Maximum Impact
Automate	Virtual or Asynchronous Inspections	Web Pages	HPWH-specific Permit	Transparent Fee	Active Outreach	Enhanced
Manual	In-Person Inspections	Permit Portal	Plumbing or Combination Permit	Master Fee Schedule	Informational Materials	Baseline



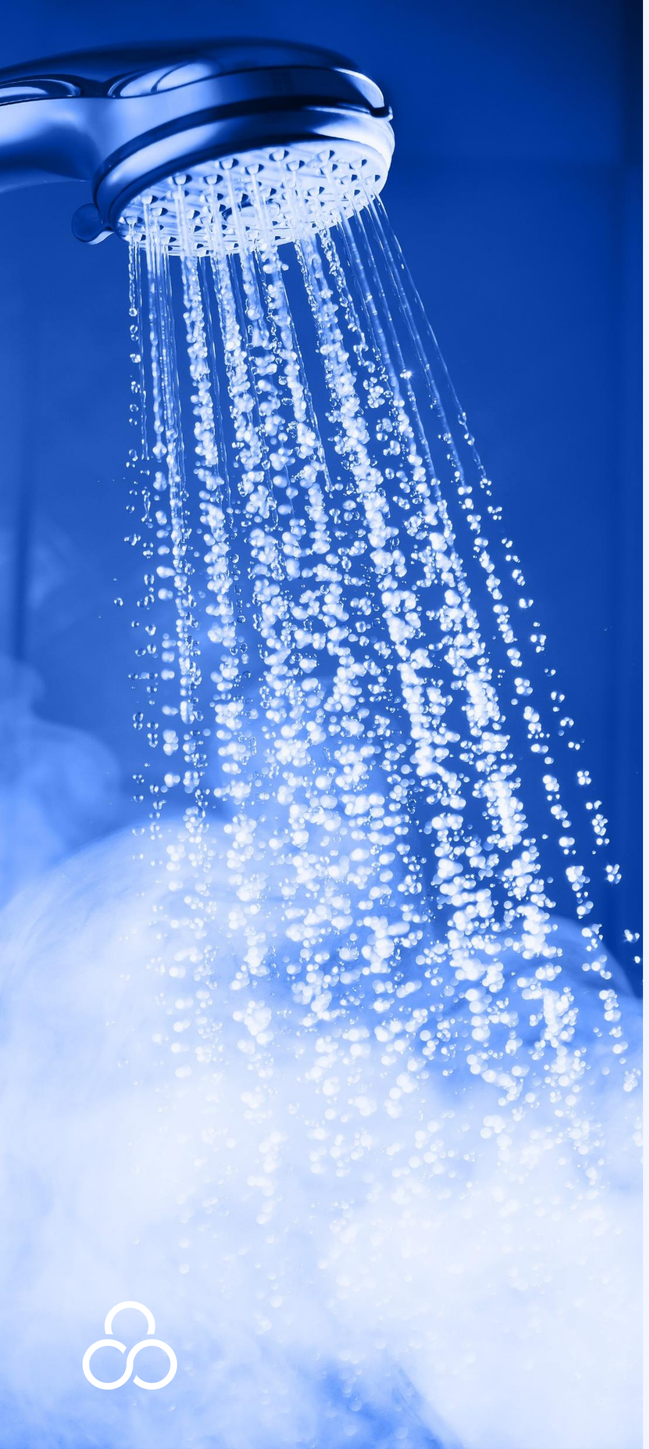
Adaptable to Jurisdiction Needs

	Baseline	Enhanced	Maximum Impact
Express Permitting	**Manual** • Minimize review time • May require changes to current plan check process • May establish minimum application criteria	**Automated** • "Instant" permit issuance • Online and/or in-person • May establish minimum application criteria • Use existing web portals	**AI Plan Check Tool** • If already in progress at the jurisdiction • Tools like SolarAPP+
Inspection	**In-person Inspections** • No change from current practice	**Virtual or Asynchronous** • Maximizing jurisdiction and contractor time • Maintaining similar process	**Sampled Inspections** • For "trusted" applicants • Requires additional systems or support



Automating Load Calculations with Peninsula Clean Energy (PCE) to streamline application review

- Panel capacity concerns are the biggest barrier to permit streamlining
- PCE will provide customer load calcs for pilot jurisdictions
- Customers will send an email to PCE and within 24 hours they will receive a "Peak Electrical Demand Disclosure Form"
- This will demonstrate the remaining room on the panel and serve as evidence of capacity
- Best for single appliance electrification, such as a HPWH install
- Compliant with NEC 220.87 for determining existing load



Automating Load Calculations with PCE

PENINSULA CLEAN ENERGY

PEAK ELECTRICAL DEMAND DISCLOSURE FORM

Provided for the purposes of determining available headroom for new electrical equipment

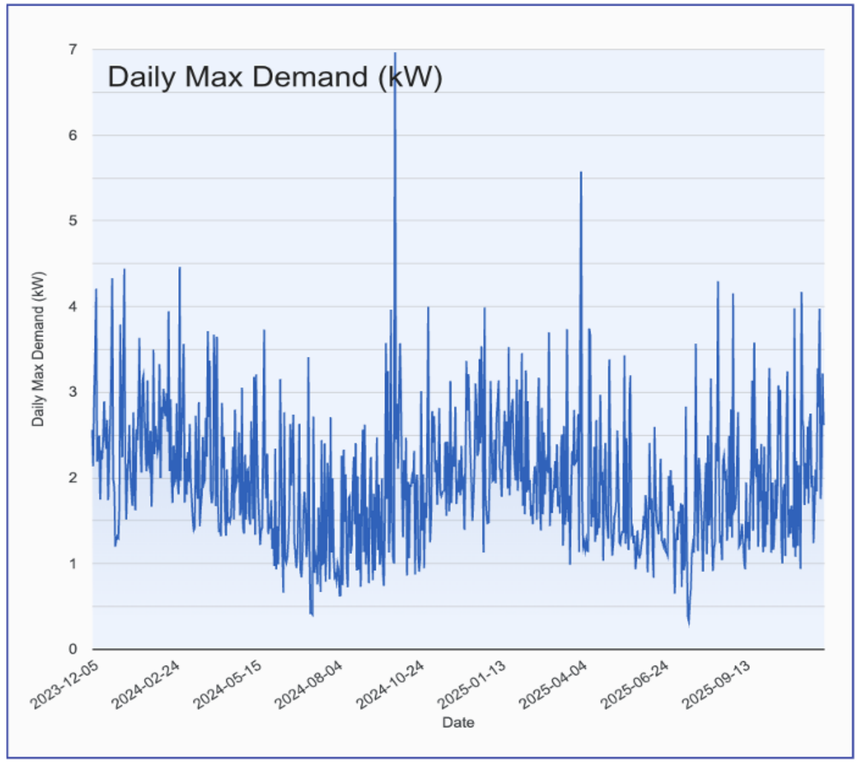
Site Address (ALL CAPS) 1910 TIGER AVE

Panel Size: 100A

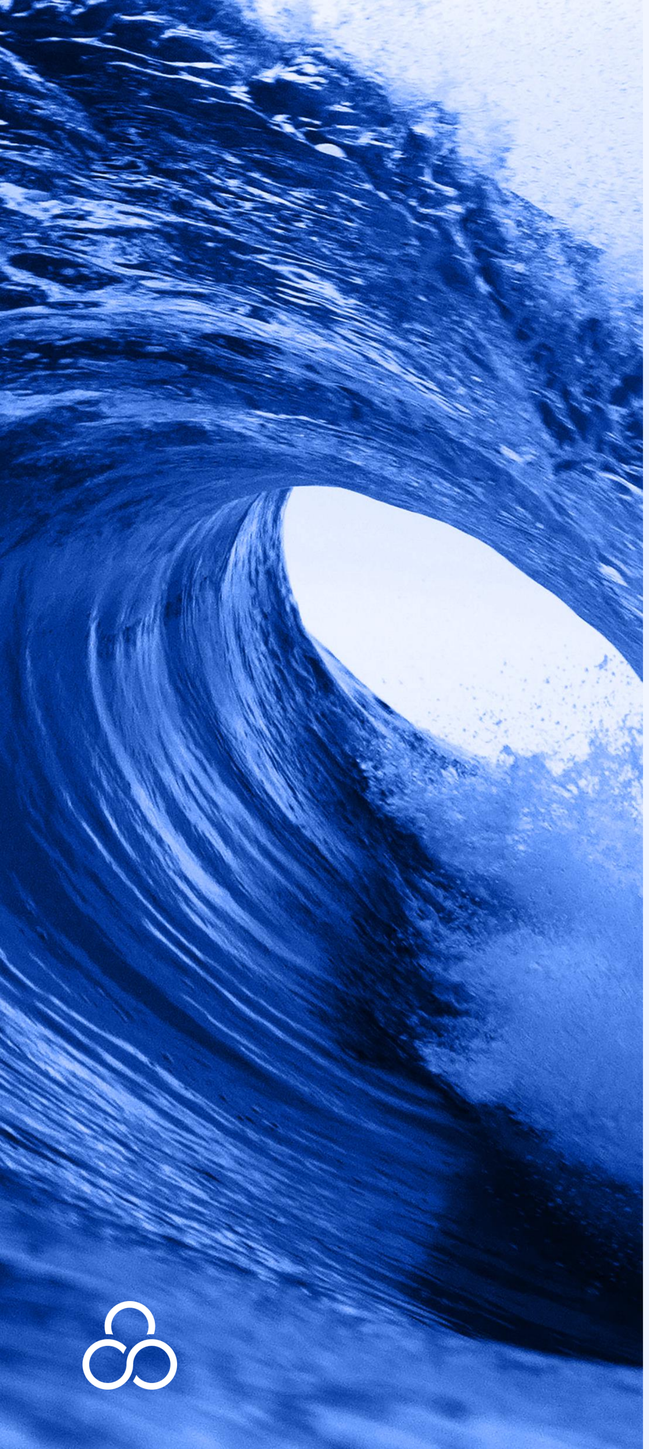
Analysis From: Dec 5, 2023

Analysis Through: Dec 1, 2025

Street Address 1	1910
City	BELMONT
Panel Size	100A
Max Demand Recorded Last 2 Years	6.96 kW
Including 25% Safety Factor	8.70 kW
Remaining Room on Panel	15.30 kW



Peninsula Clean Energy ("PCE") provides maximum electrical demand information at the request of the customer for use in evaluating service capacity, including load calculations performed pursuant to NEC 220.87. The data is derived from Advanced Metering Infrastructure ("AMI") interval data recorded by Pacific Gas and Electric Company's utility-grade meter. PCE provides this information as a courtesy based on the best available AMI data for the service address. This information is intended solely to support load evaluation and service-capacity analysis and should be used in conjunction with professional judgment and code-required calculations. It is the responsibility of the customer, the customer's licensed electrical contractor, and/or the authority having jurisdiction ("AHJ") to verify compliance with the California Electrical Code, the California Building Code, and all other applicable laws and standards. PCE does not approve, certify, or validate electrical system designs, load calculations, or installations, and the use of this information does not relieve contractors or AHJs of their independent obligations. PCE assumes no responsibility for decisions made by contractors or AHJs based on this information.



Pilot Implementation Status and Next Steps

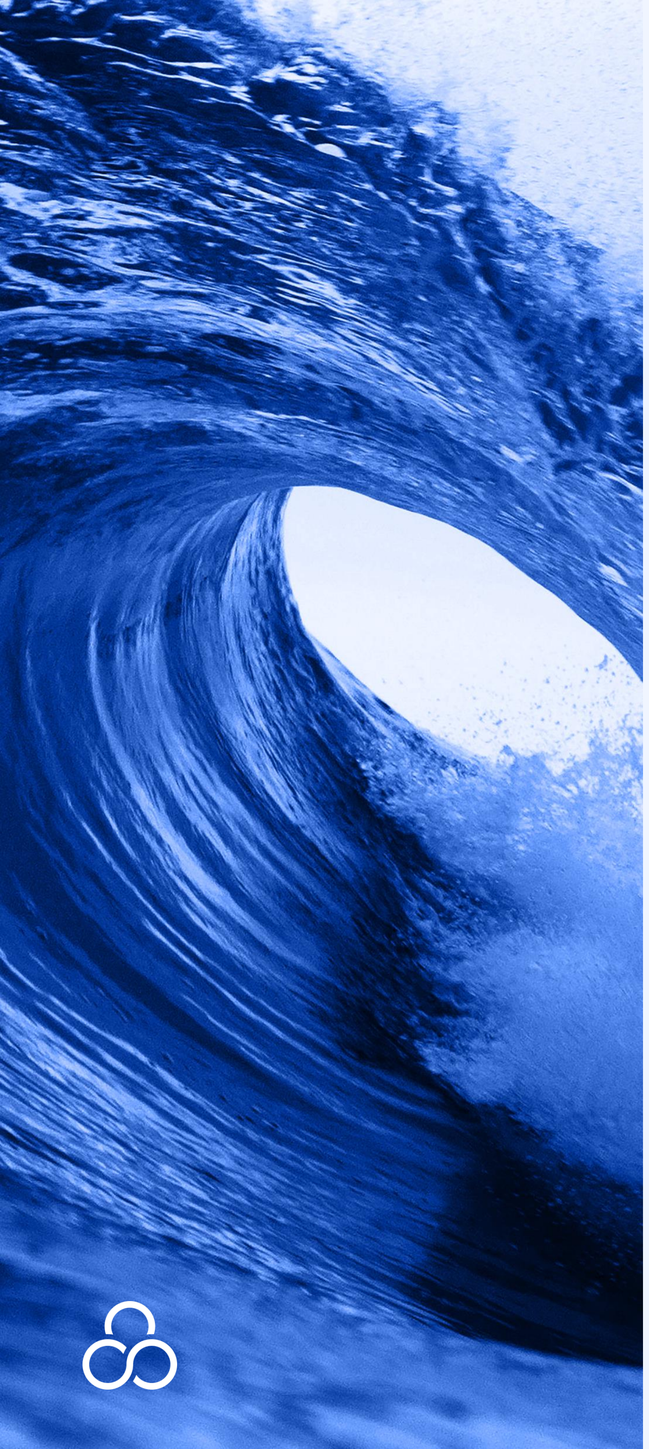
Complete:

- Participating jurisdictions identified
- Strategy details for each jurisdiction identified

Next Steps:

- Launch county-hosted online hub for resources and information
- Training, outreach, and resources for jurisdictions and applicants

- Pilot scheduled to launch April 1!



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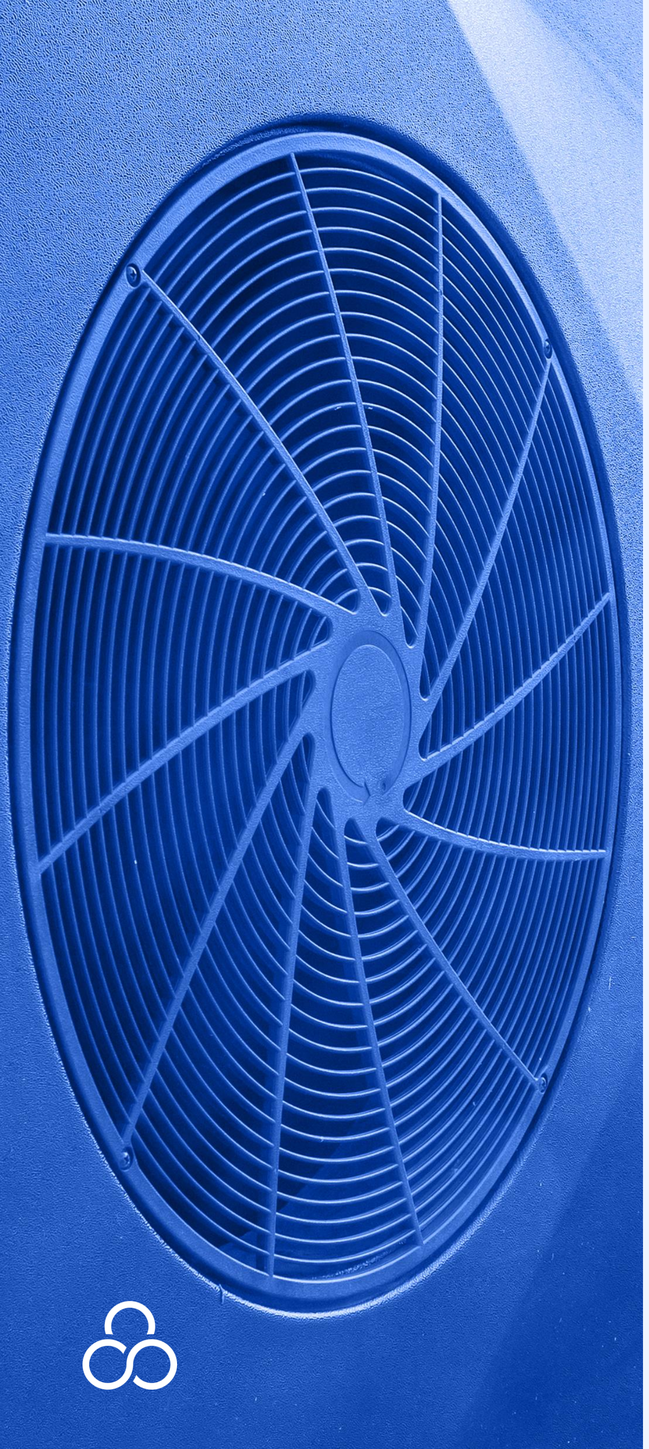
Thank you.

Alhad Dighe
Sustainability Specialist, San Mateo County
adighe@smcgov.org

David Douglass-Jaimes
Principal, TRC
ddouglass-Jaimes@trccompanies.com

Jenna Lusczynski
Lead Research Consultant, TRC
jlusczynski@trccompanies.com

Marianne Olson
Lead Research Engineer, TRC
molson@trccompanies.com



For more information, please reach out to the following.

Alhad Dighe
Program Manager
StopWaste / BayREN
adighe@stopwaste.org

Ori Paz
Senior Sustainability Specialist
San Mateo County Sustainability Department / BayREN
opaz@smcgov.org