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April 1, 2024

Mr. Drew Bohan
Executive Director
California Energy Commission
715 P Street
Sacramento, CA 95814

Re: Submission of Silicon Valley Clean Energy's Board-Adopted Load Management Standards Compliance Plan

Dear Mr. Bohan,

Pursuant to the California Code of Regulations, Title 20 Section 1623.1(a)(3)(A), Silicon Valley Clean Energy submits its 2024 Load Management Standards (LMS) Compliance Plan (Plan).

Silicon Valley Clean Energy's LMS Plan was adopted by the Silicon Valley Clean Energy Board of Directors at a duly noticed public meeting held on March 13, 2024.

Enclosed is:

- SVCE's LMS Plan;
- Attachment A to the LMS Plan; and
- The Staff Report that accompanied the adoption of the LMS Plan at the March 13, 2024 Board of Directors meeting.

If you have any questions or additional information is required, please contact Citlalli Sandoval at citlalli.sandoval@svcleanenergy.org.

Sincerely,

/s/ Adam Selvin

Adam Selvin
Director of Energy Services and Community Relations

# Silicon Valley Clean Energy

# 2024 Load Management Standards Compliance Plan

## PUBLIC VERSION

March 13, 2024

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# I. Executive Summary

In compliance with California Code of Regulations Title 20 § 1623.1, Silicon Valley Clean Energy (SVCE) has developed its 2024 Load Management Standards (LMS) Compliance Plan (Plan). In this Plan, SVCE considers opportunities to provide customers with access to hourly rates, either through enrollment in marginal cost-based rates or through enrollment in programs that access hourly rates to shape program incentives. While today there is not enough information to know which customers would benefit the most from hourly rates or the potential scale of load shift and its impacts on supply, SVCE expects dynamic rates and/or programs accessing dynamic rates signals to incentivize customers to use energy during off-peak hours. Ultimately, the widespread adoption of dynamic rates will vary and depends heavily on regulatory policies, technical infrastructure, and customer acceptance.

SVCE describes current and future programs and rates that accomplish the objectives of the LMS, provides the results of an analysis on the impacts of moving to dynamic rates on SVCE's energy costs, describes the resources needed to implement dynamic rates, describes the status of SVCE's progress towards meeting LMS requirements, and examines dynamic rates from an equity, technology, reliability, and customer-benefit perspective. The development of this Plan helps to inform and guide SVCE's demand flexibility efforts.

SVCE offers a full range of time-of-use (TOU) generation rates corresponding with Pacific Gas and Electric Company's (PG&E) TOU delivery rates. This includes a residential electrification rate with a greater price difference between off-peak and on-peak hours than the otherwise applicable TOU rate, resulting in more pronounced incentivization of electricity usage when grid conditions are most favorable. In terms of programs, SVCE offers its customers several programs that advance one or more of the LMS goals. These programs are described in this Plan.

In the Plan, SVCE evaluates the potential impacts of dynamic rates both quantitatively and qualitatively. However, the quantitative evaluation focuses on modeled impacts to only SVCE's energy costs due to the fact that there are many unknowns surrounding the implementation of dynamic rates in California and how customers might respond. The high-level model used to quantify the potential impacts of dynamic rates on SVCE's energy costs examined three different scenarios of hypothetical changes in demand due to real time pricing. The results indicate that dynamic rates will have a minor impact on

SVCE's load in the next couple of years. Additionally, the modeled evaluation did not produce a hypothetical outcome that resulted in operational net cost savings. Further analysis is needed that quantifies the benefits of load shifts to non-peak periods, the benefits by customer class and by appliance/electric vehicle applications, and the benefits of changes to the capacity needs of the grid. Intangible benefits, such as the opportunity to engage customers, and potential limitations, such as rate access and automation, are difficult to quantify but should be considered as well.

Furthermore, several California Public Utilities Commission (CPUC) dynamic rate pilots have been developed, in which SVCE may participate. The pilots have not yet launched and are not expected to launch until Summer of 2024.[1] For these reasons, SVCE plans to adapt its evaluation of dynamic rates based on the results of the pilots and will modify its demand flexibility strategy as more information is gathered.

In terms of continued compliance with the LMS regulations, SVCE has uploaded all its time-dependent generation rates into the CEC's Market Informed Demand Automation Server and is actively participating in the workshops to develop the statewide Rate Identification Number (RIN) tool.

The abovementioned activities have required and continue to require considerable resources. SVCE provides estimates of the additional resources needed to support the implementation of real time pricing pilots in this Plan and will continue to evaluate the systems and staffing that will be necessary as real-world implementation experience is gained through pilot participation.

# II. Introduction

SVCE commenced customer service in April 2017 and is chartered to source clean, competitively priced electricity on behalf of residents and businesses in the participating jurisdictions of Campbell, Cupertino, Gilroy, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Saratoga, Sunnyvale and unincorporated parts of Santa Clara County. Within these communities, SVCE serves approximately 270,000 residential and commercial electric accounts, which consume approximately 3,800 gigawatt hours per year. SVCE is governed by a board of 13 locally elected officials, who set SVCE's rates and policies and oversee its operations.

SVCE's mission is to reduce dependence on fossil fuels by providing carbon free, affordable, and reliable electricity and innovative programs for the SVCE community. Consistent with this purpose, since inception, SVCE has offered its customers a variety of programs to help expedite electrification while providing clean electricity to its customers. From the outset, SVCE has acknowledged that while electrification is vital to decarbonization of the wider economy it must be done in a manner that also balances customer affordability. SVCE has developed and participated in numerous programs as well as the Business EV and E-ELEC rates which help ensure that electric load growth can be managed in a way that benefits the electrical grid's operations as well as customer affordability.

[1] Decision 24-01-032.

SVCE's efforts to date, and planned efforts going forward as outlined in this Plan, are aligned with the primary goals of the LMS regulations. The California Code of Regulations describes four primary goals associated with the LMS compliance plans[2]:

Goal 1: Encouraging the use of energy at off-peak hours;
Goal 2: Encouraging the control of daily and seasonal loads to improve system efficiency and reliability;
Goal 3: Lessening/delaying the need for capacity additions; and
Goal 4: Reducing fossil fuel consumption and greenhouse gas (GHG) emissions.

While each of these goals is unique, they are also all interrelated. Load management provides several value streams to the grid. First, when sufficiently dependable, it allows grid planners to build to a lower peak. Given that the grid infrastructure is built to meet peak demand, it generally follows that achieving Goal 1 dependably will support the achievement of Goal 4. In real time operations, dispatchable load management provides the grid operator tools to ensure they can maintain reliability. Additionally, because marginal energy prices have a strong positive correlation to grid emissions, price signals are an effective means to achieve lower emissions and more efficient use of the existing system.

SVCE's load management activities to date include both rate and program options. In the future, SVCE's innovative rates and programs are expected to consistently reduce peak demand and shift load to non-peak hours, providing value to the grid and aligning with LMS goals. New rates and programs are also under consideration to accelerate these impacts. These activities are funded through a cumulative $116 million commitment from SVCE's Board of Directors (Board) to create new and extend existing customer offerings, rebates, and rate-specific incentives to expand the use of clean electricity in homes, transportation, and commercial buildings.

SVCE's existing rates and programs, and those under consideration, are discussed in the section below.

## III. Rates and Programs to Support Load Management Goals

SVCE is deeply committed to meeting the LMS goals and expects to continue to use a combination of rates and program incentives to encourage customers to adjust their energy usage behaviors. While the expectation is that the dynamic rate pilots (real time pricing pilots) under development will be effective at encouraging customers to shift their energy usage and could result in long-term behavioral change with significant grid management benefits, initial enrollment is expected to be low due to the complexity and newness of the rates, lack of automation services, and existing levels of customers' comfort with and understanding of TOU rates. Therefore, SVCE is considering program incentives as well as rates to drive behavior change, and engagement and support to build customer awareness and interest in dynamic rate pilot enrollment. Additionally, SVCE is considering opportunities to amplify the impact of time-varying rates through off-peak use incentives that provide customer savings and help to improve grid reliability by lessening grid stress during peak times. SVCE will be evaluating the load impact of implemented rates and incentives, which will influence the development of future SVCE rates and programs.

[2] California Code of Regulations Title 20 § 1623.1(a)(1).

## A. Existing Rates

SVCE provides generation service to its customers, while the host investor-owned utility (IOU), PG&E, provides distribution and transmission services. SVCE offers a full range of time-of-use (TOU) generation rates corresponding with PG&E's TOU delivery rates in order to incentivize daily shifting of load into hours when the grid is being supplied with cleaner energy and can be more efficiently utilized. This helps to lower peak demand and decrease grid infrastructure costs and emissions. Today, approximately 70% of SVCE customer accounts and 90% of SVCE load are enrolled in TOU rates. When considering SVCE's total average load across all TOU rate classes, approximately 80% is used during off-peak hours.

*Figure 1 Average TOU Usage Across All SVCE Rate Classes*

SVCE's novel Electric Home rate (E-ELEC) is a customer generation TOU rate specifically designed to support beneficial home electrification that was approved by the Board in December 2022 and launched in January 2023. The SVCE E-ELEC rate provides a discount to SVCE customers that are enrolled in PG&E's E-ELEC rate; however, rather than applying a fixed generation discount percentage (e.g., 4%) across all energy usage as with other SVCE rates, it increases the cost of energy consumed during peak periods by 10% relative to PG&E's generation charges, while providing a 30% discount to all energy consumed during off-peak periods. By designing SVCE's Electric Home rate discount around existing TOU periods, SVCE aimed to more strikingly promote behavioral and programmatic changes to participants' energy consumption. Participating customer generation discounts have ranged from 2% to 22% based on their energy usage and willingness or ability to shape their daily consumption in response to SVCE's more pronounced rate, with a median discount of 10% relative to PG&E's rates. SVCE currently has over 1,200 customers enrolled in the SVCE E-ELEC rate and has funding to support an increased E-ELEC discount for up to 5,000 customers enrolling in the rate through 2027.

With large commercial and industrial customers, SVCE has begun to offer variable pricing structures that utilize CAISO day-ahead hourly energy costs. In 2022, SVCE announced an innovative 24/7 Carbon-Free Energy Agreement with Google. Under a 10-year contract, SVCE will serve Google's Mountain View and Sunnyvale offices by matching carbon-free electricity (CFE) to Google's local demand at least 92% of all

hours of the year. Service costs are based on dynamic CAISO market prices. This 24/7 CFE service supports active demand management, providing for the integration of day-ahead price signals with Google's flexible all-electric building and transportation systems, including thermal and battery storage, Electric Vehicle (EV) charging networks, and smart Heating, Ventilation, and Air Conditioning (HVAC). Google is incented to flex demand based on the dynamic price signal to improve their cost savings and CFE performance. SVCE is evaluating opportunities to replicate and scale this offering to other commercial accounts.

## B. Existing Programs

SVCE has launched several programs and initiatives to help shape customer demand. SVCE has historically and will continue to reinforce the importance of using electricity when it is cleanest and least expensive (non-peak hours) in its program design and marketing. Emissions from transportation comprise the largest source of GHG emissions in SVCE's territory and SVCE expects the shift to electric vehicles to be a significant driver of future load growth. Managing the timing of this load to ensure that the grid can accommodate it with minimal grid impact is of particular importance to SVCE because it will affect the cost of build out and operation of the grid.

SVCE contracted with ev.energy in May 2020 to launch GridShift, a mobile app-based program to manage EV charging, in order to shape customer charging demand and help customers reduce their ongoing EV charging costs. GridShift helps residential customers optimize EV charging by shifting charging to off-peak hours. As this program scales, it will help manage reliability risk associated with transportation electrification by reducing EV charging's impact on peak load. Ev.energy was recently awarded the California Energy Commission's (CEC) Responsive, Easy Charging Products with Dynamic Signals (REDWDS) grant, which will support grid signal integration for dynamic rate pilots and strengthen the existing customer charging management and customer interface. SVCE plans to partner with ev.energy to amplify the REDWDS grant impact to grow GridShift enrollment and, once dynamic rate pilots are available, encourage our customers to enroll in the pilot rates. Furthermore, once vehicle-to-grid functionality becomes more prevalent, SVCE's ability to use the program to benefit the grid reliability will increase. Today, the GridShift app is being used by more than 1,225 EV owners in SVCE's service area. It shifts charging daily to avoid the worst times of day to charge, when grid conditions result in the greatest emissions and largest costs. SVCE has also layered demand response programmatic features to the Grid Shift program to further minimize charging during Flex Alerts. SVCE continues to evaluate the load modifying impact that GridShift has on everyday charging, avoiding summer peak events, and increasing usage during times of plentiful renewable generation on the grid.[3]

Beyond EV charging, SVCE contracted with Sunrun for a Virtual Power Plan (VPP) to further support load shift to nonpeak hours. SVCE defines VPPs as aggregations of distributed energy resources (DERs) that can permit shifting of energy demand or injections of supply to the grid (i.e., can be used to increase or decrease load, as desired). Enrolling smart DERs into VPPs to provide value to the grid and return that value to customers is a critical part of SVCE's vision for spurring a widespread increase in demand

[3] SVCE has released a third-party evaluation report analyzing impacts of the app at https://www.svcleanenergy.org/research-analysis/#1639688703076-c88f0dce-ef3b.

flexibility and DER adoption. The Sunrun contract is part of the Lights on Silicon Valley program, which has installed [redacted] of distributed solar and battery storage systems at single family and multifamily residences in SVCE's territory. These systems are required to provide resiliency benefits to customers by being able to island from the grid in the event of a power outage, and the batteries will form a VPP to provide grid services to SVCE when not in use for back-up power. Sunrun dispatches these batteries for SVCE daily during the peak period to automatically offset consumption during peak hours. The Lights on Silicon Valley program aims to increase the deployment of behind-the-meter storage and will also help mitigate reliability impacts by reducing SVCE's demand during system peak periods.

Additionally, to support demand response impacts in SVCE's territory, SVCE launched an Emergency Load Reduction Program (ELRP) awareness initiative, which provided enrollment outreach to large commercial and industrial customers in its service territory – including customers with significant back-up generation capacity. SVCE led an effort coordinated with PG&E, Olivine, and other CCAs to convince more of these customers to enroll in ELRP. SVCE also chose to allow its eligible residential customers to be automatically enrolled in the A.6 residential ELRP program, leading to approximately 60,000 SVCE accounts being included in the program.

SVCE's location in the Silicon Valley gives it a unique opportunity to engage with top innovators, startups, and local agencies. SVCE has successfully worked with eight member agencies to commit to solar and/or storage installations by providing $2.9 million through a community resiliency program, further supporting the reduction of load during peak hours and providing dispatchable storage.[4] SVCE also created an Innovation Onramp program to attract novel pilots that demonstrate scalable solutions to overcoming decarbonization's major hurdles in cost effective ways. SVCE has funded 12 pilots over the last few years.[5] While not all end up achieving their goals, these pilots can unlock paradigm-shifting approaches to intractable problems. This innovation lens also extends to technologies that can reduce need for grid infrastructure upgrades and help manage SVCE's load (e.g., home outlet splitters to allow EV charging to share an outlet with a dryer – preventing the appliances from being active at the same time and spiking demand). Some of SVCE's pilots have progressed into longer-term SVCE programs like the Data Hive for access to customer energy data to enable improved DER adoption or the GridShift EV Charging app. Some go on to attract significant outside funding (e.g., CEC grants for to install EV charging technology to serve multifamily residents in disadvantaged and low-income communities). SVCE will continue to fund innovation pilots to try to unearth advances in thinking that will accelerate the transition to deep decarbonization and help SVCE best manage its load to support grid resilience.

Finally, SVCE has other programs that expedite customer installations of smart appliances. The incorporation of more electric appliances with demand response capabilities can greatly aid in creating a more flexible, efficient, and sustainable energy grid and will be fundamental to the success of responsiveness to dynamic rates in California. Appliances can be programmed to respond to real-time price signals, reducing power consumption during peak hours and shifting energy use to off-peak hours, better aligning with the availability of renewable energy sources on the grid. SVCE's smart appliance programs are discussed in more detail in Section VII.B.

[4] More information on this work can be found at https://svcleanenergy.org/community-resilience/.
[5] More information on the 12 pilots can be found at https://svcleanenergy.org/innovation-pilots/.

## C. Rates Under Consideration

SVCE sees further opportunity to shift customer electricity usage to nonpeak hours and reduce peak usage through participation in the CPUC's dynamic rate pilots, which will utilize marginal cost-based rates. SVCE plans to seek approval from its Board to participate in the Day Ahead Hourly Real Time Pricing (DAHRTP) pilot being operated by PG&E as well as the Demand Flexibility AgFit Expansion pilots. The start of the DAHRTP pilot has been delayed and the Demand Flexibility AgFit Expansion pilots are not expected to start until June of 2024 (notwithstanding any future delays) but the eventual result of the CPUC's pilot evaluation will inform SVCE's marginal cost-based rate development process. The focus for the next several years (2024-2026) will be to learn from these CPUC pilots and understand the potential load shift implications, customer benefits by rate class, and system and operational impacts of marginal cost-based rates. Further, SVCE will be evaluating opportunities to incorporate hourly rates into its demand flexibility and VPP programs, including GridShift and other future program offerings. Marketing, education, and outreach plans will be developed to build awareness and understanding as well as encourage customer enrollment where benefits exist. SVCE anticipates leveraging its engaged customer base to build awareness of dynamic rate pilots through direct and electronic communications.

SVCE will be identifying data streams available for measurement and establishing internal pilot rate goals once the pilot rate structures, program design and launch dates are finalized and SVCE's participation in the pilots has been authorized by its Board. In the meantime, SVCE is working with Evaluation, Measurement, and Verification (EMV) consultants to identify metrics to capture the value of the pilot rates for our customers and the entity as well as to gain insight into potential improvements. Key metrics under consideration include: load responsiveness, customer class bill impact relative to Other Applicable Tariff (OAT), GHG emissions impact, equity considerations, customer satisfaction/adoption rates/attrition, and SVCE cost recovery.

SVCE's unique ability to educate, build awareness and interact with its 270,000+ customers with ongoing outreach and engagement through both direct and electronic channels is expected to be very valuable as customers are introduced to dynamic rate pilots. Dynamic rate pilots and programs will be discussed at quarterly community partners meetings, which will be used to gain feedback on SVCE's energy services, pilot results, and upcoming plans.

## D. Programs Under Consideration

As SVCE considers demand flexibility and VPP opportunities to further support load shift, demand response is one use case under consideration. SVCE is currently working with a demand-response aggregator (Autogrid) to engage member agencies in the development of a demand flexibility pilot program. This effort stems from part of a larger Distributed Energy Resources Management System (DERMS) effort with multiple goals including (1) establishing DERMS at SVCE; (2) enrolling member agency facilities in DERMS; (3) supporting SVCE to use DERMs to dispatch connected DERs; and (4) successful DERMS implementation. The objective of the pilot is to increase supply and reduce load through DERs during times of peak stress.

Additionally, SVCE plans to build upon the Commercial and Decarbonization Pilot Program, launched in the Fall of 2023, by expanding the program in mid-2024. The program seeks to align the energy and sustainability goals of SVCE's key accounts with SVCE's own decarbonization and load management goals.

In the near term, the program will focus on gas savings and electrification, but SVCE expects a long-term emphasis on energy management, and finding savings and load shifting opportunities in high cost, GHG-intensive hours.

SVCE is considering performance payments for both customers and vendors that encourage load management as well as GHG emissions. This would be accomplished by leveraging hourly incentive rates, or GHG-weighted incentive rates. Performance-based payments that are time-variable will encourage the program's contractors and customers to seek load-shaped savings opportunities.

Finally, to help reduce the upfront customer costs associated with retrofit building electrification and allow more customers to be able to participate in the benefits of decarbonization and shifting load, SVCE has been exploring financing options to augment its other programs. With support from the state's TECH Clean California initiative, SVCE submitted a proposal to the CPUC's Clean Energy Financing proceeding (Rulemaking 20-08-022) for a tariffed on-bill financing (TOB) pilot. To maximize bill savings, TOB programs will require that the equipment be controlled to follow TOU and future dynamic rates. This approach will inherently optimize these new loads to the benefit of the customer and, provided the dynamic rates are appropriately set based on system costs, SVCE's load shape. The draft scope includes heat pump water and space heating, along with efficiency improvements, and may ultimately include electrification of all devices in the home. Uniquely, TOB financing leverages the bill savings achieved through electrification and load shifting to offset the upfront costs of electrification upgrades. While deployment of TOB pilots in California is still pending regulatory approval, TOB is increasingly recognized as a powerful financing mechanism accessible to low and moderate-income households and renters, enabling accelerated scaling of electrification and load shifting.

## E. Efforts to Reduce GHG Emissions and Fossil Fuel Consumption

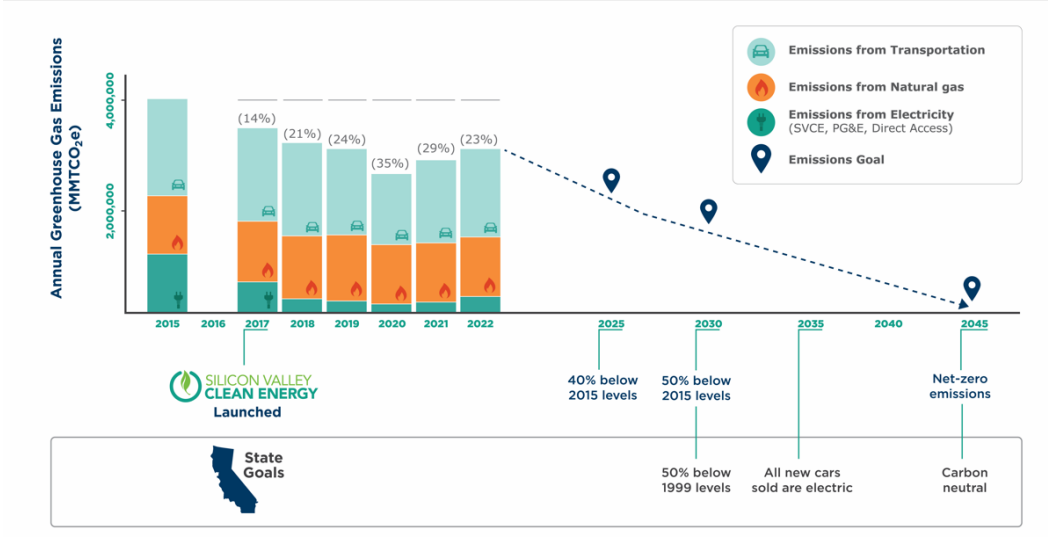
SVCE annually evaluates the overall progress made to reduce economy-wide GHG emissions within its service territory: 40% from the 2015 baseline by 2025, 50% by 2030, and the statewide target of net-zero emissions by 2045. SVCE strives to help its communities meet these goals through electrifying the buildings and transportation sectors while building new utility-scale renewable generation and battery storage resources to reduce electricity sector emissions. Implementation of innovative rates and programs support electrification while shaping load to help reduce demand at peak hours, thereby reducing dependency on fossil fuel usage.

California has set ambitious clean energy and emission goals – including a goal for all electricity to be generated by carbon-free and renewable sources by 2045. SVCE is ahead of the California targets, with about half of SVCE's energy supply coming from renewable resources and the remainder historically coming from other carbon-free resources such as hydro power.

In 2022, energy and transportation-related emissions for the SVCE service territory were 3.08 million MT $CO_2e$ (excluding fugitive emissions from natural gas usage), 23.4% lower than the 2015 baseline year emissions. In 2023, due to higher vehicle miles traveled compared to prior years, emissions from the transportation sector returned to pre-COVID-19 levels. Despite projected short-term increases in vehicle miles traveled due to continued recovery from COVID-19, SVCE projects that future GHG emissions will decrease. This is attributable both to regional and local electrification efforts and the continued build

out of its clean portfolio, which includes long-term PPAs for renewable and battery storage resources amounting to over 1300 MW of capacity, of which all but 119 MW are new incremental capacity for the CAISO system.

*Figure 2 SVCE Annual Greenhouse Gas Emissions*




# IV. Progress Towards Meeting LMS Requirements

## A. Market Informed Demand Automation Server (MIDAS)

SVCE's Plan Attachment A shows the status of SVCE's compliance with the LMS MIDAS requirements. Attachment A lists all 163 current time-dependent rates and their associated RINs and demonstrates the availability of SVCE's rates in MIDAS.

SVCE is responsible for the generation component of a customer's bill. PG&E is responsible for the distribution and transmission rates charged to SVCE's customers. SVCE has uploaded and will continue to upload its TOU generation rates and will not calculate the composite rate outside of MIDAS because it does not have access to the other rate components for which it is not responsible. At the moment, each service provider uploads its rates separately into MIDAS.

SVCE has been using its back-office data services provider, Calpine, to manually upload SVCE's TOU rates to MIDAS. To date, this has been an extremely time-consuming process that has been complicated by a range of technical issues. These technical issues have been documented and shared with CEC staff.[6] For future uploads, because SVCE is using a third-party to connect to MIDAS, infrastructure upgrades will not occur at SVCE. Instead, Calpine will build out the infrastructure to automate the TOU upload

[6] Technical issues have been shared with CEC staff through e-mail communications.

process. SVCE plans to have Calpine continue to upload TOU rates following the launch of the CPUC's dynamic rate pilots.

To support the CPUC's dynamic rate pilots, SVCE will be offering customers the opportunity to enroll in the dynamic rate pilots that PG&E will be administering and that the SVCE Board has approved. The internal infrastructure needed to support the pilots is not yet completely known. However, SVCE has participated in a series of working sessions with PG&E to understand how the pilots will be administered and the IT systems that will be needed to support SVCE unbundled customer participation. At the time of the writing of this report, SVCE has been instructed by PG&E to email adjustments to the generation rate components of the pilot's composite dynamic rate (e.g., marginal generation capacity cost adjustment or revenue neutral adder adjustments) to PG&E. From there, PG&E will upload into PG&E's Pricing Engine, which will ultimately upload SVCE adjusted rates into MIDAS and Calpine.

SVCE has been working with Calpine to test this process. Calpine continues to work closely with PG&E to test Calpine's receipt of the file as well as the transfer to PG&E's billing system. IOU billing systems are extremely complex in nature and to date, Calpine has not received all files to verify that there will be no issues with data integration at the time of the planned pilot launches. Calpine will continue to work with PG&E on behalf of SVCE to resolve various outstanding questions about the technical processes that will need to occur to enable the submission of pilot rates into MIDAS.

Once the data integration has been completed, the transfer of data for all pilot rates between Calpine and SVCE will occur. Calpine cannot provide cost estimates to support this process until PG&E provides necessary documentation.

All costs associated with the Pricing Engine provided by GridX are covered by PG&E throughout the life of the pilots. SVCE plans to evaluate load, customer benefits, adoption rates, systems, and processes during the duration of the CPUC pilots to determine the infrastructure it will need post-pilots. At this time, SVCE has not determined if it will continue to use GridX following the pilots' completion or if they will consider other options to ensure SVCE's dynamic generation rates are accurately reflected and uploaded into MIDAS.

### B. Rate Identification Number (RIN)

In order to provide RIN(s) on customer billing and online accounts using both text and QR code, SVCE will provide PG&E with customer generation, export compensation, and bill protection costs for bill presentment. However, PG&E's billing system must be updated to reflect the RIN(s) and QR code. PG&E will be leading this development because it is the entity responsible for metering customer usage, and providing bill presentment to SVCE's customers. SVCE looks forward to working with PG&E and Calpine to agree on:

- bill presentment;
- implementation plan and timeline;
- billing system update plan and current progress; and
- proposed text design and QR code design and proposed placement.

At this time, SVCE has not begun to plan for a QR code-linked webpage on its website. MIDAS and related systems' structures and processes, including the RIN tool, must be finalized first before investing resources to design and implement modifications to the website. However, SVCE does plan on running a robust customer education and awareness campaign that details customer value and access to hourly rates.

In order to support the development of a Single Statewide RIN Access Tool, SVCE staff and third-party service providers (i.e., Calpine) participate in the Statewide RIN Access Tool working group meetings. SVCE has committed three employees to support the RIN Access Tool working group – a Data Analytics Manager, an Energy Services Specialist, and a Real Time Pricing (RTP) Specialist. SVCE's focus will be on customer ease of use and an accurate representation of customer rates. Beyond participating in the working group, it is still unclear what ongoing resource commitment will be necessary from SVCE to support the launch of the tool. As working group discussions develop, SVCE will determine the resources needed to launch what the working group ultimately decides is the best format for a Statewide RIN Access Tool. In order to support compliant implementation of the tool, the funding mechanism for the tool and a load serving entities review and identification of its internal infrastructure's role in connection with the mechanics of the tool will need to be defined. SVCE plans to continue to participate in the working group and will make additional resource commitments once it is determined what is needed to support the implementation of the RIN tool.

# V. Background on Development of Marginal Cost-Based Rates, Programs and Rate Structures

In order to understand the process through which SVCE has considered developing marginal cost-based rates or public programs it is important to clarify SVCE's role as a generation-only service provider. SVCE service replaces the PG&E generation service on a customer's bill. All of SVCE's time-dependent rates are collected through generation rates. SVCE does not have any distribution or transmission rates, time-dependent or otherwise and SVCE's Board has the sole authority to approve SVCE generation rates.[7]

SVCE does not plan on developing marginal cost-based rates in the near-term but instead, if its Board approves, may largely adopt the IOU developed marginal cost-based rate, to be launched by July 1, 2025. Following Board approval, SVCE could plan to provide customers with access to the PG&E developed marginal cost-based rates by July 1, 2027. However, through the duration of the CPUC pilots, SVCE plans to explore opportunities to customize its hourly generation rates and provide customer access to marginal cost-based rates through unique program design. SVCE also plans to build customer awareness and incent marginal cost-based rate enrollment.

Uploading time dependent rates into MIDAS has informed SVCE of the significant technical challenges that must be addressed in order to offer rate structures and programs that use a real-time pricing signal to incent behavioral change. Until SVCE has had the opportunity to learn from the hourly pilots launched in 2024, SVCE cannot comment on potential generation rate structures or existing systems and

[7] SVCE's current rates can be found at: https://svcleanenergy.org/electricity-rates/.

processes. However, it is critical that SVCE has the structures to be able to offer its customers generation rates that are different from PG&E generation rates.

## VI. Description of Demand Flexibility Analysis Methodology

SVCE explored the potential impacts of real time pricing on SVCE's energy portfolio costs in order to begin to understand, with the information available at the time this plan was developed, how real time pricing might affect SVCE's energy costs. SVCE analyzed how potential changes in load would affect the energy cost of serving that load based on forecast market prices. SVCE does not know the exact rates its customers would be paying or know the manner in which its customers would respond to real time pricing. This is due to the fact that to date, none of the real time pricing pilots SVCE plans to participate in have begun enrollment due to pilot start date delays and consolidations with the creation of an entirely new pilot, which is yet to have its implementation details finalized.[8]

Because of the lack of information available on which to base assumptions for an analysis of the potential impacts of real time pricing, SVCE developed scenarios for load change based on existing studies of the potential for load shedding. Existing sources were used to develop values that were then used as a proxy for changes in customer energy usage by customer class. The analysis did not attempt to examine possible load shifting outcomes and instead solely examined the potential for load shedding. The decision was made to only analyze potential load shed, effectively functioning as a demand response resource, because actual load shed represents the most material impact to SVCE's energy purchase costs. Additionally, load shifting would add a level of complexity to the analysis not warranted given the uncertainty around the inputs to the analysis. Moving to real time pricing will very likely result in load shifting but the maximum potential for load shedding will reveal the maximum range of savings to SVCE's energy cost portfolio that could be realized.

Three scenarios (Table 1), in addition to a Base Case, were developed to understand how energy portfolio costs could change based on varying levels of customer participation and addressable load. The Base Case represents SVCE's load forecast based on the average of actual usage by customer class for the past three years (2020-2022). SVCE examined the potential impacts of real time pricing for 2024-2027, the years during which real time pricing pilots are expected to launch and operate.

[8] CPUC Decision 24-01-032, which approved the pilots, requires the IOUs to file Advice Letters containing the implementation plans at the end of March 2024. These will then go through the CPUC's Advice Letter disposition process.

*Table 1 Scenarios Analyzed*

| Scenario | Description |
|---|---|
| Low | • Based on assessment of SVCE customer class behavior and end uses<br>• Best estimate of realistic load shed potential<br>• Conservative customer participation |
| Medium | • Less conservative assessment of participation and load shed potential |
| High | • Based on very robust customer participation and generous load shed potential assumptions<br>• Extreme bookend of potential; unlikely to be realized |

First, in order to estimate customer participation and addressable load, SVCE staff leveraged internal knowledge of SVCE's unique customer class behavior, the results of the 2006 California Commercial End-Use Survey (CEUS), and the 2015 Lawrence Berkeley National Laboratory Demand Response Potential Study.

These sources informed the assumptions developed for market segment participation by customer class and incrementally addressable load by customer class. The percentages of assumed impact for each of the three scenarios are listed in Table 2 and Table 3.

*Table 2 Market Segment Participation Assumptions*

| | Scenario | | |
|---|---|---|---|
| **Customer Class** | **Low** | **Medium** | **High** |
| Agricultural | 5.0% | 10.0% | 30.0% |
| Large Commercial | 1.0% | 2.5% | 5.0% |
| Lighting and Traffic Control | 0.0% | 0.0% | 0.0% |
| Residential | 0.0% | 0.4% | 2.1% |
| Small Medium Commercial | 0.5% | 1.0% | 3.0% |

*Table 3 Incrementally Addressable Load Assumptions*

| | Scenario | | |
|---|---|---|---|
| **Customer Class** | **Low** | **Medium** | **High** |
| Agricultural | 5.0% | 10.0% | 10.0% |
| Large Commercial | 1.0% | 8.0% | 17.0% |
| Lighting and Traffic Control | 0.0% | 0.0% | 0.0% |
| Residential | 0.5% | 4.0% | 8.0% |
| Small Medium Commercial | 5.0% | 10.0% | 15.0% |

Second, SVCE staff extrapolated the 8,760 hours of load in each year for 2024-2027 using SVCE's existing hourly load forecast. The Base Case was then adjusted to create load profiles for each scenario based on the relevant customer participation and addressable load assumptions.

Finally, SVCE uses Ascend Analytics' PowerSIMM™ platform for portfolio management and utilized the modeled hourly CAISO NP-15 prices provided by Ascend Analytics to calculate the energy costs for each scenario. The energy costs were then calculated by multiplying the changes in load across scenarios by the forward curves. As described in Section VII.D. below, due to on-going uncertainty in the Resource Adequacy (RA) market and regulatory structure, SVCE excluded any quantification of capacity value in the cost analysis.

# VII. Results

## A. Cost Effectiveness

SVCE examined the cost effectiveness of moving to real time pricing through the lens of the demand flexibility analysis described in Section VI. Although portfolio energy costs are a narrow lens through which to evaluate cost effectiveness, SVCE staff determined that with the current assumptions available and plethora of unknowns, a narrow evaluation of cost effectiveness could be completed for SVCE's first LMS Plan. When developing future Plans, SVCE will have the results from the various CPUC demand flexibility pilots and plans to use those actual results to inform a more robust evaluation of real time pricing.

For the purposes of this Plan, cost-effectiveness was evaluated as the ratio of dollars saved to dollars spent. SVCE plans to broaden the way it evaluates cost-effectiveness in future LMS Plans by using a cost-effectiveness evaluation metric that is more inclusive of the entire sphere of benefits that could result from dynamic rates (e.g., by using the Total System Benefit test.)

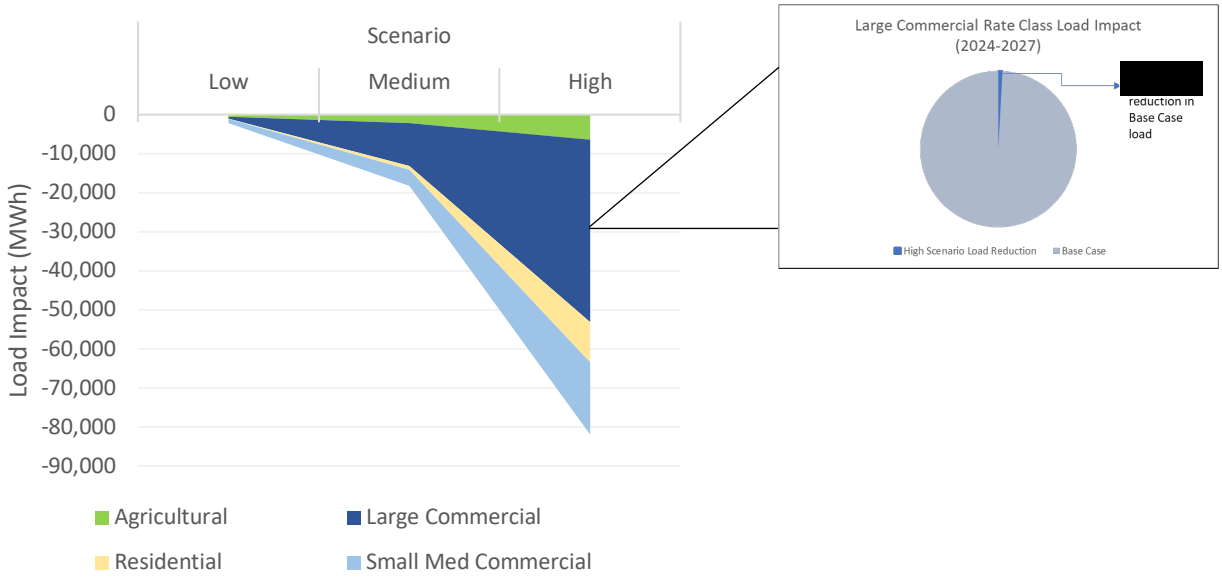
The cost impact of the Low, Medium, and High Scenarios were compared to the Base Case costs. As illustrated in Table 4, cost savings across scenarios and years are negligible when compared to the energy portfolio costs of the Base Case. This is due to the fact that even in the High Scenario, load does not shed in significant enough quantities to make a meaningful impact (see Figure 3).

*Table 4 Scenario Cost Savings as a Percentage of Base Case Costs*

| | Scenario | | |
|---|---|---|---|
| **Year** | **Low** | **Medium** | **High** |
| 2024 | 0.013% | 0.110% | 0.495% |
| 2025 | 0.013% | 0.109% | 0.495% |
| 2026 | 0.013% | 0.110% | 0.495% |
| 2027 | 0.013% | 0.110% | 0.497% |

As would be expected, across all four years, the Low Scenario has the least effect on load (2,121 MWh), the Medium Scenario results in increased load reductions (18,273 MWh), and the High Scenario results in the largest amount of total load reductions (81,904 MWh). When viewing the load impact results by customer class, the greatest load impact occurs in the large commercial class segment. The residential class has the smallest impact on load in both the Low and Medium scenarios. However, under the High Scenario, the agricultural customer class has the smallest impact on load. These results indicate that it may be more beneficial for SVCE to focus its demand flexibility efforts on its large commercial customers. However, even under the High Scenario, large commercial yields a reduction in Base Case load of only [redacted]

*Figure 3 Total Load Impact Across Scenarios by Customer Class (2024-2027) with Large Commercial High Scenario Load Impact Callout*




SVCE staff estimates that implementing real time pricing from 2024-2027 would cost [redacted] in total (see Table 8). This cost estimate is based on SVCE staff's evaluation of the staffing, systems, and marketing costs that would be incurred and is described in further detail in Section VIII. Cost savings for each scenario do not vary significantly year over year. These results indicate that under the most realistic

assumptions for market segment participation and addressable load (Low Scenario) SVCE would save [redacted] in energy costs. The High Scenario would result in slightly over [redacted] dollars of energy cost savings. These savings represent only 0.5% of total forecast Base Case energy costs across 2024 through 2027. However, many of the costs included in the cost estimate represent one-time upfront costs. If SVCE had examined offering dynamic rates over a time horizon beyond 2027 and accounted for benefits beyond modeled energy costs, then the cost-effectiveness indications would differ. As mentioned above, SVCE is evaluating the use of more inclusive cost effectiveness metrics such as the Total System Benefit test to widen the scope through which the benefits of dynamic rates can be examined.

*Table 5 Energy Cost Impact (Savings) 2024-2027*

| Year | Scenario | | |
|---|---|---|---|
| | Low | Medium | High |
| 2024 | [redacted] | | |
| 2025 | | | |
| 2026 | | | |
| 2027 | | | |
| All | | | |

## B. Equity Evaluation

SVCE defines underserved communities, broadly, as those that have historically been excluded from participating in the benefits of electrification and/or have low energy security. SVCE's underserved communities face multiple barriers that could prevent them from benefiting from the dynamic rate pilots. These households may lack the flexibility to shift their energy use to off-peak times due to rigid schedules and lack of access to smart appliances and technology, or may receive communications about how to shift their energy usage in a language they do not speak. Participation often requires smart meters yet some customers in mobile home parks and multiunit dwellings do not have smart meters. As a result, communities without access to these appliances and technologies cannot participate in dynamic pilots and may face higher overall energy costs. In addition, households that are already struggling with energy insecurity may find it challenging to adapt to the fluctuating prices in the RTP pilots. RTP rate structures must include price protection (e.g., shadow billing) to eliminate financial risk for these customers, which is especially crucial to encourage pilot rate adoption in underserved communities. SVCE knows that other barriers will arise in helping all of its customers benefit from future dynamic rates and plans to learn more about necessary solutions during the upcoming dynamic rate pilots.

SVCE is taking specific steps to address underserved communities and will look for opportunities to address barriers that keep customers from accessing and benefiting from dynamic rate pilots. Today, SVCE provides lower rates for income-qualified customers, has developed a Programs Equity Framework to help incorporate key considerations into its decarbonization program work, and uses the CPUC's Socioeconomic Vulnerability Index (SEVI) metric to guide program planning and design, rate evaluation, and ongoing community engagement and outreach efforts. These tools and how they will be used to support equitable demand flexibility efforts are described below.

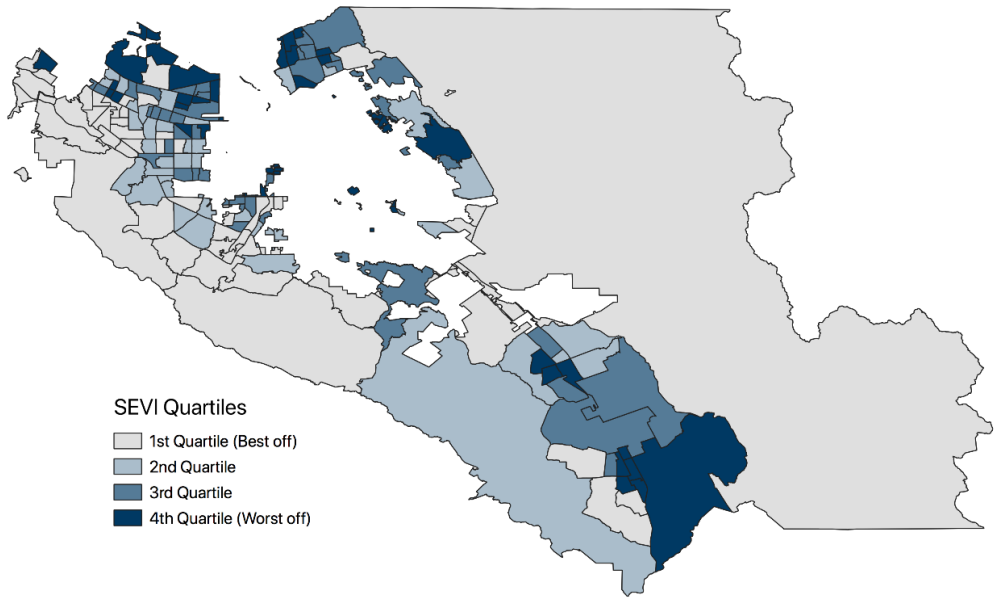
## 1. Program Equity Framework

SVCE's decarbonization programs and community outreach are customer-focused and designed to be inclusive of the needs of underserved communities. SVCE utilizes an internally developed Programs Equity Framework to guide a process for learning and considering needs of underserved communities, defining these groups, understanding their current state of DER adoption and barriers, designing programs that serve these groups, and tracking ongoing impacts of SVCE programs. Learnings from the Programs Equity Framework, combined with program evaluation, monitoring, and verification data will be used to guide future program design, including for dynamic rate pilots.

## 2. Socioeconomic Vulnerability Index (SEVI)

SVCE has identified the SEVI, originally developed as part of the CPUC's Affordability Report, as the primary equity indicator to be used to identify underserved communities and develop programs and rate evaluations. SEVI captures education attainment, housing burden, linguistic isolation, poverty, and unemployment at the census tract level to paint a picture of energy security and decarbonization participation. SVCE has calculated the SEVI metric for all census tracts in our service territory and grouped the tracts into four quartiles, as shown in Figure 4, below. DACs within SVCE's service territory, as defined by CalEPA, are exclusively in the SEVI 4 quartile.

*Figure 4 SEVI Quartiles in SVCE's Territory*



SVCE has performed an analysis to understand the different demographics in these SEVI quartiles using utility and tax assessor data. Table 6 shows a high-level overview of some example statistics by SEVI quartile that SVCE uses to inform program design.

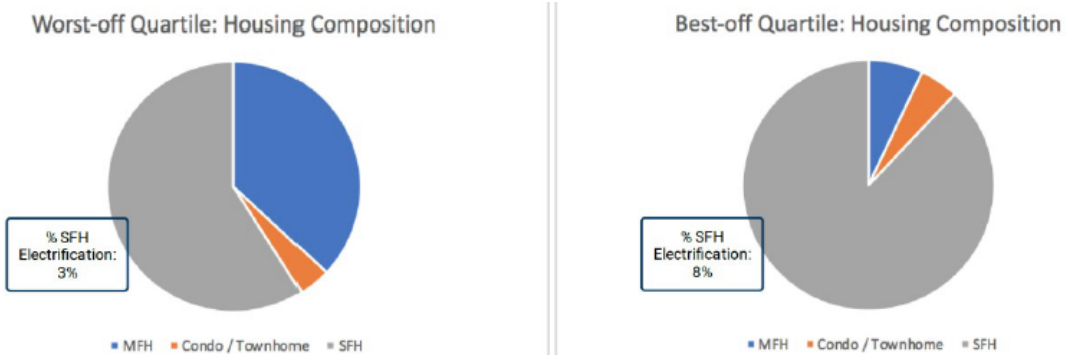
*Table 6 SEVI Quartiles and Key Demographic Information*

| | SEVI 1 | SEVI 2 | SEVI 3 | SEVI 4 |
|---|---|---|---|---|
| Residential Accounts | 53k (23%) | 62k (27%) | 64k (28%) | 44k (19%) |
| Population | 177k (19%) | 251k (27%) | 245k (26%) | 242k (26%) |
| CARE/FERA Accounts | 2.8k (10%) | 4.6k (17%) | 8.2k (30%) | 10.5k (39%) |
| Median Income | $166,000 | $145,000 | $117,000 | $79,000 |

The goal of using SEVI as a primary indicator is to provide a first pass at identifying varying community and customer demographics, associated decarbonization needs, and to support and track how those needs are being met. SEVI quartiles help SVCE staff think about program design, outreach, and rate evaluation, and to analyze program participation data to better understand how different groups engage with SVCE's programs.

Figure 6 demonstrates one example of the value of using SEVI as the primary equity indicator. Housing composition varies among SVCE customers in SEVI 1 (best-off) and SEVI 4 (worst-off) quartiles. Considering that the population in SEVI 4 tends to have lower electrification rates overall is important but understanding the differences in housing composition is critical to decide how best to formulate offerings for this underserved community.

*Figure 5 Housing Type Comparison of SEVI 4 (Worst-off) and SEVI 1 (Best-off) Quartiles*



### 3. SVCE Equity Programs

Summarized in Table 7 are a sampling of programs that were designed, launched and/or evaluated using the Programs Equity Framework and SEVI metrics. These programs strive to provide underserved communities with electrification opportunities and tools to flex their demand, reduce their electricity bill, and address the LMS goals.

*Table 7 Programs Designed, Launched, and/or Evaluated Using the Programs Equity Framework and SEVI Metrics*

| Transportation Electrification Programs | Description | LMS Goal | Status |
|---|---|---|---|
| Charging Installation Incentives Program (CHIIP) | Incentives for L1 and L2 EV charger installations at existing multifamily properties. Deeper incentives provided for affordable housing properties. | Goal 4: Reducing fossil fuel consumption and GHG emissions | Ongoing |
| Priority Zone DC Fast Charging Program | Incentivizes EVSE vendors to install DC fast chargers within specific priority areas in proximity to older multifamily housing that would be harder to add chargers at. | Goal 4: Reducing fossil fuel consumption and GHG emissions | Ongoing |
| California Electric Vehicle Infrastructure Project (CALeVIP) | Incentives for DCFC and L2 EV charger installations at multifamily properties, public parking lots, or retail locations. Deeper incentives for installations in disadvantaged and low-income communities. | Goal 4: Reducing fossil fuel consumption and GHG emissions | Ongoing |
| CEC REACH Grant EV Infrastructure Direct Install | Match funding provided to Ecology Action to install EV charging technology to serve multifamily residents in disadvantaged and low-income communities. | Goal 4: Reducing fossil fuel consumption and GHG emissions | Ongoing |
| | | | |
| | | | |

| Building Electrification Programs | Description | LMS Goal | Status |
|---|---|---|---|
| FutureFit Homes | Up to $8K incentives for residents to install heat pump water heaters, heat pump space conditioning, panel upgrades and pre-wiring. Additional rebates of $5K for income-qualified and CARE/FERA customers. | Goal 4: Reducing fossil fuel consumption and GHG emissions | Ongoing |
| FutureFit Homes | Up to $20K in incentives for small and medium businesses to replace gas appliances with electric. Additional rebates of $5K for non-profit organizations. | Goal 4: Reducing fossil fuel consumption and GHG emissions | Ongoing |
| Clean and Healthy Affordable Multifamily Properties Program (CHAMP) | Electrify 300 to 1,000 units + install 125 EVSE ports at existing deed-restricted affordable multifamily properties at no cost to property owners or tenants. Buildings will be enrolled in SVCE's E-ELEC rate. | Goal 4: Reducing fossil fuel consumption and GHG emissions | Design underway |
| Accessible Financing Pilot | Direct installation of electrification upgrades to selected low-moderate income customers, with the goal of achieving customer bill savings and load shifting to offset upfront costs of electrification upgrades. | Goal 4: Reducing fossil fuel consumption and GHG emissions | Design underway |
| Single-Family Turnkey and Direct Installation Services | Direct installation of electrification upgrades for low-income customers at no-cost and market-rate customers with transparent costs using SVCE contractors. Also includes emergency water heater replacement services. | Goal 4: Reducing fossil fuel consumption and GHG emissions | Planning stage |

| Resilience/Other | Description | LMS Goal | Status |
|---|---|---|---|
| Medical Baseline Battery | Partnered with a local non-profit to give away (free) portable batteries to customers on medical baseline rates living in tier 2 or 3 PSPS area to sustain life-supporting equipment during power outages. | Goal 2: Encouraging the control of daily and seasonal loads to improve system efficiency and reliability | Ongoing |
| Community Resilience | Provided grants to member jurisdictions to improve resilience to climate change at their critical facilities. Included solar and/or battery storage installations, cool pavement, and other measures. Battery installations have potential to be enrolled in grid resilience through DR platforms. | Goal 3: Lessening/ delaying the need for capacity additions | Ongoing |
| Territory-specific heat wave assessment | Map and track heating trends across service territory to develop more accurate predictions for space-cooling technology adoption with special considerations for load growth and GHG emissions impacts. Conclusions will be used to consider incentives for HPHVAC systems for heat-vulnerable customers. | Goal 1: Encouraging the use of energy at off-peak hours | Complete |

## C. Technological Feasibility Evaluation

SVCE has evaluated technological feasibility through a near-term perspective: operation of the CPUC pilots to offer real time rates temporarily; and through a long-term perspective: permanent operation of a real time rate offering. In order to support the implementation of the CPUC's dynamic rate pilots, SVCE will be working through its back-office provider, Calpine, and PG&E to operationally support the dynamic rate pilots and plans to use existing systems that are already available.

All costs associated with the Pricing Engine will be recovered by PG&E through CPUC-jurisdictional ratepayer funding throughout the life of the pilots. During the period the pilots are operating, SVCE will evaluate the effectiveness of existing processes to determine whether ongoing use of PG&E's Price Machine, which will cost approximately [redacted] per year makes operational sense or whether switching to another provider would be more beneficial. However, the systems that will need to be in place to support long-term implementation of real-time rates will be costly and load entities should be able to recover shared categories of costs for the development of systems and processes through a statewide ratepayer mechanism.

Various issues have already arisen that indicate that the technological feasibility of offering permanent long-term dynamic rates depends on numerous changes to the near-term pilot implementation systems. First, CCAs require the ability to provide customers with unique rates that are different from PG&E's bundled generation rate – today this will be accomplished through a manual process of submitting emails with adjustments to PG&E; PG&E will then update the Pricing Engine. This cumbersome process is required because the Pricing Engine is a closed system that cannot be accessed by any entity other than PG&E. The lack of automation and long-term systems approach for SVCE to reflect discounted and unique hourly rates in billing systems and in MIDAS must be coordinated amongst the three entities involved with billing: PG&E, Calpine and SVCE. Second, the MIDAS upload is unnecessarily labor-intensive, time consuming and must be automated once the MIDAS systems are more stable. Due to the number of LSEs uploading to MIDAS at approximately the same time, Calpine has experienced the following technological challenges during MIDAS uploads:

1. MIDAS Server Fragility: when MIDAS access is high, the server cuts off rates haphazardly. If Calpine attempts any methods for uploading more than one rate at a time, MIDAS drops about a third of the rates.

2. MIDAS Server Latency: MIDAS receives rates very slowly - about 30 seconds per rate. Now that modifiers are included in the upload requirements, each CCA upload can take many hours or the better part of a day. Because Calpine is responsible for multiple rate uploads, completing the MIDAS upload requirement can take 3 days or more. This is an additional three days beyond the ten days needed for Calpine to incorporate new/revised rates into their systems.

3. MIDAS Server Congestion: MIDAS can freeze and stop responding when many LSE's are uploading at the same time. To-date, the only solution suggested has been for users to attempt manual uploads after 8PM or on weekends to avoid peak upload times.

Calpine is working closely with PG&E to test file transfers to PG&E's billing system but as of the drafting of this Plan, Calpine has not received all files to ensure smooth data integration.

Additionally, although SVCE's time-dependent generation rates are accurately uploaded to MIDAS, SVCE staff does not control transmission and distribution rate uploads and so cannot validate the compiled customer rates.

Finally, the LMS require SVCE to upload rates into MIDAS prior to their effective rate date. Given today's TOU billing system processes, and the MIDAS Server challenges described above, it is not possible to provide all customers rates into MIDAS prior to the effective rate date.

Through Calpine, SVCE provides PG&E with customer generation and export compensation and bill protection for pilot bill presentment. However, PG&E's billing system must be updated to reflect the applicable RIN(s) and QR code. PG&E will be leading this development and SVCE looks forward to working with PG&E and Calpine to agree on:

- bill presentment
- implementation plan and timeline
- billing system update plan and current progress
- proposed text design and QR code design and proposed placement on the bill

Finally, broader issues related to CCAs being able to successfully implement hourly rates and or programs that access hourly rates to encourage flexible load shifts post-CPUC pilots were documented in the CPUC's Demand Flexibility proceeding (Rulemaking 22-07-005). In order to support compliance with the LMS, certain processes regulated by the CPUC that intersect with the LMS must be resolved. It is critical that CCAs have the opportunity to learn from pilots and that there is flexibility to revise pilots as needed improvements arise. The CPUC should continue to facilitate data sharing and data collection between PG&E & SVCE. More specifically, the CPUC should require PG&E to provide billing quality usage data to CCAs at hourly or sub-hourly intervals and require all IOUs to provide non-billing quality hourly customer interval usage data for CCA load forecasting and offering dynamic pricing to unbundled customers.

For the long-term dynamic rate system, the CPUC should require the use of MIDAS as a price portal, with necessary upgrades as determined by the CPUC and CEC. The CPUC should require IOUs to provide CCAs access to customer usage data and if dual enrollment between demand response programs and demand flexible rates is prohibited, the CPUC should require IOUs to provide customer enrollment data in demand response programs. Additionally, the CPUC should ensure equivalent bill presentation between bundled and unbundled customers.

## D. Grid Benefits Evaluation

Any reductions to the capacity needs of a portfolio due to real time pricing are indicative of the potential grid benefits of real time pricing. The electrical grid is built to have enough capacity to meet the peak load on the system and if customer demand can be shifted to times when grid conditions are more favorable, or altogether shed, then the grid stands to become more reliable. As described in Section VI, SVCE examined the potential changes to load under three different scenarios representing a low, medium, and high level of real time pricing responsiveness. These load scenarios were also examined for their potential peak savings in order to understand the potential contributions of SVCE's portfolio to reducing peak demand on the grid.

When compared to the Base Case, the High Scenario resulted in the greatest peak reductions across all months, reducing SVCE's peak load on average by 3.2 MW. The Medium Scenario reduced the peak load

by an average of 0.88 MW, while the Low Scenario reduced the peak by an average of 0.11 MW. In terms of inter-month variability, the greatest peak savings occurred in September.

As a CPUC-jurisdictional load serving entity, SVCE is required to procure RA product to meet the CPUC's RA program obligations. The RA program ensures that load serving entities have sufficient capacity to meet their peak load along with a reserve margin. SVCE staff considered associating the peak savings across scenarios with the potential dollar value of RA product savings that SVCE could realize. However, given the current RA market volatility in California, SVCE staff determined that any savings amount calculated using today's pricing would likely not produce results that would be indicative of future outcomes. In addition to general RA market volatility, the RA program in California is currently transitioning to a Slice of Day framework and it is not yet clear how the market will respond and what RA pricing will be under the Slide of Day structure.

Furthermore, load serving entities need clarification from the CEC regarding whether reductions to load resulting from real time pricing would be processed by the CEC and applied to their calculation of a load serving entity's load, which is used to set CPUC RA obligations. Whether the load impacts of real time pricing will be considered load modification to the forecast or be considered supply-side RA, remains an open question. For the abovementioned reasons, SVCE staff focused only on calculating peak savings, which indicated that the scenario most indicative of realistic real time pricing uptake (Low Scenario) has a very minor impact on SVCE's Base Case peak load.

### E. Customer Class Benefits Evaluation

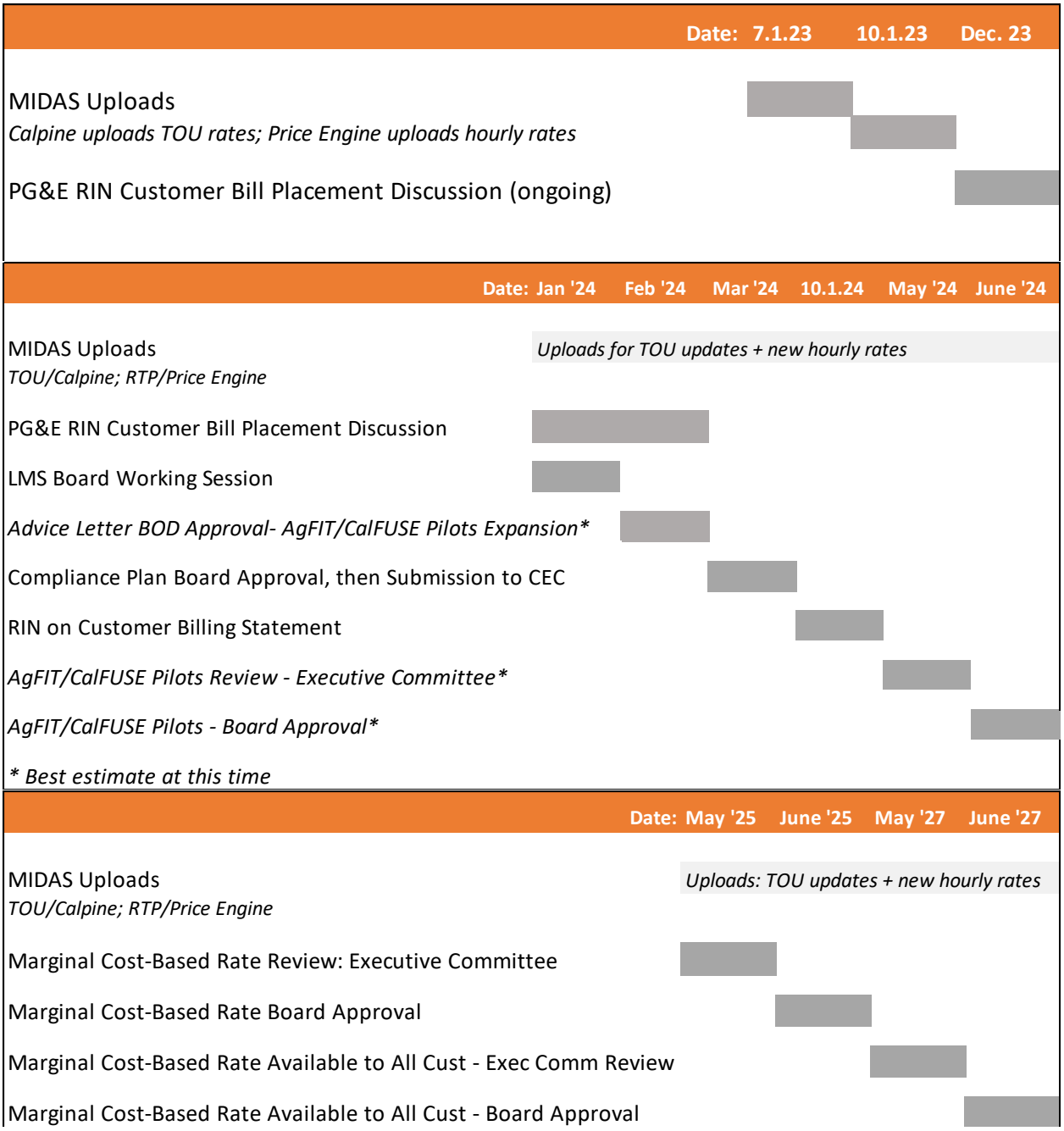
Today, SVCE has no hourly generation rates available for general customer enrollment. Therefore, it is not possible to quantitatively evaluate customer benefits by customer class. However, there are several unknowns that will directly impact customer adoption rates. First, the final PG&E pilot rate structures and associated pilot implementation details for the CPUC's real time pricing pilots are not yet known. Second, customers have limited customer access to behind-the-meter automation technology. Third, the level of customer acceptance of risk to market rates and new, complex rate structures is not known. Finally, the ease of access to rates prior to, and following the operability of the statewide RIN tool for access to MIDAS is currently still under development.

Following the launch of the CPUC pilot rates, SVCE will evaluate its resulting customer data to better understand potential flexible load shifts and associated savings. Marketing, education and outreach plans to build awareness and understanding based on these results will be used to encourage customer enrollment if clear customer benefits result.

## VIII. Marginal Cost Rates Implementation

SVCE is closely tracking the timelines for the implementation of marginal cost-based rates and has developed Figure 6 to illustrate its implementation plan. The figure includes the process for receiving SVCE Board approval of rates.

*Figure 6 Near-term Marginal Cost Based Rate Implementation and MIDAS Compliance Timelines*




In terms of SVCE's commitments to-date for permanent marginal rate design, SVCE has not yet committed to anything because it plans to make resource commitments after the effective dates of the pilots, so that the learnings from the pilots can inform these commitments. However, it has mapped the resources needed to support marginal cost-based rates in the near term (Table 8). SVCE estimates that it will spend $2.3 million to support pilot implementation of marginal cost-based rates in the near term. These costs are made up of two categories: labor and staffing, including both the start-up costs in Year 2024 and ongoing annual implementation costs through 2027. Other costs include (i) marketing,

education, and outreach; (ii) IT and systems; (iii) customer support; (iv) annual bill settlements support; and incentive costs.

*Table 8 Total Costs to Implement Real Time Pricing Across the Four Years Analyzed*

| Cost Summary | | | | |
|---|---|---|---|---|
| **Year** | **2024** | **2025** | **2026** | **2027** |
| Labor/Staffing | [redacted] | | | |
| Other Costs | | | | |
| Total Annual Costs | | | | |

In order to build out internal infrastructure within SVCE that works to support marginal cost rates adoption, SVCE will review its current billing system's compatibility with permanent dynamic rate offerings and develop an improvement plan before amending any of SVCE's existing systems. SVCE will learn from existing pilot rate system processes and plan accordingly.

# IX. Conclusion

SVCE's evaluation of its current and future rate and program offerings in order to support the goals of the LMS indicates that SVCE has already contributed to meeting the LMS goals and is on track to continue encouraging the use of energy at off-peak hours to improve grid system efficiency and reliability and reduce California's GHG emissions. SVCE's future plans for offering dynamic rates or programs that respond to dynamic rate signals are tied to the outcomes of the CPUC's various dynamic rate pilots. SVCE has committed resources to support dynamic rates and plans to continue working with California's agencies and relevant stakeholders to resolve the technological challenges that could prevent successful long-term implementation and customer uptake of real time rates or slow down the near-term implementation of the pilots.

SVCE acknowledges that real-life results from the CPUC pilots will be more indicative of future outcomes than the assumptions-based modeled energy cost benefit analysis included in this LMS Plan. The results of the CPUC pilots will allow SVCE to expand the lens through which cost effectiveness can be examined. SVCE hopes to gain information about realized customer and grid benefits and expand the cost-effectiveness perspective it uses to evaluate those benefits in future LMS Plans.

SVCE is excited to partner with the CEC, CPUC, and PG&E to help develop the rates and programs that will move customers to a dynamic-signal incentivized world and help make a meaningful impact to the operations of California's grid and energy emissions profile. Although the task is not easy, as illustrated by the numerous challenges that have already arisen, with a persistent and collaborate approach, SVCE believes that the LMS goals can continue to be met. SVCE also believes that dynamic rates will be a key tool for optimizing the grid of the future and that they will allow load serving entities to align customer incentives for consumption with their procurement costs more granularly than is possible today. With much of the expected growth in new load over the next 10-20 years coming from building and transportation electrification, SVCE is confident that electricity end users will have more opportunities to shift their usage based on a dynamic price signal.

# Attachment A

# Attachment A: Demonstration of MIDAS Compliance

Accessible at:

https://svcleanenergy.box.com/s/795gztdkt120lldroe5l6yl8kacneh2n

[Data will be transmitted to the CEC in a .xlsx file format]

**Staff Report – Item 1f**

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| **Item 1f:** | **Adopt SVCE's Load Management Standards Compliance Plan** |
| From: | Girish Balachandran, CEO |
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| Date: | 3/13/2024 |

## RECOMMENDATION

Staff recommends that the Board of Directors adopt the Silicon Valley Clean Energy Load Management Standards Compliance Plan (Attachment 1).

## EXECUTIVE COMMITTEE RECOMMENDATION

At the February 23, 2024 Executive Committee meeting, staff presented SVCE's LMS Compliance Plan (LMS Plan) in substantial form to the Executive Committee for approval prior to it being brought to the Board for adoption. At this meeting the Executive Committee voted unanimously to approve the LMS Plan and recommend its approval as a consent item at the March 13, 2024 Board meeting. Attached as Attachment 1 to this Staff Report is a public version of the LMS Plan, which redacts market sensitive information contained in the plan. The development of this LMS Plan helps to inform and guide SVCE's demand flexibility efforts. Further discussion of SVCE's demand flexibility strategy is part of SVCE's broader rates strategy and will occur as part of an upcoming Board Study Session focused on SVCE's future rates and rate affordability.

Certain types of load serving entities (investor owned utilities and publicly owned utilities) were required to submit their compliance plans to the CEC at the end of last year. Community choice aggregators such as SVCE will submit their compliance plans to the CEC by April 1, 2024. At the request of the Executive Committee, SVCE Staff has attached a table as Attachment 2 to this Staff Report with information about load serving entities' compliance plans that have already been submitted to the CEC.

## BACKGROUND

The California Energy Commission (CEC) adopted Load Management Standards (LMS) to promote electricity demand flexibility. These standards require load serving entities in California, such as Silicon Valley Clean Energy (SVCE), to develop a compliance plan that describes how the load serving entity plans to meet the goals of the Load Management Standards every three years. The goals of the Load Management Standards are to: 1) encourage the use of electrical energy during off-peak hours; 2) control daily and seasonal peak loads; 3) improve equity, efficiency, and reliability; 4) lessen/delay need for new electrical capacity; 5) reduce fossil fuel consumption and 6) reduce greenhouse gas emissions. Load serving entities are also required to evaluate dynamic rates or programs that enable automated responses to dynamic rates in their compliance plan. Load serving entities are required by the California Code of Regulations Title 20 § 1623.1 to submit their compliance plans to their rate approving body for adoption. SVCE's Board of Directors (Board) is the governing board responsible for setting rates. Additionally, load serving entities can make revisions to their compliance plans and are required by the Load Management Standards to submit annual reports to the California Energy Commission demonstrating progress towards the implementation of their compliance plan or any changes to it.

## ANALYSIS AND DISCUSSION

In its first compliance plan, SVCE describes current and future programs and rates that accomplish the goals of the Load Management Standards, provides the results of an analysis on the impacts of moving to dynamic rates on SVCE's load, describes the resources needed to implement dynamic rates, describes the status of SVCE's progress towards meeting Load Management Standards requirements, and examines dynamic rates from an equity, technology, reliability, and customer-benefit perspective.

SVCE's analysis of the impact of moving to dynamic rates on SVCE's load consisted of examining three hypothetical scenarios of potential customer class participation and incrementally addressable load for 2024-2027. Even under the scenario with the most aggressive customer participation and load change assumptions, the results indicated that dynamic rates are likely to have a very minor impact on SVCE's load. However, SVCE acknowledges that real-life results may differ from the assumptions-based modeled load impact analysis included in its LMS Plan.

Additionally, in its LMS Plan, SVCE considers opportunities to provide customers with access to hourly rates, either through enrollment in marginal cost-based rates or through enrollment in programs that access hourly rates to shape program incentives. While today there is not enough information to know which customers would benefit the most from hourly rates or the potential scale of load shift and its impacts on supply, SVCE expects dynamic rates and/or programs accessing dynamic rates signals to incentivize customers to use energy during off-peak hours. Ultimately, the widespread adoption of dynamic rates will vary and depends heavily on regulatory policies, technical infrastructure, and customer acceptance.

SVCE is already contributing to meeting the LMS goals through its current program and rate offerings and will continue to encourage the use of energy at off-peak hours to improve the electrical system's efficiency, reliability, and greenhouse gas footprint.

## STRATEGIC PLAN

As referenced in SVCE's Strategic Plan Goal 12, Measure 2, the LMS Plan will inform the development of programs to promote matching of clean energy supply and demand.

## ALTERNATIVE

Noncompliance with the Load Management Standards, which may result in the Executive Director of the California Energy Commission filing a formal complaint with the California Energy Commission or seeking injunctive relief.

## FISCAL IMPACT

The SVCE Board of Directors adoption of SVCE's Load Management Standards Compliance Plan will not result in an immediate impact to the current fiscal year (FY 2024) budget. Programs, rates and/or other measures identified in the plan will come to the Board for approval as necessary.

## ATTACHMENTS

1. Public version of SVCE's Load Management Standards Compliance Plan, which contains redactions of market sensitive information.
2. Table providing information about already submitted load serving entities' compliance plans.