CAC Item C6
Consent Item 12

To:	Ava Community Energy Authority
From:	Michael Quiroz, Senior Regulatory & Data Analyst
Subject:	Approving a Resolution authorizing Ava participation in PG&E Hourly Flex Pricing Pilots
Date:	September 18, 2024

Recommendation

This report proposes the Board adopt a Resolution approving Ava's participation in Hourly Flex Pricing ("HFP") pilots thereby complying with the California Energy Commission's Load Management Standards requirements.

Financial Impact

The potential financial costs and benefits to Ava of participating in the hourly pricing pilots are:

Costs	Benefits
Administrative staff time	$20/kW-year state incentive to Ava for enrolling customers
Bill credits to customers who reduce their usage	Reduced procurement costs due to customer load shift

Numbers for each of these categories are necessarily uncertain as there is little available data on the likely number of customers that will participate, or the extent to which participants will change their behavior in response to price signals.

In light of the uncertainties above, staff modeled multiple scenarios with various levels of customer adoption and price responsiveness.

Table 1: Financial estimates

Projected maximum cost of bill credits, less procurement savings, over 3-year pilot period			
Peak load reduction	Low adoption	Medium adoption	High adoption
Non-res customer count	15	31	62
1%	$ 7,068	$ 14,137	$ 28,273
5%	$ 23,605	$ 47,211	$ 94,421
10%	$ 57,315	$ 114,630	$ 229,259

These estimates do not include:

- Estimated administrative and implementation costs ($225,000) across 3 years
- Estimated state incentives paid to Ava totaling ($300,000)

These estimates assume that Ava staff participates in customer outreach to commercial and industrial (C&I) customers, and that these customers do not shift or increase consumption in response to low hourly prices. As such, these estimates could be considered the **maximum possible cost** in each scenario. It is worth noting that with the $300,000 in state incentives, Ava recoups more than its total costs in several scenarios.

See appendix A for more information on the methodology for this financial analysis.

Analysis and Context

Overview

California Energy Commission ("CEC") regulations, 20 CCR § 1623.1, *Large POU and Large CCA Requirements for Load Management Standards* ("LMS"), require Community Choice Aggregators ("CCAs") to offer customers voluntary participation in hourly marginal cost-based rates ("hourly rates") by 2027. The LMS provide that a CCA may modify compliance with this requirement if implementing hourly rates is found not to be technologically feasible, equitable, safe, or cost-effective.[1]

The Board approved Ava's Load Management Standards Compliance Plan ("Compliance Plan") in March of 2024. At the time, the plan concluded that:

> "Ava does not currently have sufficient information to conclude that proposing and implementing dynamic rates would be cost effective or provide benefits to Ava customers. Significant uncertainties exist related to the level of incremental load shift potential, customer response to market price risks, customer acceptance and adoption of a complex new rate design, the administrative costs of dynamic rate implementation, and potential cost shifts between participants and non-participants. To address these uncertainties, Ava is considering participating in dynamic pricing

[1] LMS §1623.1(a)(2)

pilots and rates with PG&E… Ava will re-evaluate the proposal of dynamic rates in the next update of this plan with the benefit of additional information from pilots."[2]

Since the adoption of the Compliance Plan, Ava staff has been coordinating with PG&E on the development of California Public Utilities Commission ("CPUC") approved hourly pricing pilots that could better inform Ava's evaluation of hourly rates. Most immediately, PG&E is preparing to launch 1) the Expanded Pilots and 2) the Vehicle to Grid Integration ("VGI") Pilots, as authorized by the CPUC in Resolution E-5192[3] and D.24-01-032[4] respectively.

The Expanded Pilots

The Expanded Pilots are an extension of Valley Clean Energy and PG&E's Agricultural Pumping Dynamic Rate Pilot ("Ag Pilot"), which was authorized in D.21-12-015.[5] The Ag Pilot used hourly rates to incentivize large agricultural customers to pump water when energy is cheapest. The pilot also leveraged pump automation controllers to increase the responsiveness of customers to the hourly price signal.

An evaluation of the pilot found that automation technology facilitated significant reductions in load during peak times, and that dynamic pricing improved price responsiveness outside of the peak period relative to time of use rates.[6] Encouraged by these results, the CPUC authorized the expansion of the Ag Pilot with the following characteristics:

- Eligibility for bundled and unbundled agricultural, commercial, industrial, and residential customers on agriculture, medium-large commercial/industrial, and residential tariffs: AG-A1, AG-A2, AG-B, AG-C, B-6, B-10, B-19, B-20, E-ELEC, and EV-2AAn enrollment target of 100MW for all of PG&E's territory; a minimum enrollment level of 20MW; and no cap on total enrollment
- Administration by PG&E with the option of participation by CCAs
- An incentive of $20 per kW-year enrolled in the pilot for participating CCAs
- A marketing, education, and outreach strategy developed by PG&E

[2] Ava Community Energy Load Management Standards Compliance Plan, at 17
[3] Resolution E-5192, Pacific Gas and Electric Company Advice Letter 6259-E requests approval of four vehicle-grid integration pilots pursuant to Decision 20-12-029, issued May 6 2022
[4] D.24-01-031, Decision to Expand System Reliability Pilots of Pacific Gas and Electric Company and Southern California Edison Company, issued Jan 26 2024
[5] D.21-12-015, Phase 2 Decision Directing Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company to Take Actions to Prepare for Potential Extreme Weather in the Summers of 2022 and 2023, issued Dec 6 2021
[6] Mid-Term Evaluation of Valley Clean Energy's Agricultural Pumping Dynamic Rate Pilot, Daniel G. Hansen and Michael Ty Clark, December 22 2023

The Vehicle to Grid Integration (VGI) Pilots

Dually motivated by legislation and the recommendations of a working group,[7] the CPUC authorized PG&E to propose VGI pilots that would test the effectiveness of bidirectional chargers in enabling smart charging and grid services.[8]

On July 15, 2021, PG&E filed AL 6259-E, which proposed the VGI Pilots. The CPUC approved the pilots with the following characteristics:

- Eligibility for bundled and unbundled residential and commercial customers on a variety of residential and non-residential rates: EV2-A, E-ELEC, B6, B10, B19, BEV, and B20;
- Enrollment targets of 1,000 residential customers with light duty EVs, and 200 commercial chargers that enable VGI for light, medium, and heavy duty EVs across all PG&E's territory;
- Upfront incentives for installation of bidirectional chargers;
- Administration by PG&E with the option of participation by CCAs.

Ava is aware of at least one commercial customer that is interested in participating in the VGI Pilots. If Ava does not offer this customer hourly rates via the VGI pilot, the customer would have to opt-out of Ava's service to receive those rates through PG&E's exclusive service.

Rate design and billing

The Expanded and VGI pilots will share the same rate design. The rates would include:

- Marginal Energy Cost ("MEC"): an hourly rate that reflects the incremental costs that a utility incurs to supply one more kilowatt-hour of electricity. The MEC would be based on the day ahead California Independent System Operator ("CAISO") price for PG&E's service territory.
- Marginal Generation Capacity Cost ("MGCC"): an hourly rate that reflects the cost associated with adding one more unit of generation capacity to meet peak demand. The MGCC would be based on PG&E's calculations, which are approved by the CPUC.
- A day ahead hourly distribution rate designed to recover primary distribution capacity costs ("PDCC"), depending on the customer's location.
- A transmission rate equal to the transmission rate on the customer's otherwise applicable tariff ("OAT").
- A subscription component that collects revenue equal to the customer's OAT rate applied to a predefined, customer-specific load profile. This component helps protect the

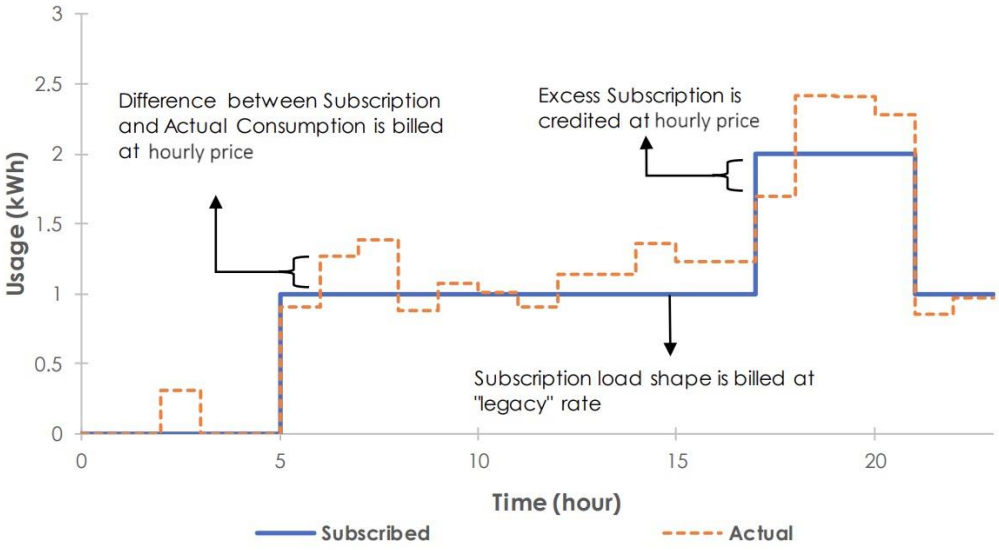
[7] Senate Bill 676 (Ch. 484, Stats. 2019) requires the CPUC to establish strategies and quantifiable metrics to maximize the use of feasible and cost-effective electric vehicle integration in the grid by January 1, 2030. The VGI working group evaluated potential VGI use cases and provided policy recommendation in a June 30 2020 report.

[8] D.20-12-029, Decision Concerning Implementation of Senate Bill 676 and Vehicle-Grid Integration Strategies, issued December 21 2020

customer from bill volatility caused by the hourly price signal. See Figure 1 below for further details on the subscription component.

During the pilot, participating customers will continue to pay their normal monthly electric bill according to their OAT. In addition to their normal monthly bill, customers will receive a performance report that reflects credits or charges based on the customers' performance under the hourly price. Customers are credited at the hourly price for reduced consumption. Every 12 months, the customer's monthly credits and charges will be trued-up, and the customer would receive a credit if they paid less on the hourly pricing pilot compared to their current plan. The customer would not be charged extra if they incur net charges. With this bill protection, participating customers can only benefit from the pilots.

Figure 1: customer subscription



Effect on Ava's Value Proposition

By engaging in these pilots, Ava would be offering participating customers the same hourly rates as PG&E. As such, any applicable credits from customers' participation in hourly pricing would not reflect Ava's value proposition. However, participating customers will never pay more than under their standard Ava OAT due to the pilots' annual bill protection. In addition, the performance report's billing structure ensures that customers on Bright Choice continue to receive a discounted rate compared to those on Renewable 100.

Implementation Plan and Timeline

The VGI pilot is targeted to launch at the end of September 2024, and the Expanded Pilots are targeted to launch in November 2024. Participation in the Expanded Pilots will initially be available to Ava customers on eligible commercial, industrial, and residential rates (agricultural customers will not be eligible initially). Ava plans to expand eligibility to customers on

agricultural rates as early as 2026. Customers will be able to enroll in the pilots through PG&E's webpage.

PG&E is working with automation service providers ("ASPs") to help automate and optimize customer load in response to hourly price signals. PG&E plans to include unbundled customers in their outreach efforts regardless of whether Ava decides to participate. If participation is approved, Ava will supplement PG&E's enrollment efforts through targeted and direct outreach to eligible commercial and industrial customers.

Conclusion

By participating in these pilots, Ava will gain valuable information about hourly rates, including how many customers are interested in adopting them; how customers respond to more granular price signals; how automation can increase the responsiveness of load; how to communicate with customers about complex rate design; and how the impact of hourly price signals varies across customer classes and demographics. This information is key to informing Ava's decision of whether to eventually adopt hourly rates and how to otherwise comply with the Load Management Standards.

Committee Recommendation

This item is slated for discussion during the September 11, 2024, meeting of the Financial, Administrative, and Procurement Committee. A PowerPoint presentation from that meeting is attached and has been updated based on board member feedback.

Attachments

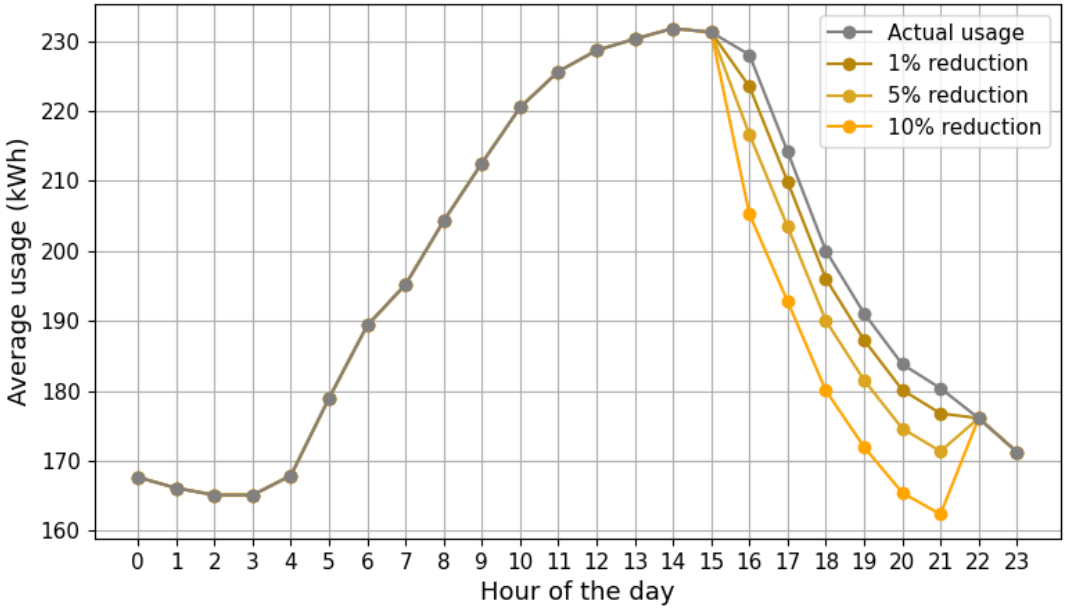
A. Financial estimate methodology and assumptions
B. Presentation from September 11 Financial, Administrative, and Procurement Meeting
C. Resolution Authorizing Ava Participation in the PG&E Hourly Flex Pricing Pilot

Appendix A: Financial estimate methodology and assumptions

Methodology for estimating bill credits

1. Estimate reduced peak consumption under hourly pricing (see Figure 2 below)
2. Estimate customer-specific subscription loadshapes by averaging the usage in each hour of all matching day types (weekday/weekend) in a given month
3. Find Δ (kWh) between customer subscription and consumption
4. Multiply Δ (kWh) by the hourly price ($/kWh) in each hour and sum across all hours to find the annual cost of bill credits
5. Combine projected costs (bill credits, administrative costs) and benefits ($20/kW-yr incentive) across all three pilot years to find the total financial impact to Ava

Figure 2: Average BEA customer consumption and peak reduction scenarios



Key assumptions

- 2022 test year: Ava staff used historical customer data from 2022.
- Reduction in procurement costs: Procurement savings due to customer load shift can be approximated by the day ahead marginal energy cost ("MEC") which is the PG&E DLAP $/kWh in each hour. For example, if a customer reduces consumption by 5 kWh in a given hour, and the MEC is 30¢/kWh, the reduction in procurement cost would be 5 kWh * 30¢ = $1.5. In other words, that's 5 kWh that Ava doesn't have to purchase at 30¢/kWh. Procurement cost savings are incorporated into table 1.
- CPUC Incentives for CCAs: For participation in the expanded pilots, CCAs receive $20 per kW-year of customer enrollment subject to a $3,600,000 cap for all CCAs, or $300,000 for each of the 12 CCAs in PG&E's service territory. Staff calculated each customer's capacity as their annual maximum hourly demand and found that in each scenario multiplying aggregate capacity by the $20/kW-year incentive yielded an amount in excess

$300,000. As such, staff assume that Ava receives the maximum of $300,000 in incentives in each scenario. It is unclear how the CPUC will define and calculate enrolled customer capacity; a different methodology could potentially reduce the incentives Ava receives.

- Load reduction: Customers may increase or decrease their usage in response to hourly price signals. We assume that customers will decrease usage from 4-9PM, when hourly price signals are typically higher than time-of-use rates. We do not incorporate potential increases in customer usage during other times of the day.
- Customer adoption: Staff believe that large energy-conscious customers, such as those enrolled in Ava's Building Efficiency Accelerator (BEA) program, are more likely to adopt hourly rates. The "medium adoption" scenario assumes 31 current BEA customers enroll in the pilots. These customers currently take service on B6, B10, B19, B20, E20, and TC1. The "high adoption" scenario assumes double the enrollment, and the "low adoption" scenarios assume half.
- Residential customers: Ava staff modeled residential customer outcomes separately and found minimal financial impact. As such, this analysis focuses on large commercial and industrial, who might be more likely to adopt hourly rates.

Ava participation in hourly pricing pilots

September 11, 2024 Financial, Administrative, and Procurement Meeting

Summary

- Staff is seeking September board approval for Ava's participation in Hourly Flex Pricing (HFP, also known as real time pricing) as hourly rates will deviate from the existing value proposition
- Staff analyzed the financial impacts of voluntary customer participation
    - HFP pilot participation could result in a net benefit of $67,932 or cost of $154,259 depending on customer adoption and CPUC incentives, and not including reduced procurement costs

Background on hourly pricing

- The goal of hourly pricing is to align electricity prices more closely with the actual cost of generating/delivering electricity through the day, determined by supply and demand fluctuations
- Objectives include:
  - Incentivizing customers to optimize energy usage
  - Promoting grid efficiency by reducing strain during peak periods and increasing consumption when low-cost renewables are abundant
- Increased complexity relative to time of use ("TOU") rates

Objectives of HFP participation

- **Compliance with Load Management Standards (LMS)**
  - The CEC's Load Management Standards (LMS) require CCAs to evaluate and adopt hourly marginal cost rates/programs by 2027
  - Ava's LMS Compliance Plan, approved by the Board in March 2024, considered participation in hourly pricing pilots with PG&E to address uncertainties regarding hourly rates
  - CEC Staff has indicated that Ava's participation in RTP pilots is key to maintaining compliance.
- **Offer rate options comparable to PG&E**
  - Ava is aware of at least one commercial customer who will participate in the VGI Pilot. If Ava does not participate in the HFP pilots, interested customers would have to opt-out of Ava's service to receive those rates through PG&E's exclusive service.
- **Inform future HFP rate design & participation**
  - Ava will gain valuable information about hourly rates which is key to informing Ava's decision of whether to eventually adopt hourly rates and how to otherwise comply with the Load Management Standards.

Implementation

- **Launch timeline**
  - September 2024 – VGI/V2X (residential & business EV rates, non-res customers that provide EV charging services)
  - November 2024 - Expanded Pilots (C&I, residential rates)
  - 2026 - Expanded Pilots (Ag rates)
    - Pilot available to Ag rates earlier; Ava is looking to participate in 2026 with new agriculture customers in unincorporated San Joaquin County
- **Billing**
  - Customers receive an annual credit for responding to hourly price signals
  - Annual bill protection; customers will not pay more than under their Ava otherwise applicable tariff (OAT)
  - Customers will receive "shadow bills" reflecting what they would have been billed under hourly price signals; limited implementation work is required from Ava
- **Outreach**
  - PG&E will market to unbundled customers regardless of whether Ava decides to participate
  - Ava to supplement PG&E outreach with direct outreach to select C&I customers

Analysis overview

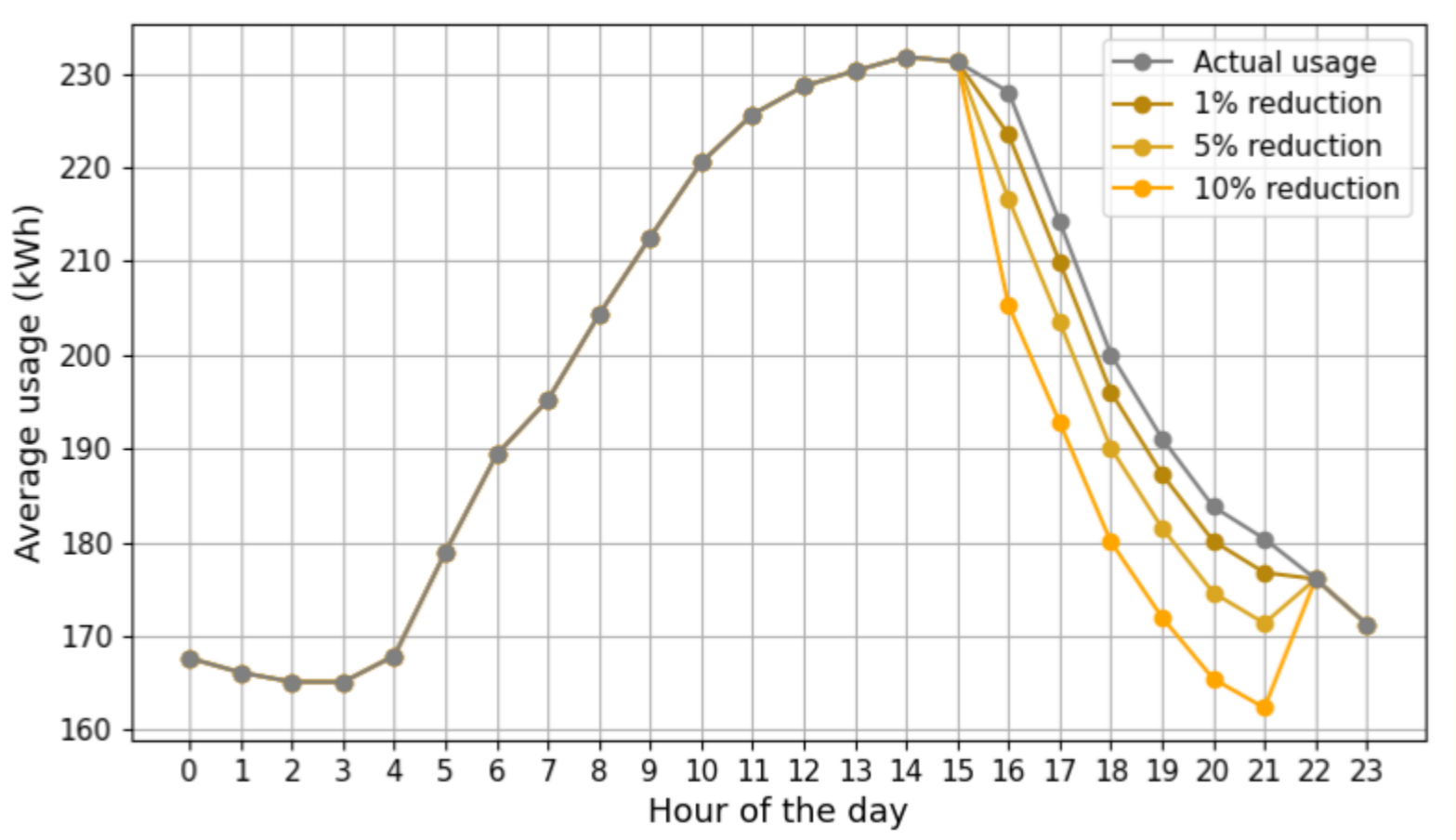
- Potential financial costs and benefits to Ava include:

Costs	Benefits
Bill credits to customers who reduce their usage	$20/kW-year state incentive to Ava for enrolling customers
Administrative and implementation costs	Reduced procurement costs due to customer load shift

- There is uncertainty in how many customers will participate (enrollment is voluntary) and how customers will respond to hourly price signals
    - PG&E is working with automation service providers ("ASPs") to help automate and optimize customer load in response to hourly price signals
- To address uncertainty, staff modeled multiple scenarios with various levels of customer adoption and price responsiveness

Analysis overview

Figure 1: customer usage and estimated peak reduction



Analysis results

Projected maximum cost of bill credits, less procurement savings, over 3-year pilot period			
Peak load reduction	Low adoption	Medium adoption	High adoption
Non-res customer count*	15	31	62
1%	$ 7,068	$ 14,137	$ 28,273
5%	$ 23,605	$ 47,211	$ 94,421
10%	$ 57,315	$ 114,630	$ 229,259

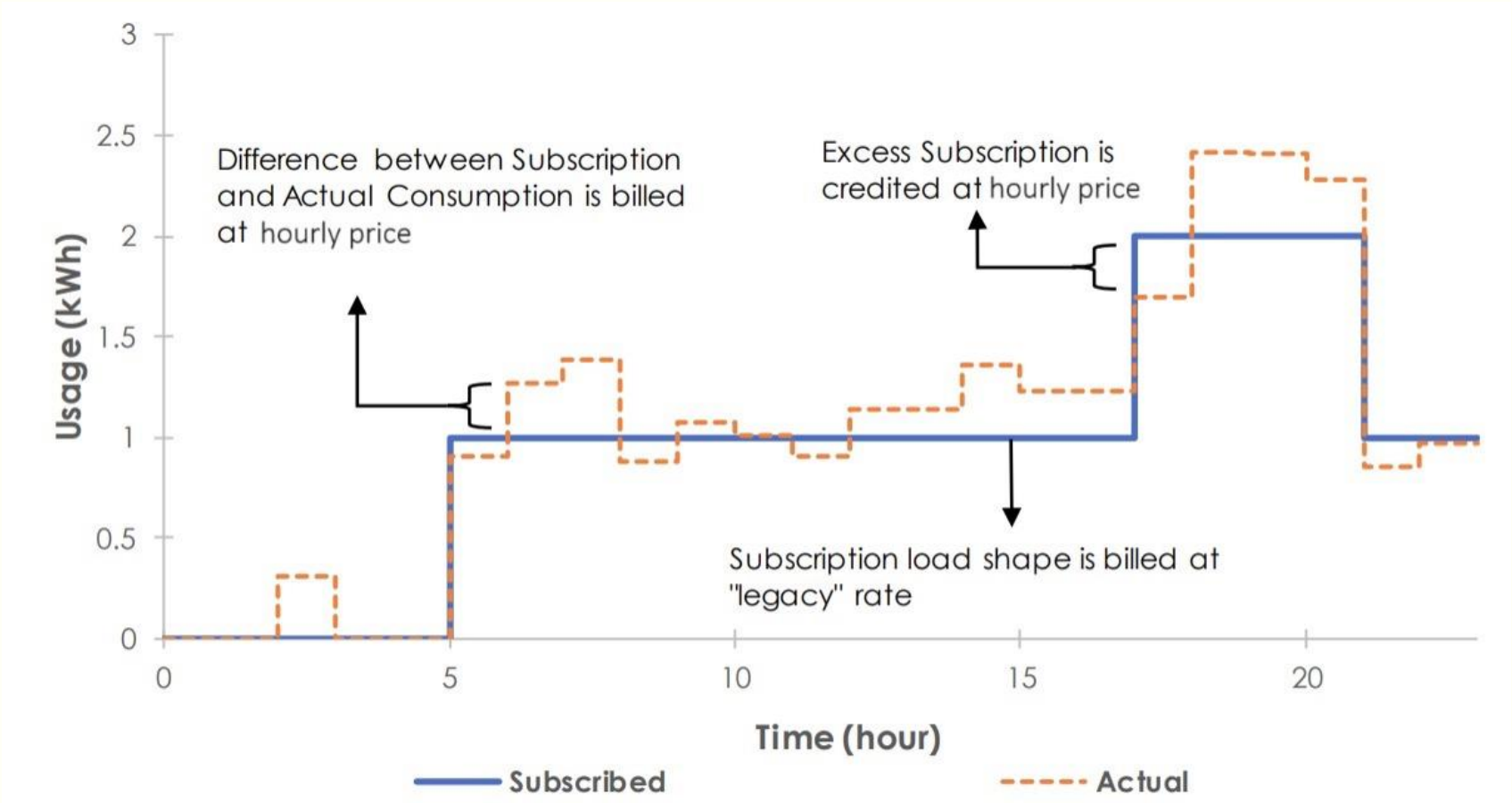
- These estimates do not include:
  - Estimated administrative and implementation **costs** (**$225,000**) over 3 years
  - Estimated state **incentives** to Ava (**$300,00**) over 3 years which recoup all costs in some scenarios
- Key assumptions:
  - Ava staff participates in customer outreach to C&I customers
  - Customers do not shift load or increase consumption in response to low hourly prices

*Ava staff modeled residential customers and found minimal financial impacts, so the financial analysis focuses on large C&I customers

Appendix

Customer subscription and bill credits

Figure 1: customer subscription and bill credits



Analysis results without procurement savings

Projected maximum cost of bill credits over 3-year pilot period			
Peak load reduction	Low adoption	Medium adoption	High adoption
Non-res customer count	15	31	62
1%	$ 16,924	$ 33,847	$ 67,694
5%	$ 99,970	$ 199,939	$ 399,878
10%	$ 273,687	$ 547,375	$ 1,094,749

- These estimates do not include:
  - Estimated administrative and implementation **costs** (**$225,000**) over 3 years
  - Estimated state **incentives** to Ava (**$300,00**) over 3 years which recoup all costs in some scenarios
  - Reduction in procurement costs due to customer load shifting
- Key assumptions:
  - Ava staff participates in customer outreach to C&I customers
  - Customers do not shift load or increase consumption in response to low hourly prices

RESOLUTION NO. R-2024-XX

A RESOLUTION OF THE BOARD OF DIRECTORS

OF THE AVA COMMUNITY ENERGY AUTHORITY AUTHORIZING PARTICIPATION IN THE PG&E HOURLY FLEX PRICING PILOTS

WHEREAS Ava Community Energy Authority ("Ava") was formed as a community choice aggregation agency ("CCA") on December 1, 2016, under the Joint Exercise of Powers Act, California Government Code sections 6500 *et seq.,* among the County of Alameda, and the Cities of Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Piedmont, Oakland, San Leandro, and Union City to study, promote, develop, conduct, operate, and manage energy-related climate change programs in all of the member jurisdictions. The cities of Newark and Pleasanton, located in Alameda County, along with the City of Tracy, located in San Joaquin County, were added as members of Ava and parties to the Joint Powers Agreement ("JPA") in March of 2020. The city of Stockton was added as a member to Ava in September of 2022. The city of Lathrop was added as a member to Ava in October of 2023. San Joaquin County was added as a member to Ava in July 2024. On October 24, 2023, Ava legally adopted the name Ava Community Energy Authority, where it had previously used the name East Bay Community Energy Authority since its inception.

WHEREAS the California Energy Commission ("CEC") Load Management Standards ("LMS"), require CCAs to offer customers voluntary participation in hourly marginal cost-based rates ("hourly rates") by 2027, and

WHEREAS The LMS provide that a CCA may modify compliance with this requirement if implementing hourly rates is found not to be technologically feasible, equitable, safe, or cost-effective, and

WHEREAS Ava does not currently have sufficient information to conclude that proposing and implementing dynamic rates would be cost effective or provide benefits to Ava customers, because significant uncertainties exist related to the level of incremental load shift potential, customer response to market price risks, customer acceptance and adoption of a complex new rate design, the administrative costs of dynamic rate implementation, and potential cost shifts between participants and non-participants, and

WHEREAS Participating in the Vehicle to Grid Integration ("VGI") and Expanded Pilots with Pacific Gas & Electric ("PG&E") could inform Ava's decision of whether to eventually adopt hourly rates and how to otherwise comply with the Load Management Standards.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF AVA COMMUNITY ENERGY AUTHORITY DOES HEREBY RESOLVE AS FOLLOWS:

Section 1. Ava is authorized to participate in the VGI Pilots and Expanded Pilots in partnership with PG&E and offer customers the associated dynamic rates.

ADOPTED AND APPROVED this 18th day of September, 2024

Jack Balch, Chair

ATTEST:

Adrian Bankhead, Clerk of the Board