
Integrated Decarbonization Roadmap Recommendations

August 2026





EC Discussion Objective

Staff requests the SVCE Executive Committee:

Recommend that the Board of Directors approve the proposed 2027–2045 Decarbonization Roadmap Recommendations, which include new goal, targets, principles, priorities, and outcomes.

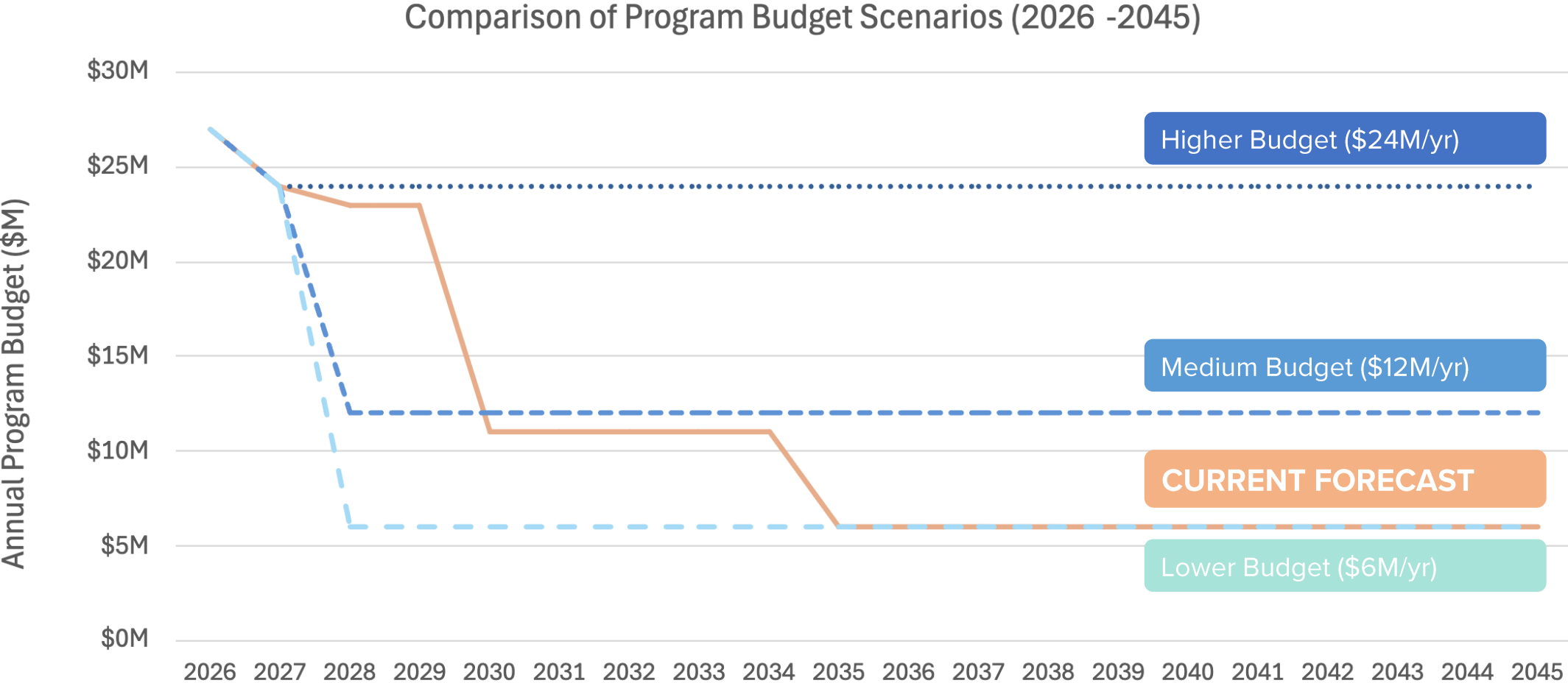


Definition of Key Terms

Term	Definition
Goal	Long-term, measurable, overarching decarbonization objective
Targets	Number of passenger vehicles and building appliances that must be electrified to meet SVCE's long-term decarbonization goal
Principles	Core values that guide SVCE's decarbonization priorities and inform decision making and resource allocation
Priorities	Key recommendations that bridge SVCE's long-term goal with targets and outcomes over the next six years
Outcomes	Results from SVCE investments, such as reduced costs to electrify, that will accelerate market deployment by solving challenges critical to reaching targets



Recommendations enable flexible planning if budget changes; forecasts based on current budget.





Roadmap builds off eight years of achievements and lessons learned.

Achievements

- Met **100% of energy demand with clean energy** 9 out of 10 years
- Contracted for **> 1,000 MWs** of NEW renewable energy and **2,000 MWh** of NEW storage
- Lowered electricity emissions **>1 million metric tons**, compared to 2015
- Supported reach codes that could add **> 10,000 residential heat pumps** while lowering costs
- Built holistic program portfolio adding **> 5,000 heat pumps** and **750 EV chargers**

Lessons Learned

- Regulations and market forces can increase prices beyond what is reasonable
- Member agency action is one of the most powerful levers for electrification
- Electrification scale, speed, and cost vary based on design, technology, and site conditions; targeted programs can accelerate deployment and lower costs
- SVCE drives strong innovation when it focuses on specific, timebound challenges



Decarbonization Roadmap Organization

Path to 2045 Decarbonization

- **SVCE Decarbonization Goal**
- **Targets**
- **SVCE Role**
- **Emissions Trajectory**
- **Phases to 2045**

2027–2032 Recommendation

- Principles
- Priorities
- Outcomes



The 2018 Decarbonization Roadmap set a series of interim GHG goals, but did not include targets or outcomes.

2018 Goal

"Reduce GHG emissions from 2015 baseline levels 30% by 2021, 40% by 2025, and 50% by 2030."

We need a goal that officially extends beyond 2030, aligns with current state goals, incorporates the need to adjust spending based on the Financial Levers Playbook, and includes measurable targets and outcomes that are beyond emissions.





Proposed 2027–2045 SVCE Decarbonization Goal:

Drive the SVCE region to fully electrify every building and vehicle by 2045 and power it with clean energy.



Targets for electrification help more effectively measure progress towards this 2045 goal.

Proposed Targets*

	2025 Baseline - Electrified Equipment	2032 Target	2038 Target	2045 Target (100% Electrified)
Light-Duty Vehicles	75,000	132,000	200,000	451,500
Residential HVAC	29,000	75,000	130,000	271,000
Residential Cooking	9,700	40,000	110,000	281,500
Residential Water Heaters	4,000	35,000	85,000	252,000
Commercial HVAC	3,800	5,500	8,500	10,500
Commercial Water Heaters	100	600	2,200	6,500

***Data sources on appliance adoption are rapidly evolving and proposed targets and baseline numbers presented above are subject to change based on future research.**



Summary Proposed Goal & Targets

Replace 2018 Goal With New Goal: Drive the SVCE region to fully electrify every building and vehicle by 2045 and power it with clean energy.

- 2045 goal aligns with state AB 1279 carbon neutrality commitment
- Codifies SVCE's leadership and focus on electrification and clean energy

Add Targets: Develop targets for building appliances and passenger vehicles.

- SVCE will serve as the regional hub for tracking progress, modeling uptake, and sharing successes and failures
- Targets reported on every 2–3 years; emissions reporting continues annually
- Note: Targets may need to be revised based on future research and evaluation



SVCE advances goal by working across four areas.

Build Clean Power Supply

**Catalyze Local Government
Capacity**

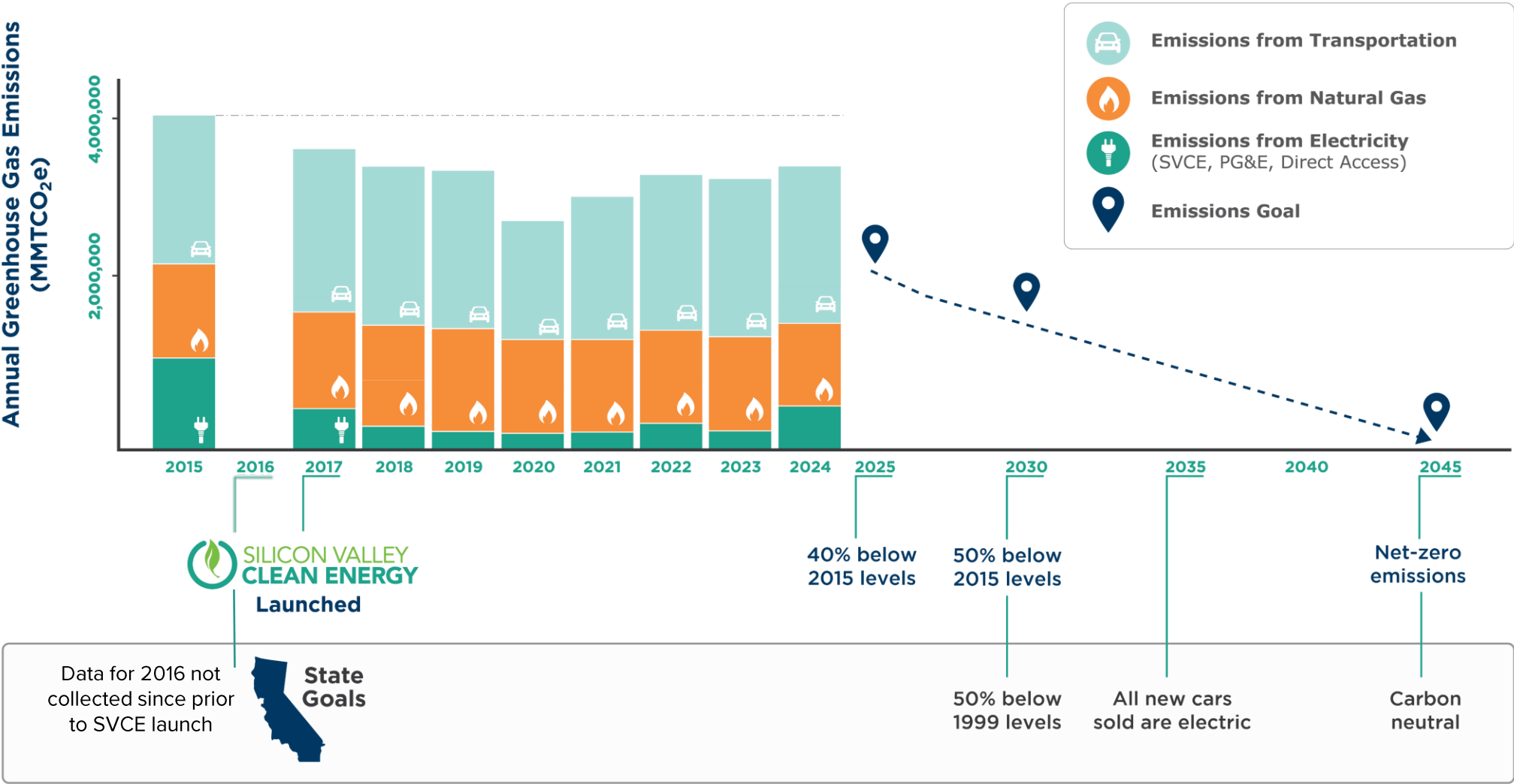


**Serve as Customer and Community
Resource**

Advance Thought Leadership

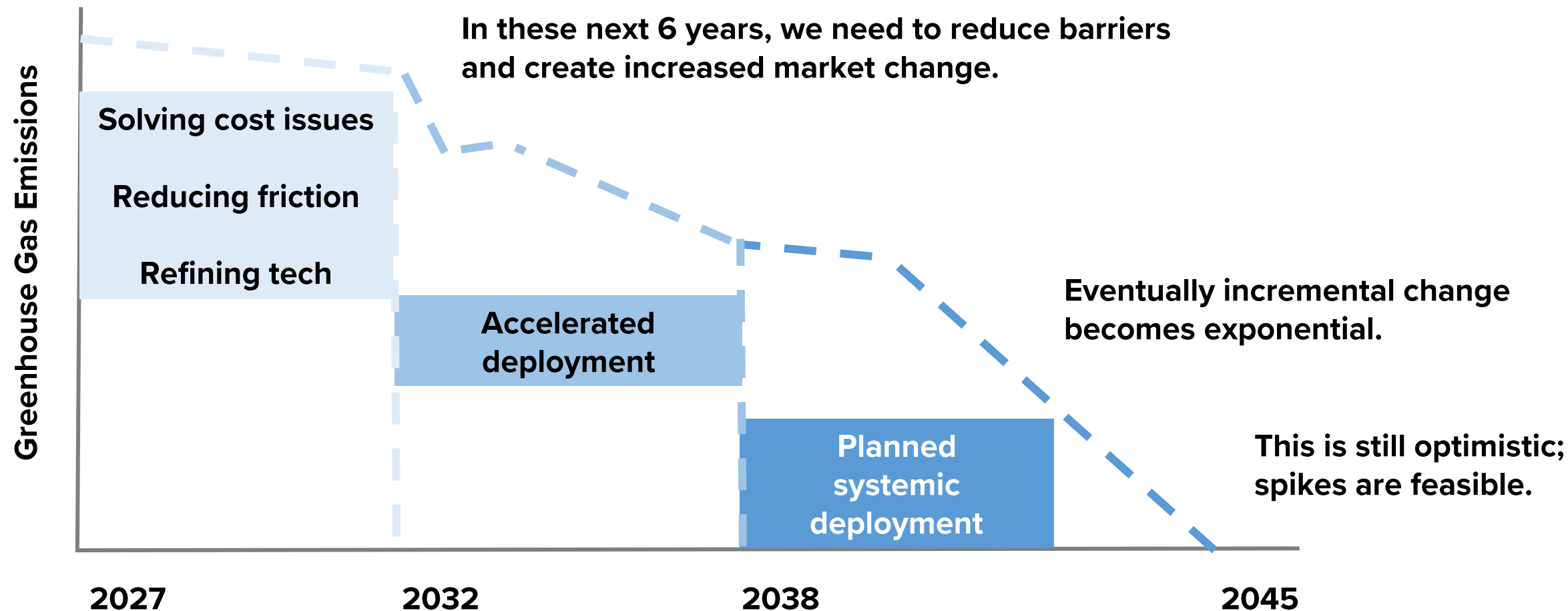


Challenge: Emissions decreased, then plateaued and don't appear to be on track to hit 2030 goal.





Deep decarbonization will not be linear. More likely to be a series of plateaus and ramps.



Note: chart is illustrative



Adoption is growing, but still nascent.

Technology type	Where we are today	Interim targets		Ultimate goal
Technology Type	2025 % Electrified	2032 Target*	2038 Target*	2045 Target
Commercial HVAC	36%	52%	80%	100%
Light-Duty Vehicles	17%	29%	44%	100%
Residential HVAC	11%	28%	48%	100%
Residential Cooking	3%	14%	39%	100%
Residential Water Heaters	2%	14%	34%	100%
Commercial Water Heaters	2%	9%	34%	100%

***Developing specific targets will require dedicating resources for further study and evaluation. Proposed targets presented above are subject to change based on future research.**

Note: "Commercial" refers to typical Small-to-Medium Business equipment, specifically packaged rooftop HVAC units no larger than 20 Tons and hot water heaters with unitary storage tanks no larger than 120 gallons.



Building a long-term path to deep decarbonization requires a phased approach that eventually reaches all.

PROVE (2020-2026)

- Build support and awareness
- Launch early programs and new construction reach codes
- Learn what is deployable and feasible

DEVELOP (2027-2032)

- Deploy where most feasible to increase demand and lower overall costs
- Adoption is mostly driven by **residential**
- Continued experimentation and policy efforts to reduce barriers

BUILD (2033-2038)

- Standardization of EV charging
- Standardization of BE retrofits
- Increased adoption of **nonresidential** electrification

DEPLOY (2039-2045)

- Managed gas transition planning for system-wide decommissioning
- EV charging fully replaces gas fueling stations
- Focus on **hardest-to-electrify** segments such as restaurants, high temperature process heating, etc.

2025: 105K

2032: 270K

2038: 535K

2045: 1M +



How can we ensure progress when progress is so uneven?

The updated Roadmap structure aims to tackle this challenge:

1. Proposed 2045 goal hones in on SVCE's areas of focus and makes long-term ambitions crystal clear.
2. Targets for appliances and vehicles combine with existing clean portfolio targets allowing us to measure our primary objective.
3. A phased approach assures that we are supporting structural change for long-term success.
4. Identifying specific outcomes for each phase helps measure progress when emissions are slower to move.

Focus 2027–2032: Develop





The 2027–2032 decarbonization principles articulate Board direction and inform all recommendations.

PRINCIPLES

1. **Build a long-term clean portfolio** by pragmatically balancing risks and costs and selectively investing in innovative solutions.
2. **Support and partner with member agencies** to catalyze emissions reductions and scale decarbonization at a lower cost.
3. **Focus on the most cost-effective and market-ready solutions** to increase demand, drive down costs, and lead to widespread adoption.
4. **Scale impact through knowledge sharing** from the lessons learned from programs, research, and pilots.
5. **Reach all of customers** through SVCE programs, since all rely on fossil fuels and are part of successful decarbonization.

2027–2032 Priorities

1. Integrate local resources and demand flexibility into portfolio planning
2. Push down building electrification costs, especially heat pumps
3. Increase access to affordable, reliable EV charging solutions
4. Scale impact through knowledge sharing





Priority 1: Integrate local resources and demand flexibility into portfolio planning

Challenge Statement

Rising load, tightening regulations, and market uncertainty are straining the path to clean portfolio targets. In addition to prudent portfolio management, new solutions—including supply closer to demand and the potential to leverage demand as a supply-side resource—could play a small, but important role, in long-term success.

Recommendations (2027–2032)

1. Build a process to identify local energy projects that incorporate stakeholder input.
2. Quantify the real value of demand flex across multiple value streams—energy resource adequacy, hourly GHG, and customer benefits—and build SVCE-specific goals.
3. Scale demand flexibility where it is proven and cost effective; while sharing clear learnings to inform policy and market design.



Priority 2: Push down building electrification costs, especially heat pumps

Challenge Statement

High upfront costs are the fundamental barrier to adoption. Reduced federal rebates and policy changes magnify this issue, while the forthcoming air district appliance regulations create both additional opportunities and challenges.

Recommendations (2027–2032)

1. Take a multi-pronged approach that includes contractor engagement, permit reform, and targeted rebates to increase demand and drive down cost.
2. Support customers, contractors, and Member Agencies to adapt to the Bay Area Air District zero-NOx appliance standards.
3. Prepare to phase out HVAC incentives as market reaches maturity.



Priority 3: Increase access to affordable, reliable EV charging solutions

Challenge Statement

The rollback of federal investment and commitments of auto manufacturers will likely slow EV adoption and makes the future of EV charging unclear. SVCE needs to continue to support adoption while avoiding high-risk investments.

Recommendations (2027–2032)

1. Focus on stable, reliable, long-term charging solutions.
2. Advocate policy changes that make charging more affordable for multifamily residents.
3. Monitor market changes and adapt programmatic support as needed.



Priority 4: Scale impact through knowledge sharing

Challenge Statement

SVCE's Board has shown leadership and commitment to building a bold clean energy future. SVCE must leverage lessons learned to transform its commitment to trying new approaches into an invaluable resource that can guide the clean energy transition.

Recommendations (2027–2032)

1. Publish 2–3 key learnings for decarbonization each year.
2. Operationalize annual decarbonization reporting metrics.
3. Incorporate findings from data and analysis to continuously improve programs and refine planning approaches.



By focusing on key outcomes, SVCE will help move the region from Develop to Deploy phase by 2033.

OUTCOMES

1. Identify at least 3 priority locations for sensible local generation development and implement feasible projects.
2. Quantify at least 2 cost effective pathways for incorporating demand flex into long-term clean portfolio.
3. Heat pump HVAC will outsell AC with gas furnaces with no incentives and HPWH retrofits will cost 20% less than today.
4. There will be twice the number of EV charging stations available to multifamily residents.
5. Publish 10 decarbonization learnings and share them with stakeholders on a statewide level.



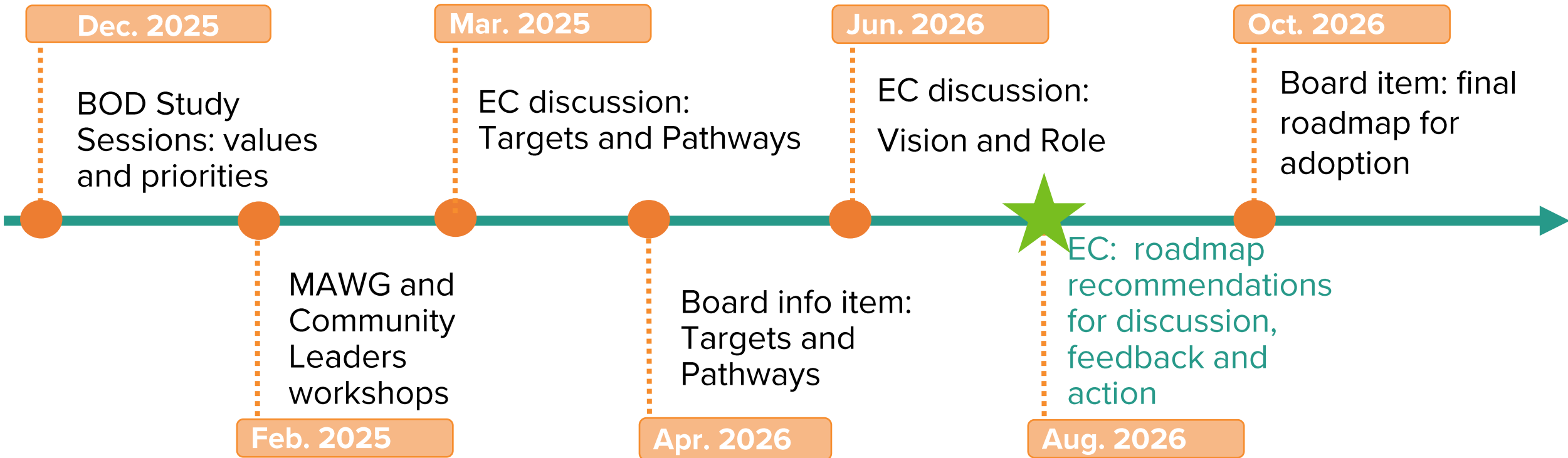
The most important part of a plan comes after it is adopted.

The roadmap is being developed with implementation in mind.

- Staff from across the organization have co-created the recommendations.
- The final decarbonization roadmap will translate the four strategic priorities into detailed recommendations across 10 sectors.
- The detailed recommendations are based on functional areas within SVCE so they are most effectively implemented by staff.
- Staff will report on progress towards outcomes annually.



The final roadmap will be brought to the Board discussion in September and for adoption in October.





Staff requests the SVCE Executive Committee:

Recommend that the Board of Directors approve the proposed 2027–2045 Decarbonization Roadmap Recommendations, which include new goal, targets, principles, priorities, and outcomes.

APPENDIX

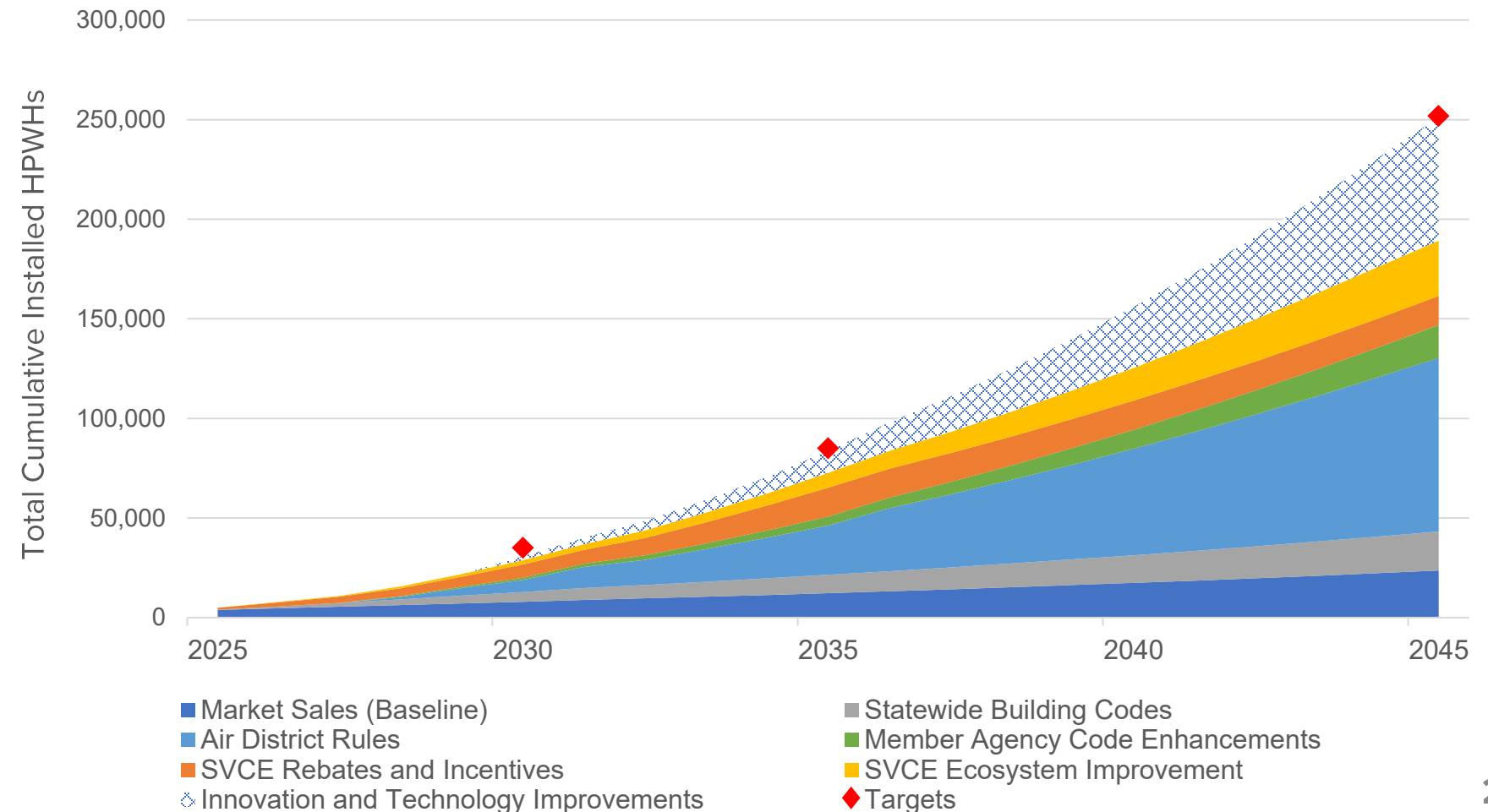


HPWH requires more innovation or funding, growth driven by policy; SVCE plays critical role.

HPWH Pathway:

- Based on best available market studies, forecasts, and program data.
- Conservative Air District compliance (starts at 20%) grows slowly.
- Current SVCE program budget.

Projected SVCE Territory HPWH Installs by 2045





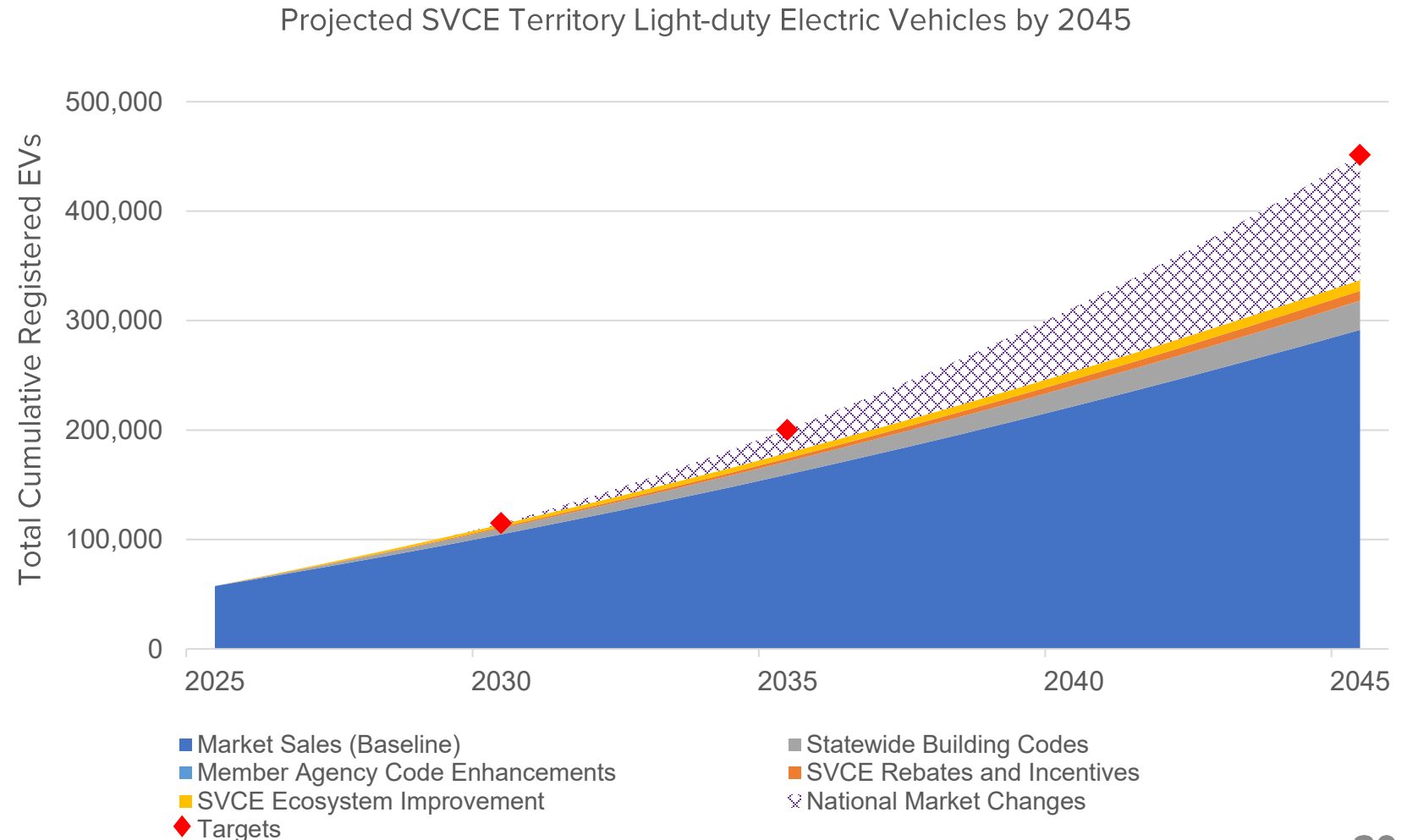
EVs have high uncertainty due to recent policy changes; SVCE's role is important but less influential.

Consumer demand supported by policies are the main driver in EV adoption.

Statewide building code and SVCE programs help grow adoption by increasing access to charging.

Recommitments to EVs at a federal level are likely necessary to meet 2045 targets.

Pathway based on current budget.



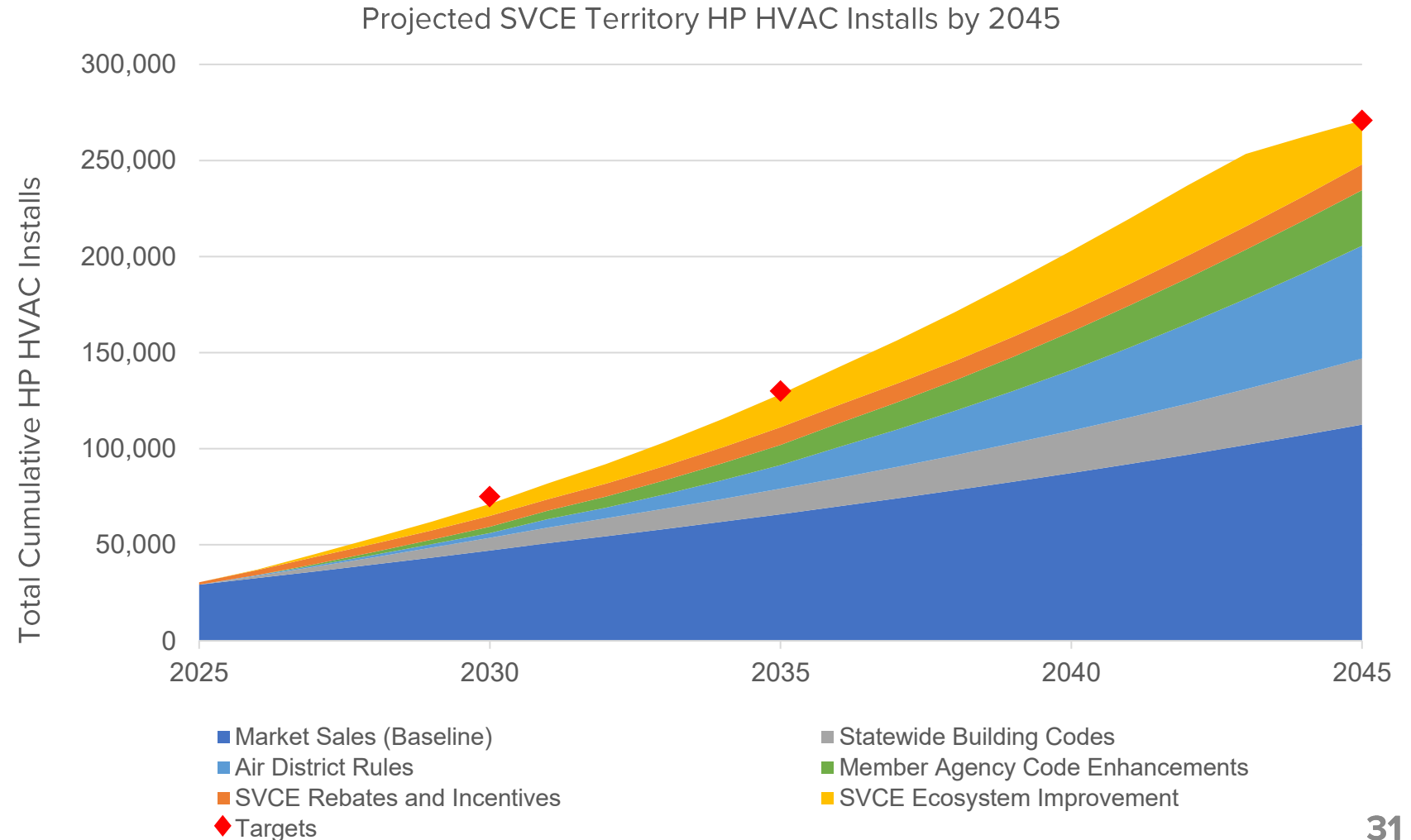


HP HVAC is on track; policy + AC demand key driver; SVCE support can phase out sooner.

Consumer demand is stronger for HVAC compared to HPWH as HP HVAC is more cost competitive and delivers real individual value today.

Statewide, Air District, and local policies key to adoption.

Pathway reflects rebates ending after 2033.





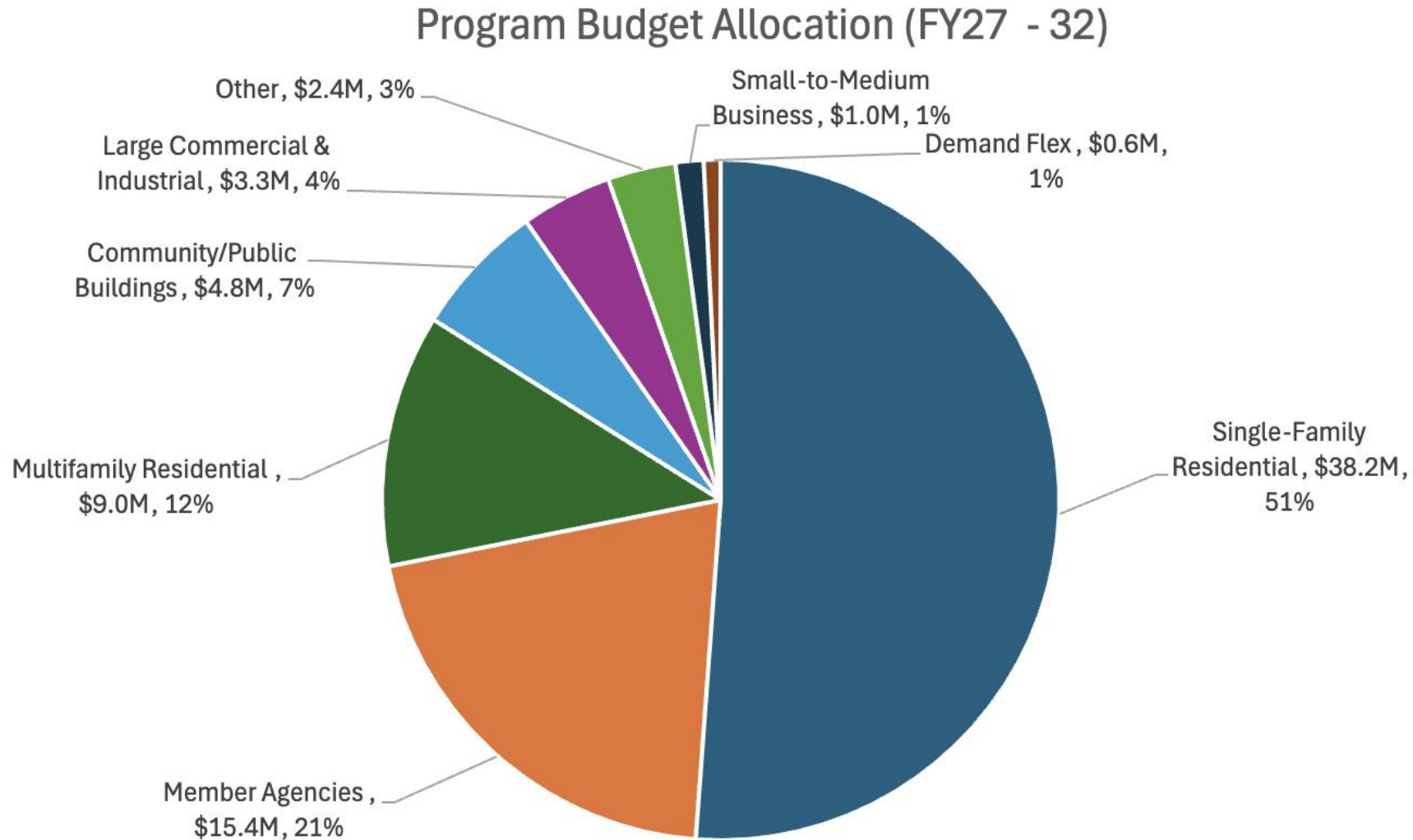
Key Assumptions and Methodology Overview

Methodology was built on data and published studies whenever possible, and conservative but realistic estimates where needed.

Category	Source
Market Sales (Baseline)	California Heat Pump Partnership Blueprint (2025) CalMTA Induction Cooking Market Characterization Report (2024) BloombergNEF Vehicle Sales Outlook (2025) CalMTA Commercial Rooftop Units Market Characterization Report (2025)
SVCE Programs	SVCE 2025 Programs impact data
Statewide Building Code	Housing and Community Development (HCD) RHNA Data with SME assumptions for new construction compliance
Air District	Bay Area Air District Rules 9-4 and 9-6 with SME assumptions for starting compliance and annual compliance growth
Member Agency Codes	City of Mountain View reach code forecast Electric Readiness and 2-Way AC ordinances with SME assumptions for starting compliance and annual compliance growth
Policy Compliance Support	SVCE SME assumptions

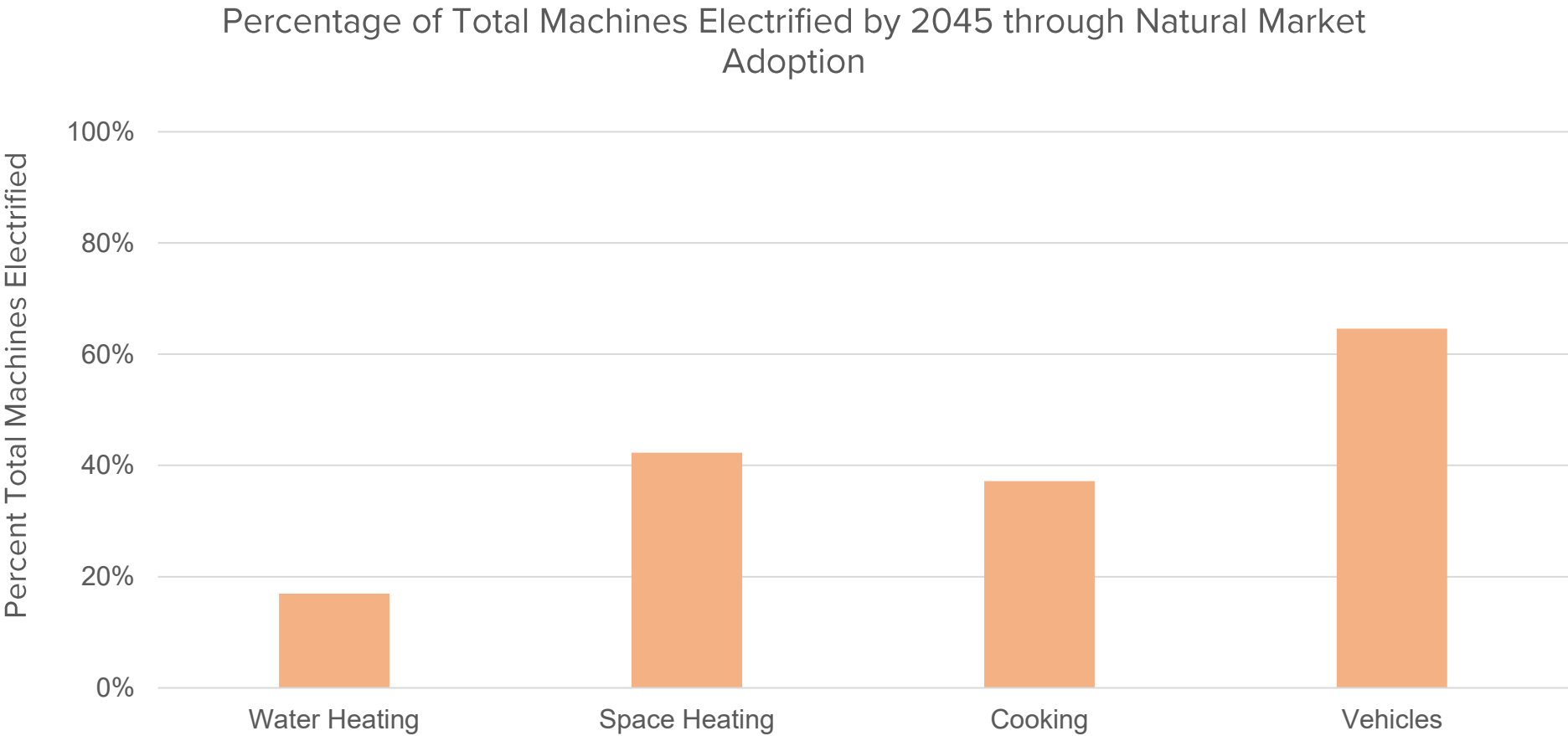


Current sector allocation aligns with recommendations; some shifting needed within sectors.





Consumer demand alone won't achieve targets.



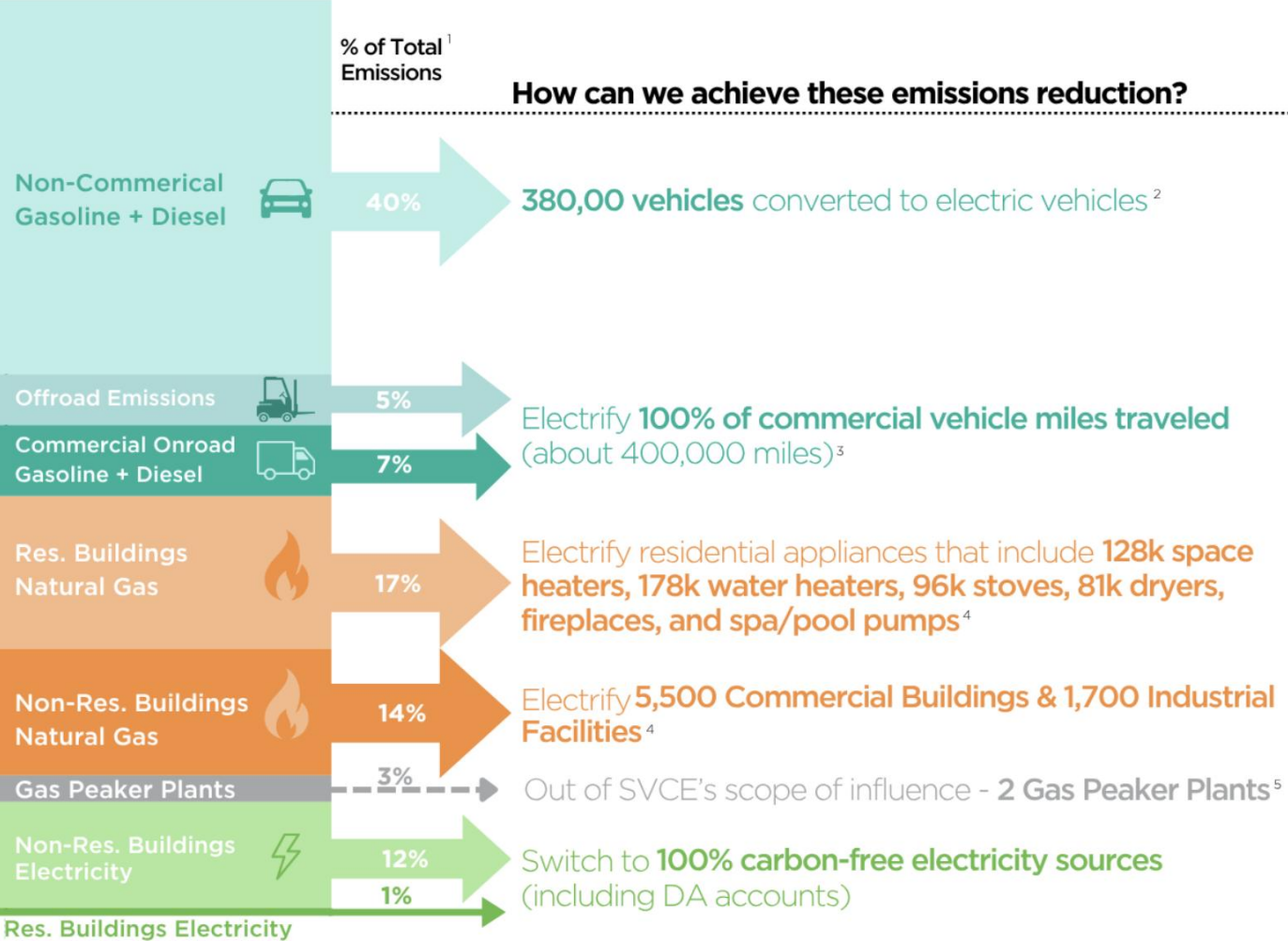
Sources:

- 1. California Heat Pump Partnership Blueprint (2025)
- 2. CalMTA Induction Cooking Market Characterization Report (2024)
- 3. BloombergNEF Vehicle Sales Outlook (2025)



Climate targets require electrifying >1M appliances and cars by 2045.

Emissions by Source



Sources:
1. 2024 Emissions Inventory
2. 2023 DMV snapshot
3. CARB EMFAC
4. SVCE Market Segmentation Study
5. 2023 CARB Pollution Mapping Tool v2.7

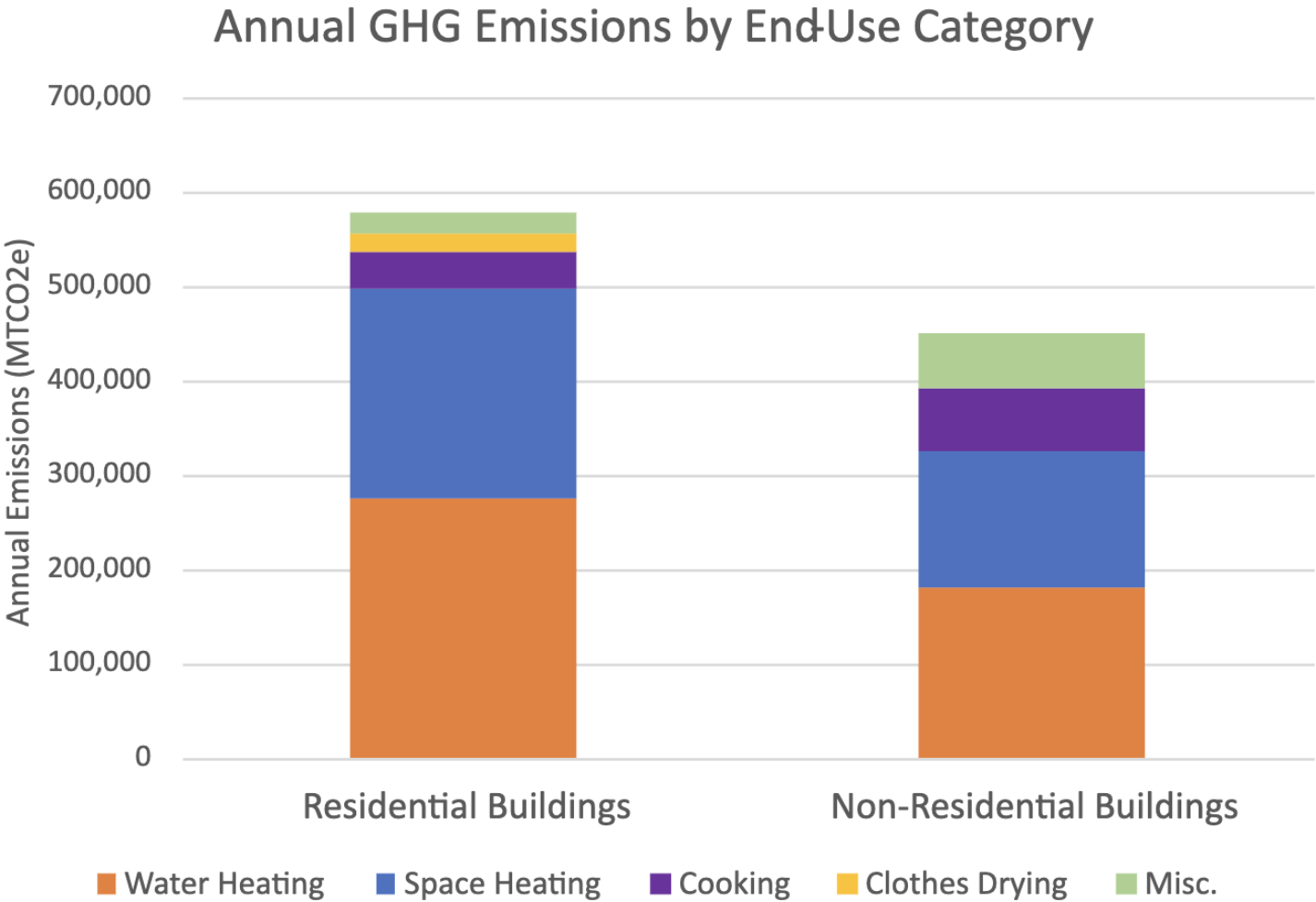


SVCE influences over 90% of residential emissions, but less than 60% of non-residential emissions.

Residential Building emissions influenced by current SVCE Programs: **93%**

Non-Residential Building emissions influenced by current SVCE Programs*: **58%**

*Lower percentage due to lack of market-ready electrification solutions for industrial and food service sectors.



Sources:
1. SVCE 2024 GHG Inventory
2. [CEC Commercial End-Use Survey \(CEUS\)](#)
3. SVCE 2022 Market Segmentation Study

Note: percentage emissions by end-use category are estimates and intended to be illustrative.

ERM Policy Revision Review Discussion

Scott Wrigglesworth
August 28, 2026 – Executive Committee

ERMP Review Requirement

1.3 Policy Administration

This Energy Risk Management Policy (Policy) is adopted by the SVCE Board of Directors and will be reviewed and updated as needed at least every two calendar years by SVCE's Board. The CEO is responsible for implementation of the Policy. The CEO is also responsible to develop Energy Risk Management Guidelines (Guidelines), which is required for staff to follow to implement the Policy.

Substantive Changes



Policy Revision #1

Derivatives not Speculation; Affirm Non-Speculation (section 6.3)

ERM Item	Revisions/Review/Discussion
Change:	Remove inference that derivative financial products are inherently speculative. Still prohibit derivatives (no change). Affirm and clarify speculative vs non-speculative.
Rationale:	Financial derivatives are not speculative or non-speculative.
Benefit:	Sound policy, clarity. Recognizing compliance obligation along side supply & demand balancing.

Prohibited transactions are those transactions that are not related to serving retail electric load and/or reducing financial exposure. Speculative buying and selling of energy products is prohibited, ~~including the use of financial derivatives such as but not limited to futures, swaps, options, and swaptions~~. Speculation is defined as buying energy more than forecasted load plus reasonable planning reserves or selling energy or environmental attributes that are not yet owned by SVCE. In no event shall speculative transactions be permitted. Procurement to meet compliance obligations set by a regulatory authority is not considered speculative, even if it may exceed forecasted load needs.

The use of financial derivatives including but not limited to futures, swaps, options, and swaptions is prohibited. Transactions that are technically financial but settle with physical obligation into CAISO are permitted (e.g., ISTs and CRRs).



Policy Revision #2

Raising Threshold Mandated Length (section 6.4)

ERM Item Revisions/Review/Discussion

Change: Increased the max Net Open Position Tolerance Bands to 110% for all year due to the need to comply with RPS long-term contracts and acknowledgement of PCIA as a financial hedge. (No change to minimum levels). Allows for a compliance obligation exception.

Rationale: Last policy update added the PCIA hedge but did not contemplate out year implications versus thresholds.

Benefit: Makes the thresholds consistent with the addition of the PCIA hedge.

Table 1 Calendar Year Energy NOP Tolerance Bands

Period*	Minimum Tolerance	Maximum Tolerance
Current Balance of Year	80%	110%
Year 2	70%	90 110%
Year 3	55%	80 110%
Year 4	50%	80 110%
Year 5	50%	80 110%

*For example, if the current year calendar year is 2023, then Year 2 is 2024.

In the event, the Maximum Tolerance level is exceeded because of a physical position needed to meet compliance obligations for clean energy, SVCE will not automatically unwind a position to be within the limits. Instead, SVCE will report the exception to the ROC and will only sell on a forward basis if there is no need to hold the position for compliance purposes and the underlying resource volume is considered firm or certain.

Non-Substantive Changes



Non-Substantive Revisions

(Detail in Appendix)

Topic	Reason
Solicitation	Technical alignment that procurement involves solicitations
Load Risk	Added load risk language to acknowledge potential coming/going of large loads
Product List	Cleaned-up redundant items and increased clarity
CRRs	Added explanation of what CRRs are and what they do
Auction vs Allocation	Clarified that delegated authority applies to CRR Auctions, and that CRR Allocations are a zero-cost item provided to SVCE based on load it serves
Adjusted footnote	Clarified footnote language for CEO delegated authority as it was leading to confusion among staff
No financial holding	Revised COI language to change 'direct holdings' to 'financial interest' to align with proper legal terminology



Recommendation and Next Steps

Recommendation:

Staff requests that the Executive Committee (Committee) recommend that the Silicon Valley Clean Energy (SVCE) Board of Directors (Board) approve proposed amendments to the Board-adopted Energy Risk Management Policy.

Next Steps:

1. Seek Board for approval on consent in September
2. Modify internal standards to conform with changes

Appendix: Non-Substantive Changes



Policy Revision #3

Solicitation Language (section 1.2)

ERM Item	Revisions/Review/Discussion
Change:	Added “solicitations” to the scope of the document.
Rationale:	Introducing clarity that proper solicitation processes are referenced in policy.
Benefit:	Affirms procurement diligence even if supply cost is an exception to normal procurement.

1.2 Scope of Business and Related Market Risks

SVCE provides energy to retail customers in its service territory that entails business activities such as; [solicitations and](#) bilateral purchases and sales of electricity under short-, medium- and long-term contracts; scheduling of load and generation of electricity into California Independent Systems Operator (CAISO) markets; retail marketing of electricity to consumers within its service territory; compliance with voluntary objectives and regulatory requirements as it relates to carbon free and renewable portfolio standard (RPS) compliant energy; participation in CAISO Congestion Revenue Rights (“CRRs”) market; managing the balance of load and generation over short, medium and long term horizons; and compliance with California Public Utilities Commission (CPUC) Resource Adequacy (RA) requirements.



Policy Revision #4

Load Risk (section 5.6)

ERM Item	Revisions/Review/Discussion
Change:	Acknowledge that load risk includes the coming and going of large customer loads.
Rationale:	Non-weather load risk that forecast could be unknowingly off due to customer decisions.
Benefit:	Transparency regarding non-weather load risk.

For load volumetric risk, beyond weather risk, there remains a discrete binary event driven risk. This risk relates to large customers loads joining SVCE through default enrollment, contractual choice, or large customer loads departing from SVCE (to move back to PG&E, to a direct access provider, bypassing SVCE through solar and/or microgrid, or shutting down operations). These could be a sizeable and potentially create an unexpected step change in the SVCE load forecast. SVCE cannot always quantify these changes as a risk metric, but may integrate economic attrition in existing risk metrics. Further SVCE routinely performs stress testing to understand the impact of unexpected load migration to or from SVCE. Overall, SVCE manages this risk, as best as possible, with monitoring and close collaboration between procurement, customer, member agencies' planning staff, finance, regulatory and risk management teams.



Policy Revision #5

Product Table (section 6.3)

ERM Item Revisions/Review/Discussion

Change: Revised product list for clarity & removed redundant references.

Rationale: Clarity and conciseness (no new products, none removed).

Benefit: Tightens list to align to proposed updates to the standards for clarifications to staff.

6.3 Approved Transactions

Item 4
PRESENTATION

All Approved Transactions will be initiated through solicitation, bilateral negotiation, auction, or allocation process as further detailed in the ERM Standard. Authorized transactions which SVCE authorized traders can utilize must be consistent with this Policy. Transactions must be directly related to the procurement and/or administration of products: to meet load obligations and compliance for power supply, hedging and operation of the Authority. Such products include but are not limited to:

- Electric energy
- Resource adequacy products
- Reliability products
- RPS and carbon free attributes
- Ancillary services
- Basis transactions and products including congestion revenue rights (CRRs)
- Tolling agreements, & natural gas tolling agreements specifically approved by the board,
- Natural gas hedges needed to manage risks associated with Board-approved natural gas tolling agreements. This includes use of both physical and financially settled natural gas hedges and bilateral purchases of energy products.

- electric energy
- Resource adequacy products,
- Storage capacity,
- Transmission products,
- ancillary services,
- congestion revenue rights (CRRs)
- renewable energy,
- Carbon-free energy and/or attributes
- renewable energy certificates (RECs),
- basis transactions,
- greenhouse gas emissions allowances,
- tolling agreements, & natural gas tolling agreements specifically approved by the board,
- natural gas hedges needed to manage risks associated with Board-approved natural gas tolling agreements. This includes use of both physical and financially settled natural gas hedges and bilateral purchases of energy products.



Policy Revision #6

Table 5 Clarify “CRR Allocation vs Auction” (section 6.4 and 6.5.2)

ERM Item	Revisions/Review/Discussion
Change:	Added definition of CRRs, and clarified table and footnote on differences for CRR Auction and Allocation.
Rationale:	Clarity and to acknowledge that allocations are granted and come at no cost; the CRR limits therefore are limited to auction transactions.
Benefit:	Clarity.

Congestion Revenue Rights

CRRs are a tool used to manage basis risk, which is the difference in wholesale energy price between where SVCE has a generation resource versus the price paid to meet load in the CAISO market. As a load serving entity, SVCE is awarded a certain quantity of CRRs which it may use to mitigate some of the risk. SVCE may also participate in the CAISO's CRR Auction in order to acquire additional CRRs. While CRRs are intended to hedge risk, they can create an obligation or cost to SVCE. CRRs, whether from auction or allocation, are administered by CAISO, and CAISO is the sole SVCE counterparty for the CRRs. Guidelines related to the overall CRR strategy including amount, location and bidding, are included in the ERM Standard.

Continued on next slide

Table 2: Authority Delegated to the CEO by the Board

Product	Term Limit	<u>Maturity Limit</u>	Volume Limit	Counterparty Limits	Who
Energy, Capacity, and CAISO Ancillary Services	Day Ahead and Real Time	N/A	As needed to meet SVCE's expected load obligations with the CAISO	Any counterparty	CEO
Gas	Daily	N/A	As needed to meet SVCE's obligations for gas tolls*	Through the counterparty associated with the toll	CEO
<u>Energy(Power)</u> Gas, Capacity, CRRs <u>through CAISO Auction**</u> , and Environmental Products	Up to 12 Months	18 months	As needed to meet SVCE's expected load^/gas toll*needs (per Purchasing Policy)	Any counterparty	CEO
	Up to 60 months	72 months	As needed to meet SVCE's expected load/gas toll*needs	Board-approved Master Agreements	CEO
	Over 60 months	As approved by Board	As approved by the Board	As approved by the Board	Board

^mMay include physical IST transactions or financial derivatives.

*nNatural gas hedges needed to manage risks associated with board approved natural gas tolling agreements.

**CRRs through CAISO allocation may exceed 72 months, and extend up to 108 months (9 years), if part of the standard claim an LSE possesses on allocated CRRs.



Policy Revision #7

Table 5 Clarify “Cumulative” (section 6.5.4)

ERM Item Revisions/Review/Discussion

Change: Clarified table and table footnote.

Rationale: Delegation of authority is to be per transaction.

Benefit: Clarity for staff as the term cumulative was being misunderstood.

Table 5: Per Transaction Limits of Authority Delegated to Authorized Personnel by the CEO

Product	Term Limit	Notional Value Limit*
Energy, Capacity, and CAISO Ancillary Services	Day Ahead and Real Time	As needed to meet SVCE's obligations with the CAISO
Energy**	Balance of the month	\$5 Million
	Prompt month	\$7.5 Million
	Up to 12 months	\$25 Million
Resource Adequacy Products, CRRs <u>through Auction</u>	Prompt month	As needed to meet SVCE's obligations
	Balance of compliance year	As needed to meet SVCE's obligations
	Up to 12 months	\$15 Million
Environmental Products (Carbon Free and Renewable Energy Resources)	Up to 12 months	\$15 Million

*Notional value limits are inclusive of broker fees and represent cumulative notional value limits irrespective of the time of transaction.

** Energy Notional Value Limits are cumulative exclusive of one another for any one transaction, such that the \$25MM up to twelve months is in addition to the balance of month and prompt month values (and not inclusive of them). They are not cumulative across transactions as this table is for per transaction limits.



Policy Revision #8

COI Language (section 6.6)

ERM Item	Revisions/Review/Discussion
Change:	Clarified employees cannot have a “financial interest” that is in conflict with SVCE, but pragmatically softens language related to “direct holdings”.
Rationale:	Employees or employee family members may have direct holdings as part of larger personal portfolios or as compensation that do not pose a conflict of interest.
Benefit:	Not excessively burdensome.

6.6 Conflict of Interest

All SVCE employees who are involved in any aspect of transacting for energy or energy-related resources are prohibited from investing or having a financial interest in any company with whom they transact on behalf of SVCE ~~transacts~~, including ~~those with whom it has executed~~ enabling agreements. Prior to preparing a solicitation, engaging in evaluation of, negotiation with, transacting with, or oversight of a transaction or potential transaction with any company, all involved employees must ensure that they do not have a financial interest in ~~are divested in direct holdings with~~ that company. The ban on investment and requirement to divest is regardless of whether the investment would require disclosure on the employee's FPPC Form 700.

SVCE employees will sign notice acknowledging policy regarding conflict of interest and report any existing or potential conflicts of interest (see Appendix A).

Demand Flexibility and DERMS Update

Joey Lande and Alisha Pegan
August 28, 2026

Agenda

- Key Takeaways
- Recap Demand Flexibility Intentions and Projects
- Review DERMS Costs and Savings Analysis
- Recommendation and Discussion



Key Takeaways

Demand Flexibility Intent: In June 2025, the Board of Directors authorized the CEO to negotiate and execute a \$971,238 contract with Lunar Energy for programs services and a Distributed Energy Resources Management System.

Progress Update: Staff analyzed dozens of scenarios to quantify financial value of Demand Flexibility to SVCE. Generally, demand flexibility programs are more expensive relative to standard power supply alternatives.

Recommended Next Steps: SVCE's findings are unique and generating new conversations. Staff recommend pausing program development with Lunar, and share findings with external stakeholders and regulators.



Demand Flexibility Recap



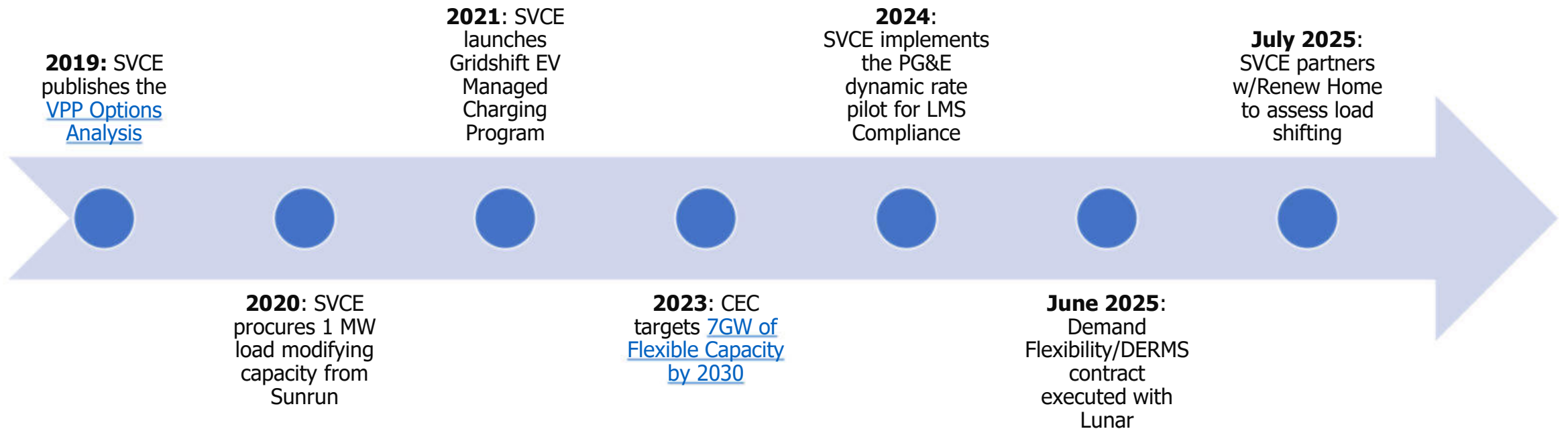
Key Terms

- **Load:** a measure of electricity required by equipment or facilities at a specific moment or across a time period (e.g. load shape)
- **Demand Flexibility (DF):** the capability of devices and/or customers to shed or shift load, in response to signals reflecting prices or supply constraints on the grid
- **Distributed Energy Resources (DERs):** small-scale energy systems or equipment that can supply power or can be managed, such as batteries, EVs, heat pumps, and smart thermostats
- **Distributed Energy Resource Management System (DERMS):** a software platform designed to register, monitor, aggregate, and control distributed energy resources (DERs)
- **Virtual Power Plant (VPP):** a network of distributed energy resources that are connected and managed by software to operate like a single, coordinated power plant
- **Load Management Standards (LMS):** California Energy Commission regulation requiring load serving entities to offer customers an hourly, dynamic rate, or program that responds to an hourly price signal
- **Dynamic Rates:** time-varying rates, including time-of-use rates and hourly dynamic rates, that adjust based on wholesale market prices, constraints, availability, and other factors, instead of a fixed rate for a set period
- **Capacity (MW):** the maximum amount of electricity a resource can produce when operating at full output. Measuring capacity is critical for grid planning, and matching supply to demand to ensure reliability of the power grid.



SVCE Demand Flexibility Timeline

SVCE is a leading CCA in piloting new demand flexibility approaches





SVCE Demand Flexibility North Star



Aim: enable SVCE to provide all customers with the ability to earn savings by easily, automatically and comfortably flexing their electricity use daily

- contribute to a reliable and clean grid
- generate operational value for SVCE

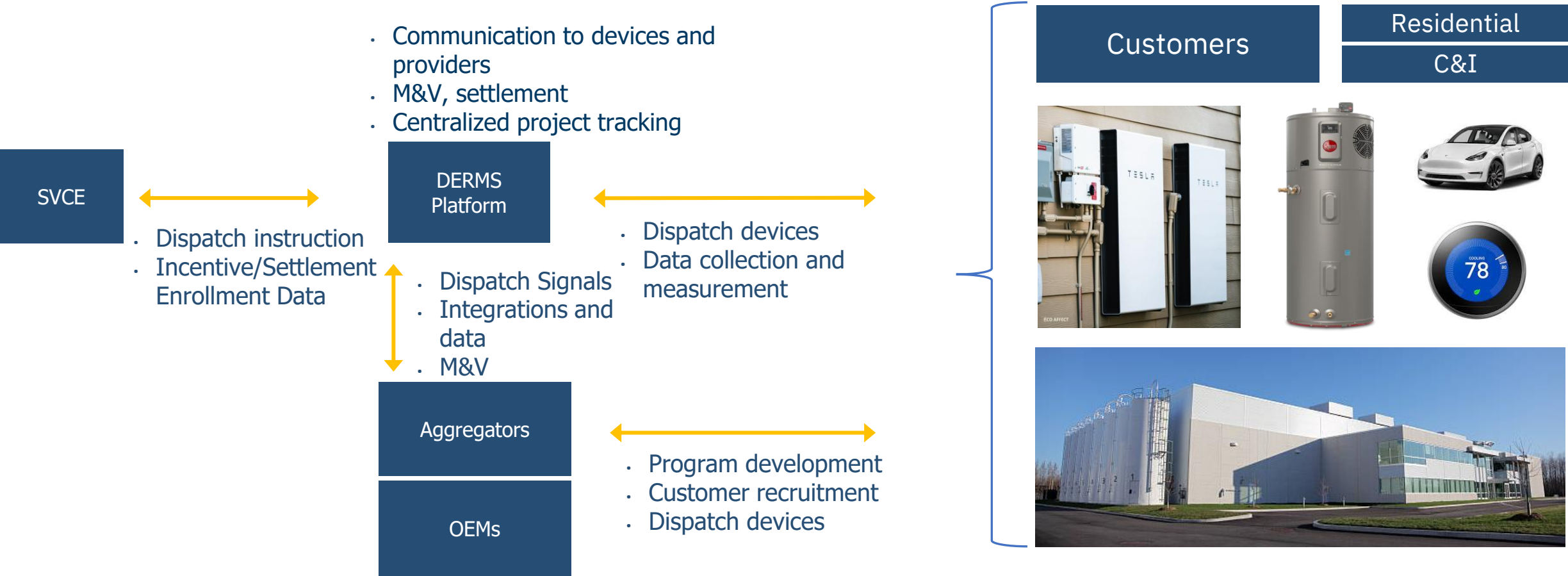
Target: After many pilots, SVCE's focus became scaling

- Enroll 30MW of demand flex capacity by 2030



What is a DERMS and why has SVCE pursued one?

Role of a Distributed Energy Resource Management System (DERMS)





Partnership with Lunar Energy

Contract Summary

5-year Master Services Agreement for a Distributed Energy Resources Management System (DERMS), and programmatic services to support SVCE's demand flexibility goals.

Key Elements

- DERMS Software
- Program design services, modeling value of demand flexibility
- Contract structure for integrating end-use loads from SVCE decarbonization programs with the DERMS
- Contract structure for developing and launching new flexibility programs



Demand Flexibility Costs & Savings

What is the operational value for SVCE?: Power supply benefits are greater than costs to fund program

Program Costs to SVCE: Software costs for DERMs, program implementation (administrative, fees, M&V), customer incentives (upfront and/or ongoing performance payments)

Savings to SVCE: Avoided energy costs, avoided capacity costs, avoided renewable energy credit (RECs) costs, if applicable

T&D Benefits
• Avoided distribution upgrade costs • Avoided transmission upgrade costs
IOUs

Generation Benefits
• Avoided energy costs • Avoided capacity costs • Avoided REC costs (if applicable)
CCAs

End User Benefits
• Bill savings • Increase ROI on equipment • Other benefits, emissions, quality of life, etc.
Customers



Demand Flexibility Implementation

Assess SVCE value to determine reasonable budget proposals



Step 1: Model load impact scenarios with Lunar

- Determine representative load profiles and dispatch parameters
- Incorporate customer tariff, vintage, generation, etc.



Step 2: Analyze SVCE savings with the Financial Valuation Tool

- SVCE staff developed a new tool, incorporating capacity, energy, RECs, export credits under different versions of NEM
- Paired with results of the load impact modeling, the tool helps unpack the financial impact of different project scenarios to SVCE

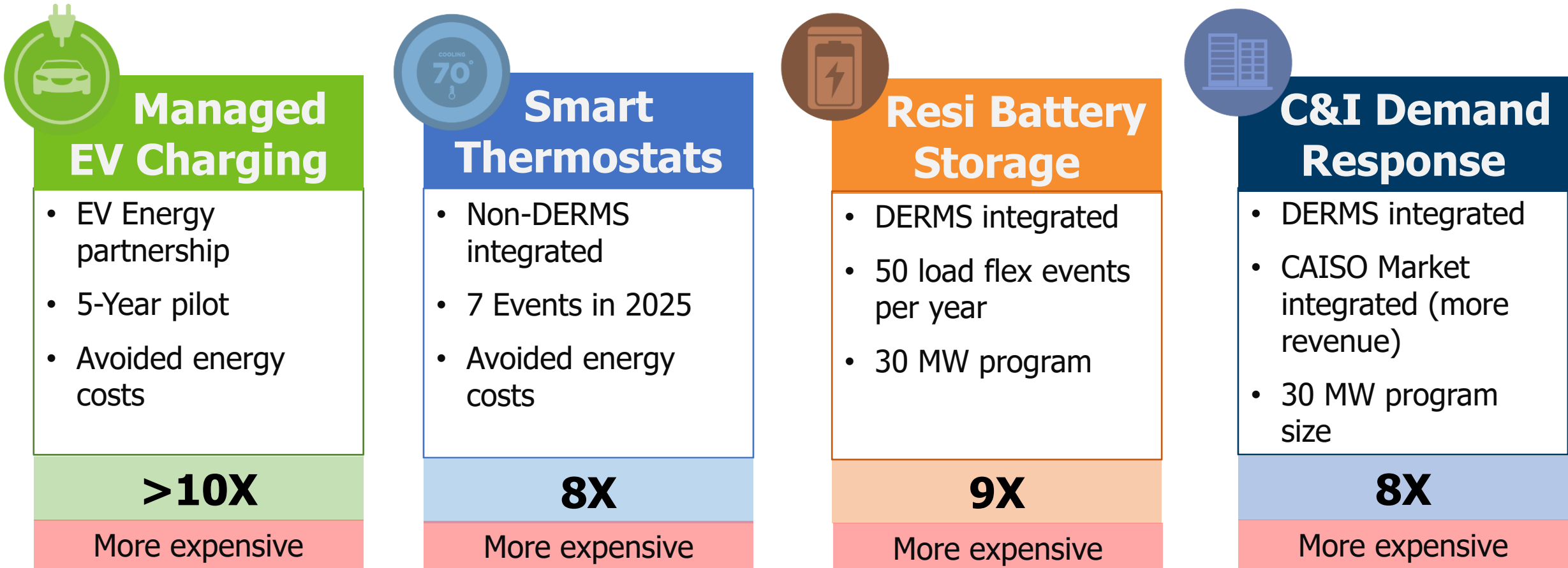


Valuation Results



Program Evaluation Results

Primary flexibility programs are currently more expensive than Power Supply options





The Benefits of Flexing Resi Batteries

Load flexing leads to negative SVCE margins for an avg residential customer

A customer with a new solar and storage system receives export compensation under the updated version NEM, referred to as NEM 3.0, Net Billing Tariff, or Solar Billing Plan. SVCE's explored the financial impacts of battery adoption under NEM 3.0.

2026 Margins

Standard Customer

Base Case

Reference case for
margins comparison

incremental
change

Solar & Storage

-\$138

Export prices greater
than wholesale prices

incremental
change

50 Flex Events/Yr

-\$20

Reduces SVCE benefits

7Yr NPV Margins

Standard Customer

Base Case

Reference case for
margins comparison

incremental
change

Solar & Storage

\$721

Avoid future REC prices,
export prices decrease
overtime

incremental
change

50 Flex Events/Yr

-\$69

Reduces SVCE benefits

Margins = Revenue + Power Supply Benefits – Export Compensation – Power Supply Cost



Flexing Does Not Improve Benefits

Dispatching to SVCE cost curve does not increase savings to SVCE

**7Yr NPV
Margins**

200 Events

Standard Customer

Base Case

Reference case for
margins

Solar & Storage

\$721

Avoid future REC prices,
export prices decrease
overtime

200 Flex Events/Yr

- \$119

More dispatches reduce
benefit to customer and
SVCE

incremental
change

incremental
change

**7Yr NPV
Margins**

**Self-
Consumption**

Standard Customer

Base Case

Reference case for
margins

Solar & Storage

\$721

Avoid future REC prices,
export prices decrease
overtime

Self-Consumption

\$281

Battery optimized for
home usage, not exports

incremental
change

incremental
change

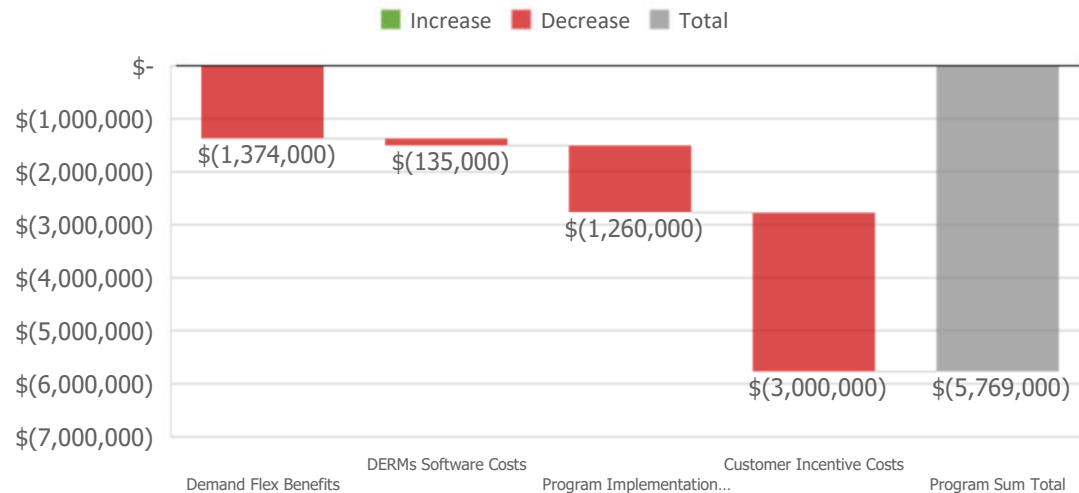


Program Cost Analysis

Modeled value of different programs connected to DERMS

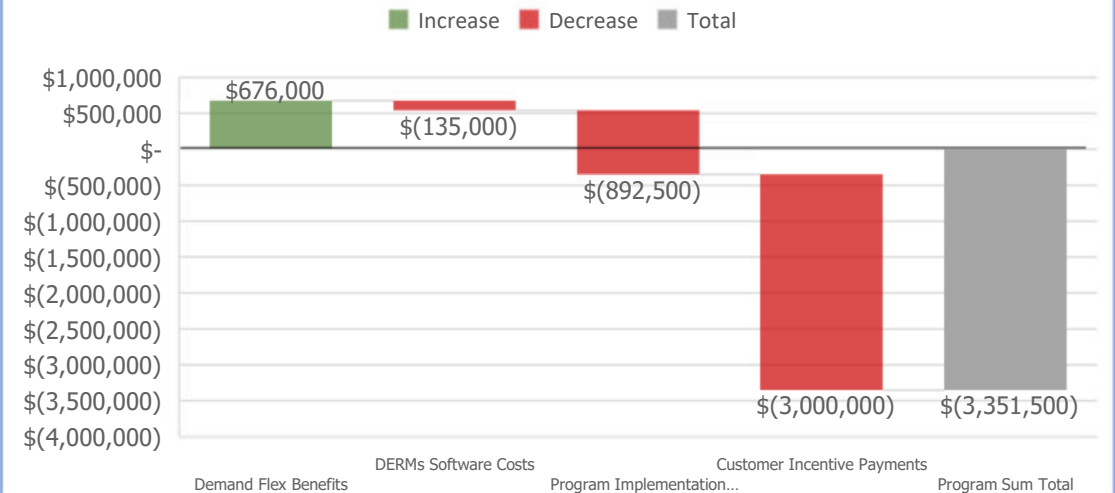
Resi Solar + Storage

Avg Annual Program Costs for 30 MW Resi Solar and Storage Program with 50 Load Flexibility Events



C&I Demand Response

Avg Annual Program Costs for 30 MW C&I CAISO Demand Response Program with 50 Load Flexibility Events



Different methodologies applied to calculate the benefits of demand-side vs supply-side programs



Summary and Recommendation



What Others Are Doing

CCAs

- Establish the value of load-modifying capacity using different methodologies
- Leverage external funding
- Unclear how detailed other analyses have been
- Weekly discussions with other CCAs, effort to align on methods underway

IOUs

- Rely on public purpose funding for demand flexibility
- Stated program cost per kW are close to SVCE's forecasts, however;
- The benefits are projections from the state's Avoided Cost Calculator, which:
 - Includes comprehensive benefits
 - Even for benefits we do accrue (e.g. capacity), the ACC values are higher than our own



Pause DERMS program development, but keep the contract

- Revisit initial target of 30 MW of flexible capacity
- Define and monitor market conditions for when benefits would outweigh costs
- Explore grants and funding opportunities
- Investigate implications for Load Management Standard and SVCE Rates strategy



Amplify Findings & Innovate

- Publish findings and share learnings with stakeholders and regulators in collaboration with other CCAs and technical experts
- Advocate for solutions in existing Regulatory Proceedings



**Thank you!
Questions?**