



Draft Decarbonization Strategy & Roadmap

September 2018

Overview

- SVCE's Mission & Progress to Date
- Decarbonization Strategy
- Roadmap
- Next Steps



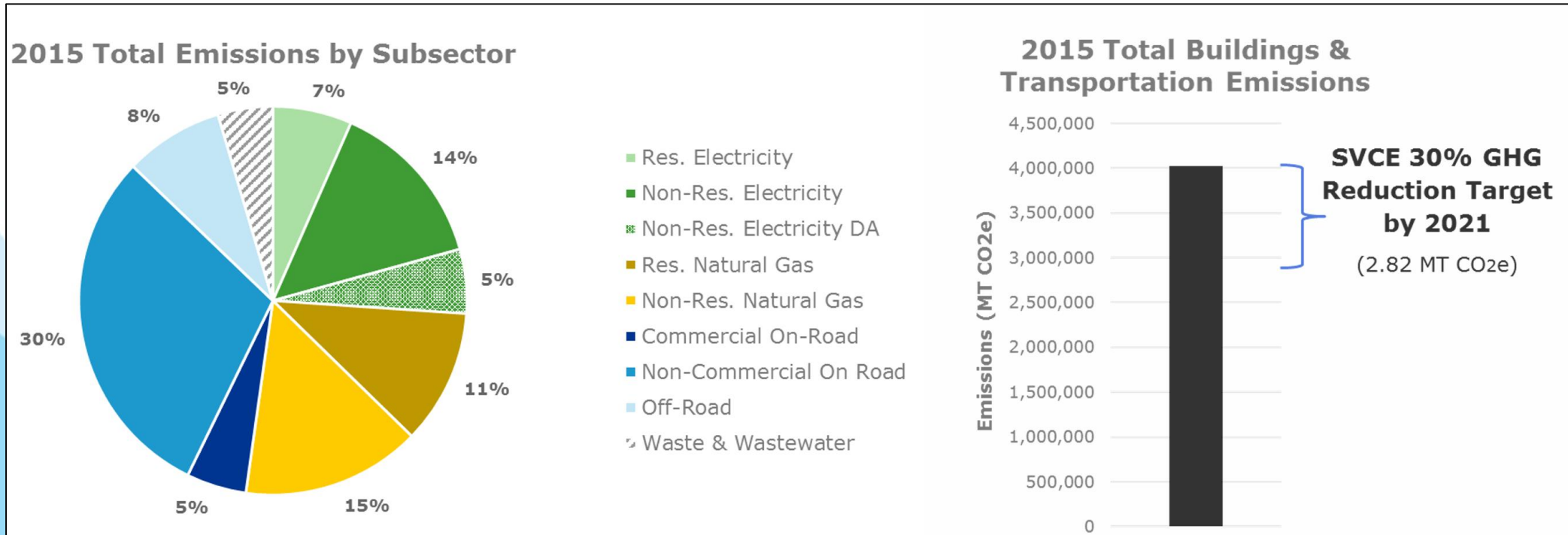
SVCE's Mission & Progress to Date

SVCE's Mission

Reduce dependence on fossil fuels by providing carbon free, affordable and reliable electricity and innovative programs for the SVCE community

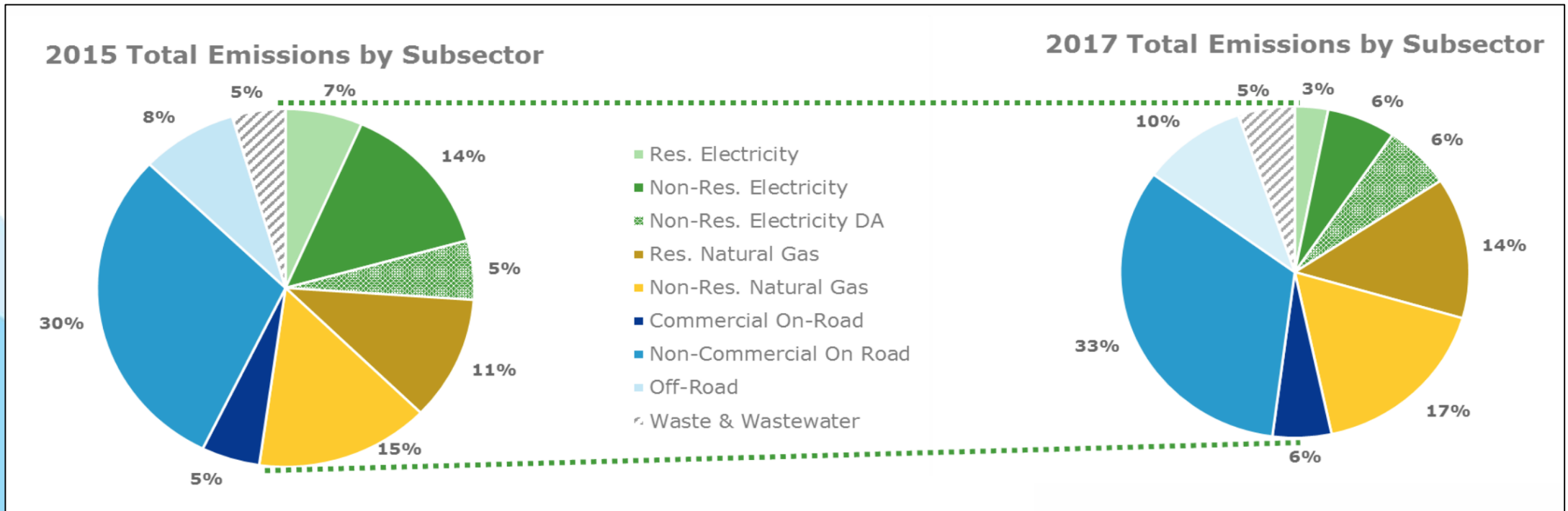
Progress to Date

- SVCE's 2015 baseline emissions are 4.03 million MT CO₂e, which includes all energy-related emissions (electricity, natural gas, transportation)



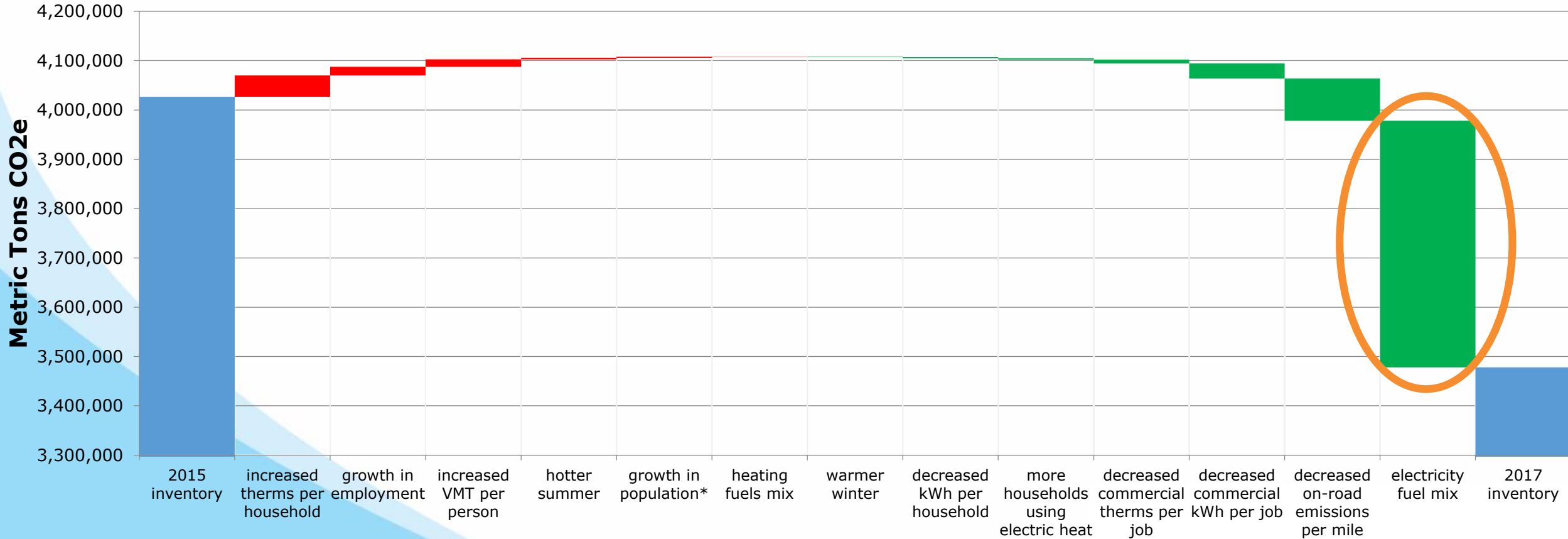
Progress to Date

- SVCE service territory reduced emissions by 14% from 2015 to 2017, nearly halfway to the 2021 target



Progress to Date

- Majority of emissions reductions in electricity due to SVCE



Analysis of drivers behind emissions changes carried out using DOE-funded tool "GHG Contribution Analysis"

Progress to Date

- ✓ GreenStart: carbon-free default electricity supply
- ✓ GreenPrime: 100% renewable electricity supply option
- ✓ GHG and energy asset baseline data assessment
- ✓ “Peak Day Pricing” program for C&I customers
- ✓ Community engagement grants in progress
- ✓ BAAQMD grant for heat pump water heater retrofits

Key Advisory Group Recommendations

Customer Program Advisory Group

- Energy awareness & education
- Beneficial electrification
- Multi-family EV charging
- Battery storage

Member Agency Working Group

- Remove barriers to electrification in muni policies
- All electric building codes
- Community-wide EV readiness and infrastructure plan

C&I Customers

- Workplace EV charging
- All-electric building design incentives
- Behind-the-meter storage
- Dedicated/load-following renewables supply



Customer Program Advisory Group



C&I Community Roundtable,
Watts for Lunch

Broader Partner Landscape



Customers, Staff, Committees, Board

Research Universities & National Labs



Federal, State & Regional Government & Regulatory Entities



National Environmental Nonprofits



Member Communities



CCE Peers & Industry Agencies



Grassroots Environmental Organizations



PG&E & Local Munis



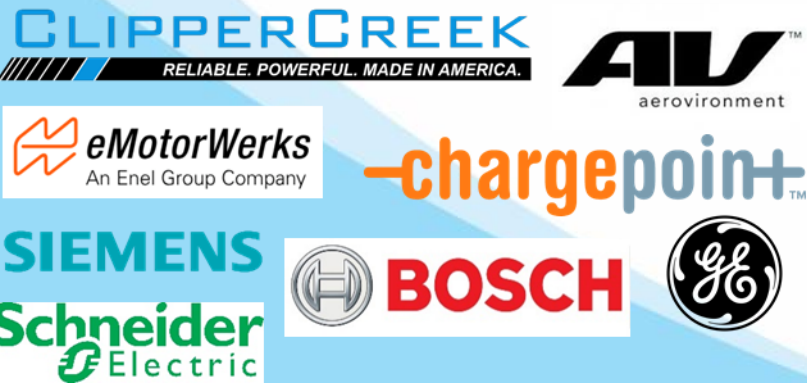
And more!

Broader Partner Landscape

EV OEMs



EVSE OEMs



Customers, Staff, Committees, Board

Accelerators & Innovation Platforms



Solar, Battery & Other Cleantech Companies



Practitioners/Other

- Architects
- Developers
- Solar installers
- HVAC installers
- Plumbers
- Automobile dealerships
- Financiers
- Low-income/DAC
- Etc.

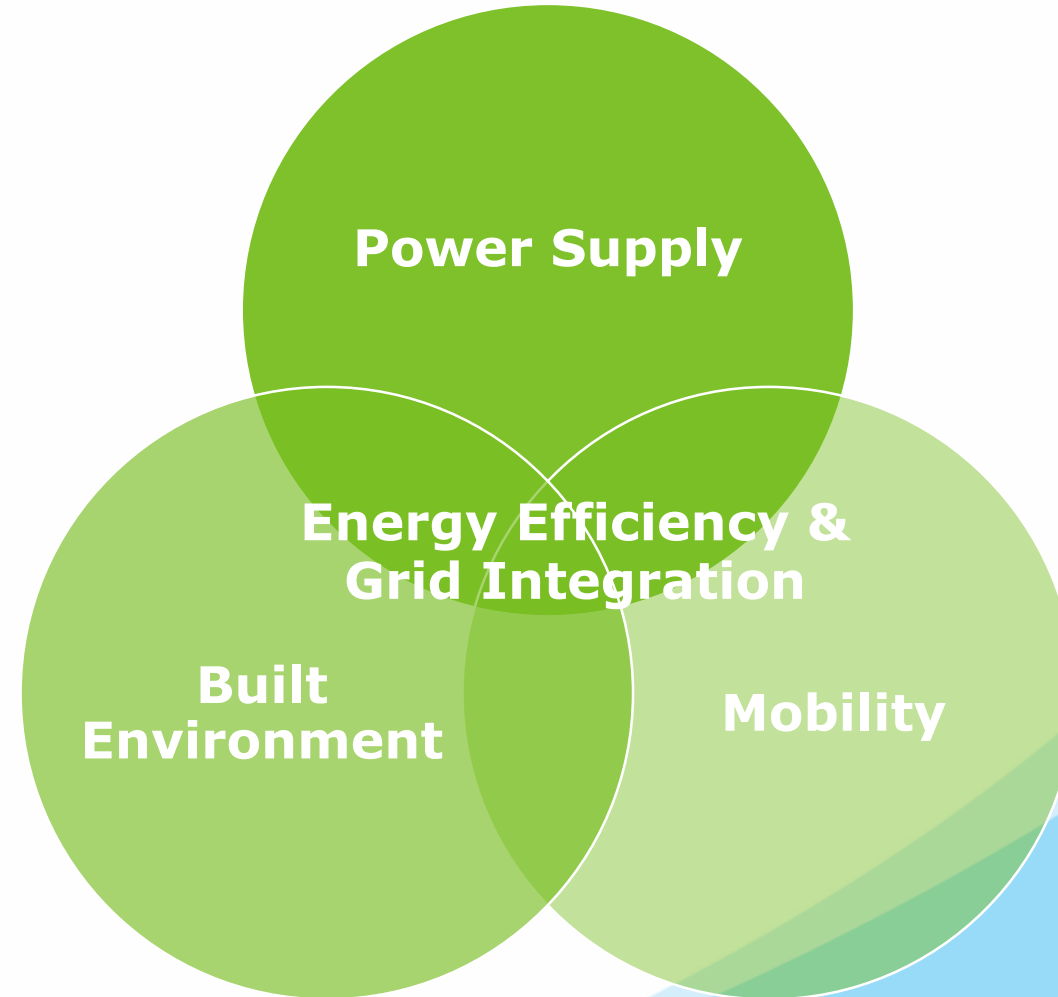
And many more!

Decarbonization Strategy



Overarching Strategy

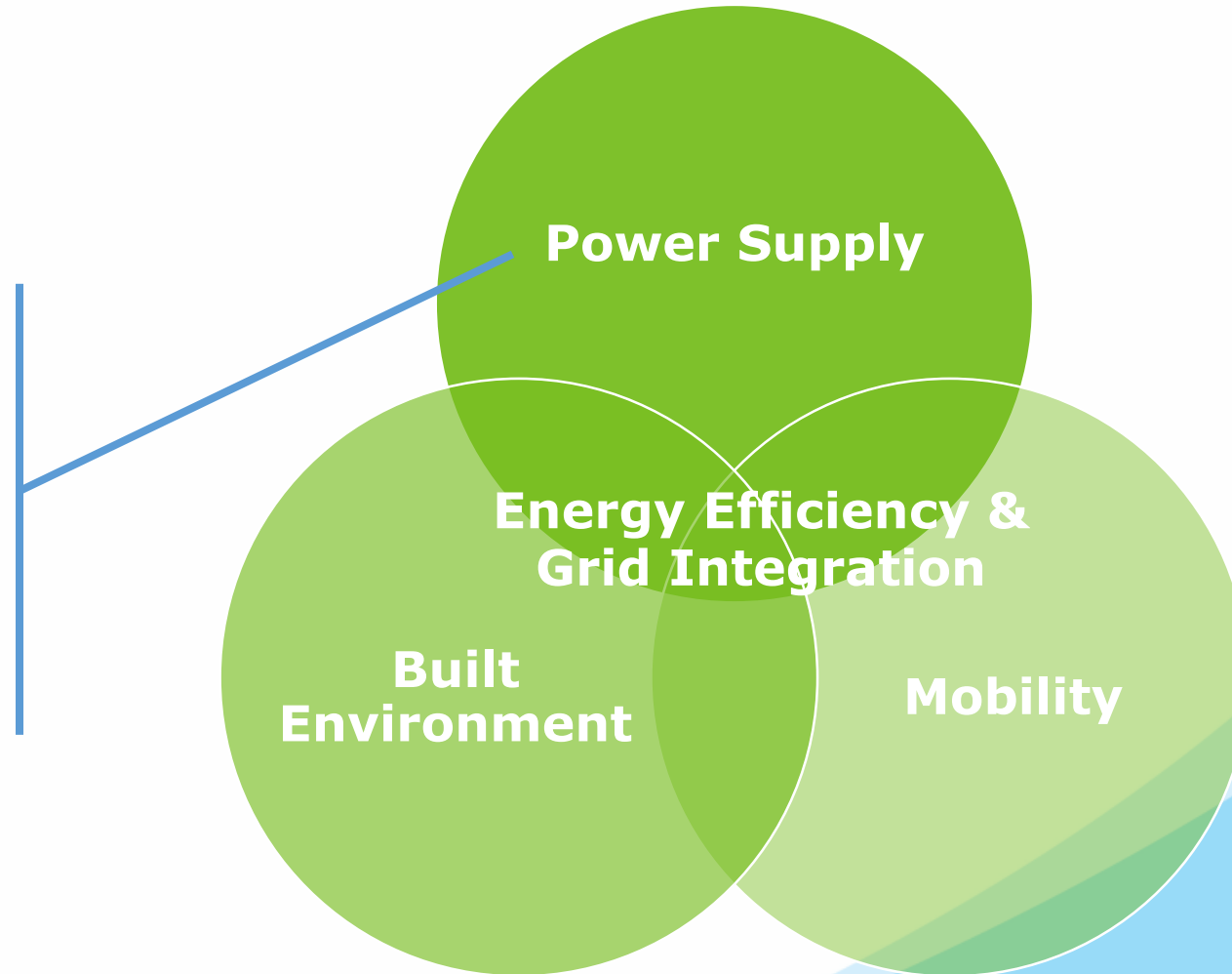
- Procure & maintain a sustainable, affordable and carbon-free power supply
- Electrify everything
- Promote energy efficiency and ensure successful grid integration



Power Supply

Carbon-free electricity is the cornerstone of a decarbonized economy, and SVCE's core product.

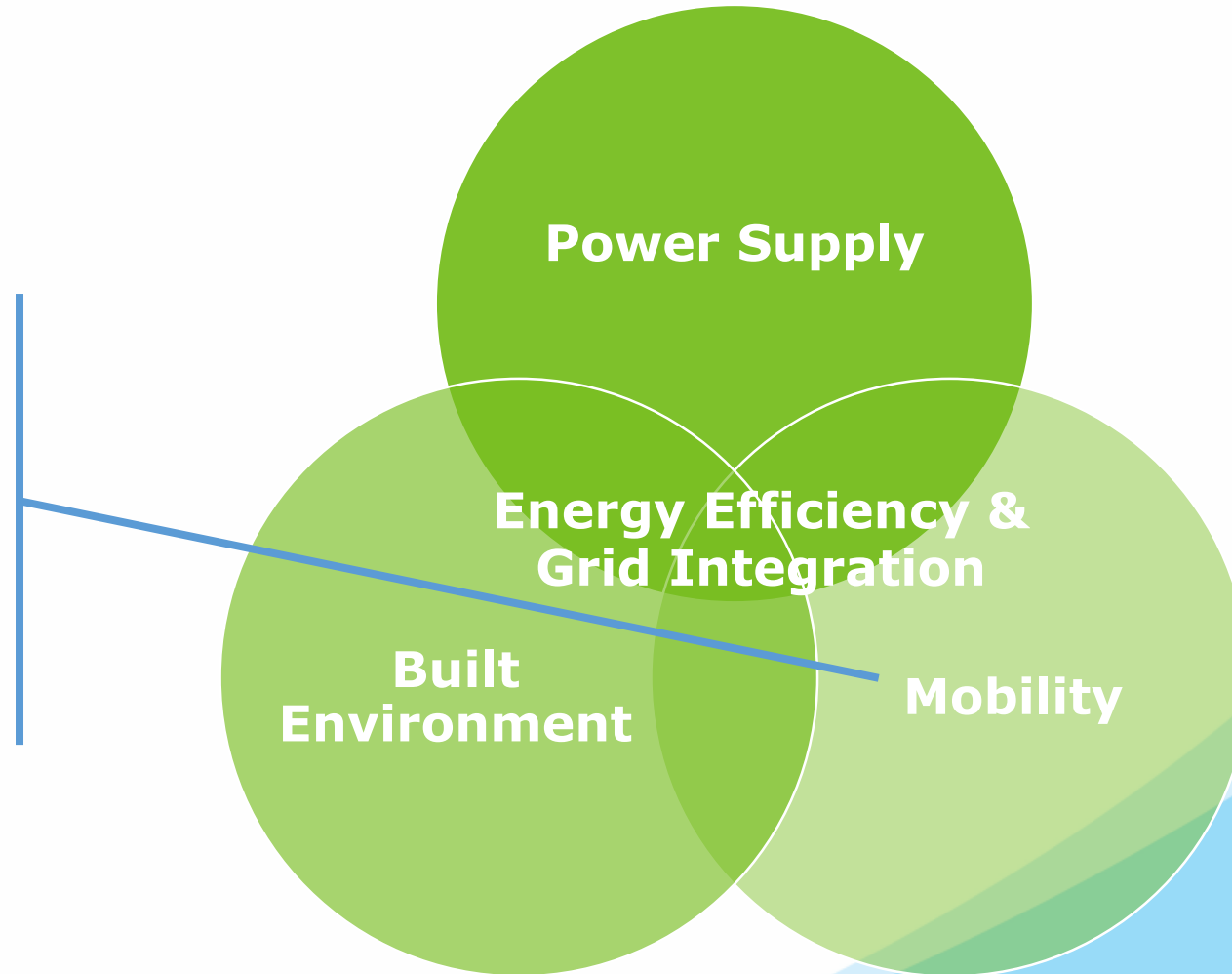
- Ensure power supply is sustainable, affordable and carbon-free
- Provide innovative rate products to better serve customers and support the grid



Mobility

Transportation is the single largest category of emissions, and changing this is critical to achieving our community's climate targets.

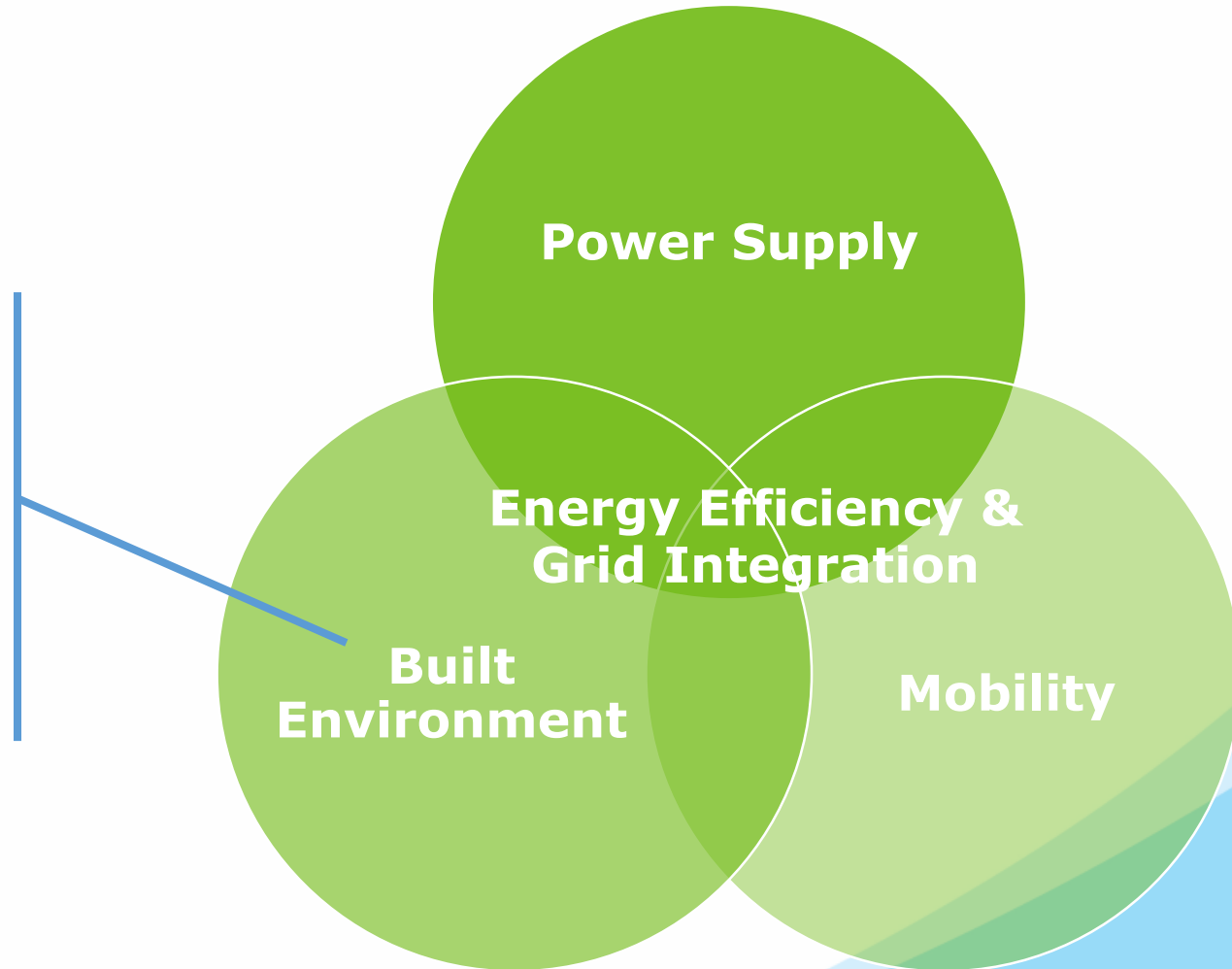
- Electrify transportation, including both passenger and commercial vehicles
- Develop electric vehicle charging infrastructure



Built Environment

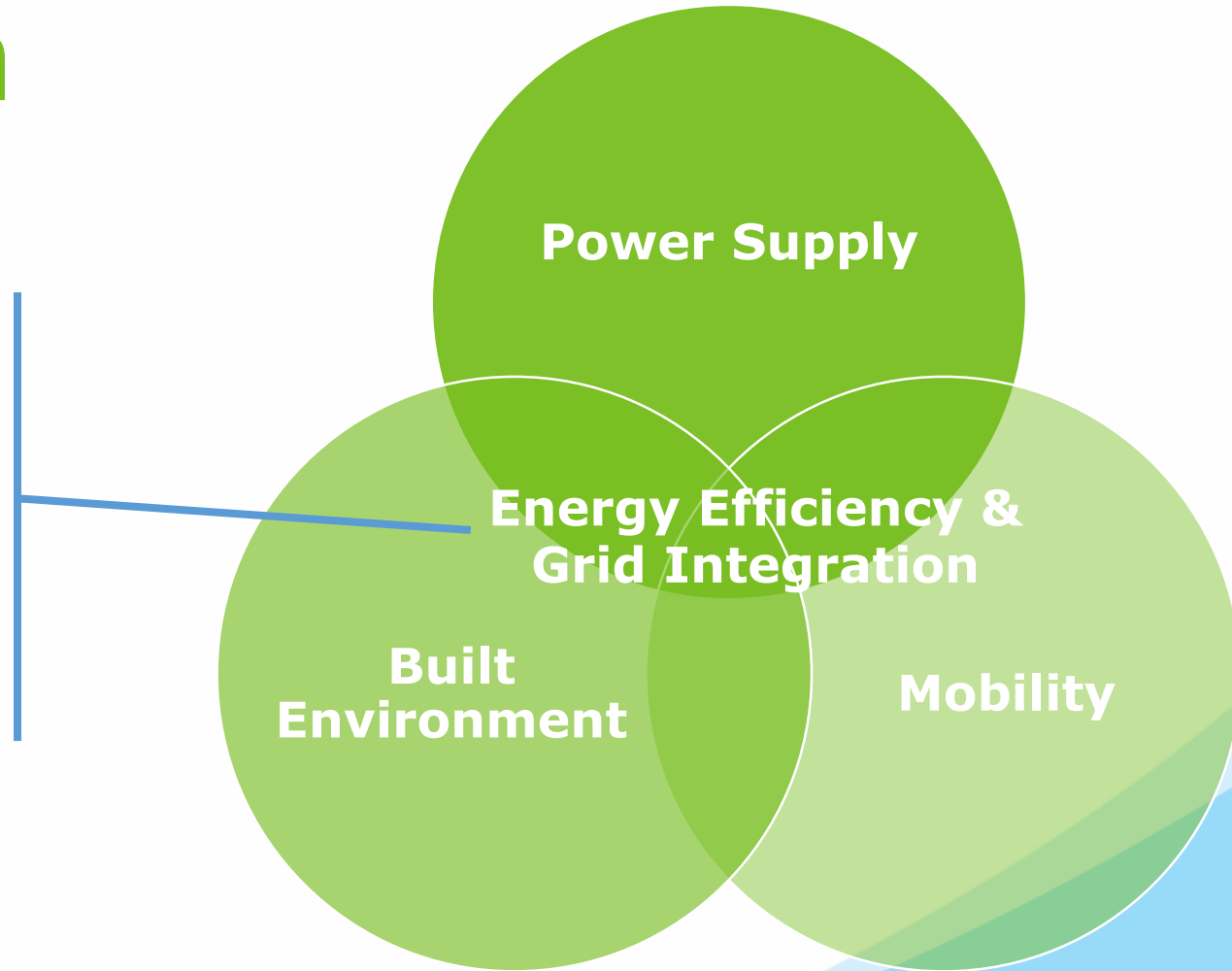
Emissions from buildings make up the second largest component of SVCE's remaining emissions.

- Switch appliances that run on fossil fuels to efficient electric technologies powered by SVCE's carbon-free electricity

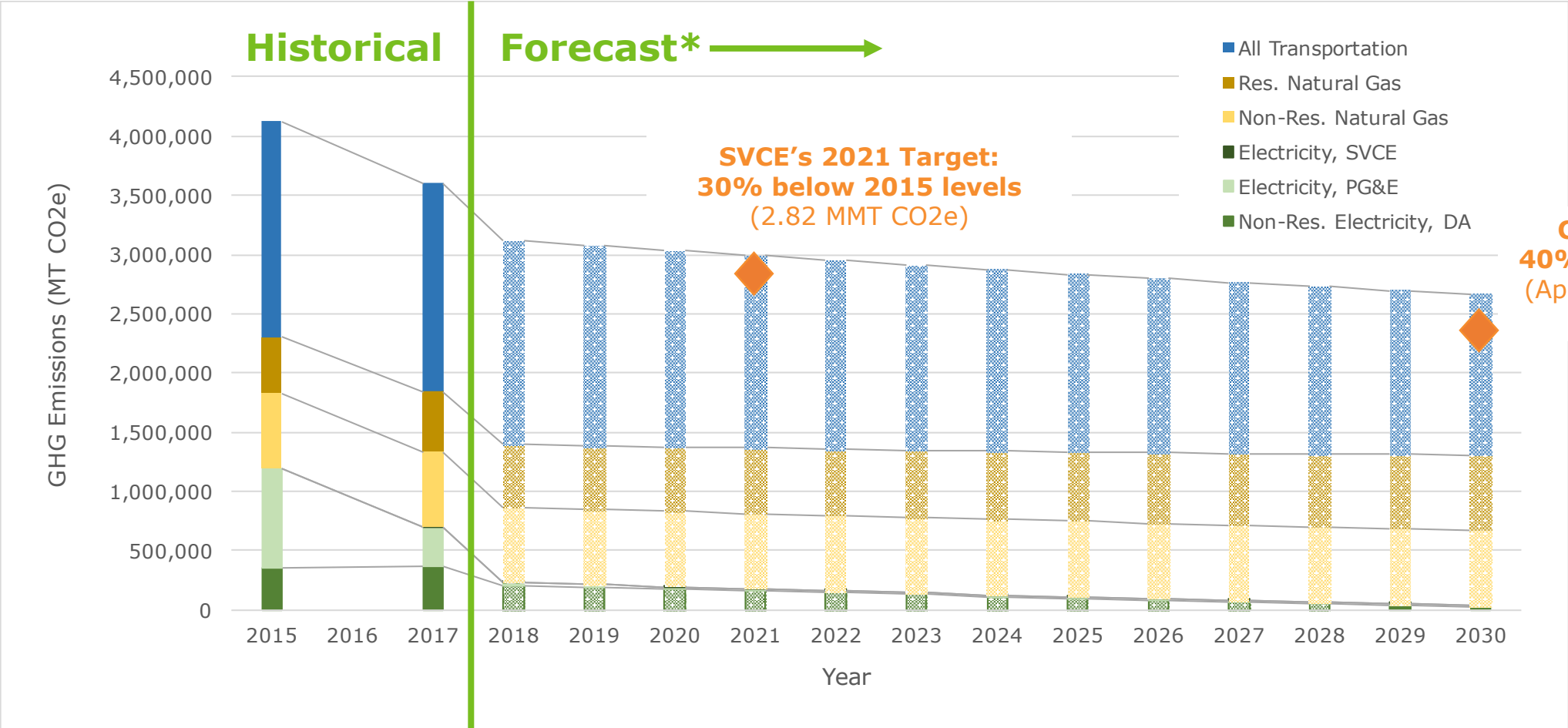


Energy Efficiency & Grid Integration

Successful decarbonization relies on continued progress toward energy efficiency and the utilization of electrified loads to enhance demand-side flexibility, integrating high penetrations of renewables in the power supply and minimizing potential distribution system impacts.

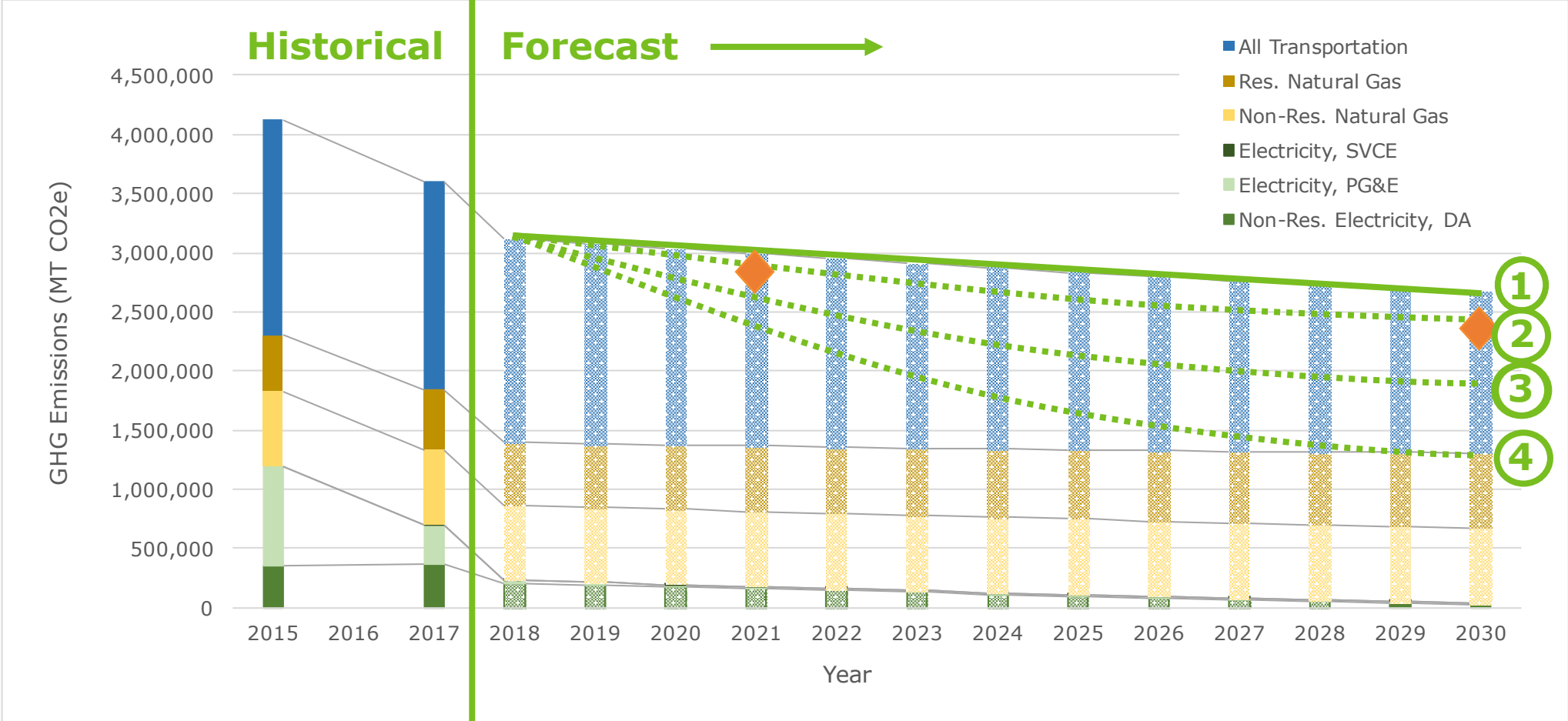


SVCE Emissions Trajectory



*Draft business-as-usual (BAU) forecast accounts for existing and planned federal and state policies, in addition to extrapolating observed historical trends

Bending the Carbon Curve



- ① Draft BAU forecast
- ② 100% residential HPWH replacement upon burnout and in new const.
- ③ 100% all-electric buildings (new const. & retrofit)
- ④ 100% all-electric buildings (new const. & retrofit) & 50% of on-road VMT from EVs

Local, State & Int'l Emissions Goals

- Multiple climate targets relate to SVCE:
 - SVCE's 2021 goal to reduce emissions from 2015 levels by 30%
 - SVCE member jurisdictions' goals in their climate action plans
 - California's statewide 2020, 2030 and 2050 GHG reduction goals
 - Paris climate agreement to keep global average temperature change to <2°C*
- Analysis of SVCE's BAU emissions trajectory and a variety of program portfolios in-progress (draft BAU forecast on prior slides)
- Emissions analysis will be used to inform proposals for SVCE 2025 and 2030 emissions goals to be discussed at the December Board meeting

Strategic Framework

What will we do?



Retail Products & Services



Education & Outreach



Public Policy



Market Transformation

Which priorities will guide us?



Customer & Community Value



Emissions Impact



Scalable and Transferable



Equity in Service



Core Role for SVCE

How will we do it?



Innovative Platform



Focus on Data



Partnerships

What will we do?

- SVCE will pursue initiatives falling within the following four categories



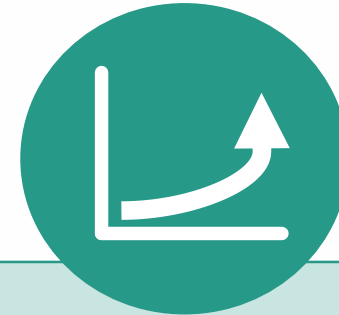
**Retail Products
& Services**



**Education &
Outreach**



**Public
Policy**



**Market
Transformation**

Which priorities will guide us?

- Activities will be prioritized based on five key principles



**Customer &
Community
Value**



**Emissions
Impact**



**Scalable &
Transferable**



**Equity in
Service**



**Core Role for
SVCE**

How will we do it?

- SVCE will carry out all activities using the following foundational principals



**Innovation
Platform**



**Focus on
Data**



Partnerships

Strategic Framework

What will we do?



Retail Products & Services



Education & Outreach



Public Policy



Market Transformation

Which priorities will guide us?



Customer & Community Value



Emissions Impact



Scalable and Transferable



Equity in Service



Core Role for SVCE

How will we do it?



Innovative Platform



Focus on Data



Partnerships

Strategic Framework



Retail Products & Services



Education & Outreach



Public Policy



Market Transformation

Achieve a sustainable, affordable & carbon-free electric supply portfolio	Increase public awareness	Expand state policy activity to support decarbonization	Support innovative business models and financing
Design and implement rates and rate products to meet customer needs	Develop educational resources	Remove municipal barriers for electrification	Aggregate purchasing power to influence market development
Promote products and services to electrify new construction and existing buildings	Build community trust	Enhance coordination across local and regional jurisdictions	Shape the start-up innovation ecosystem
Promote products and services to electrify mobility	Support clean energy workforce development	Support member agencies in decarbonizing	Partner with academia and national labs on research

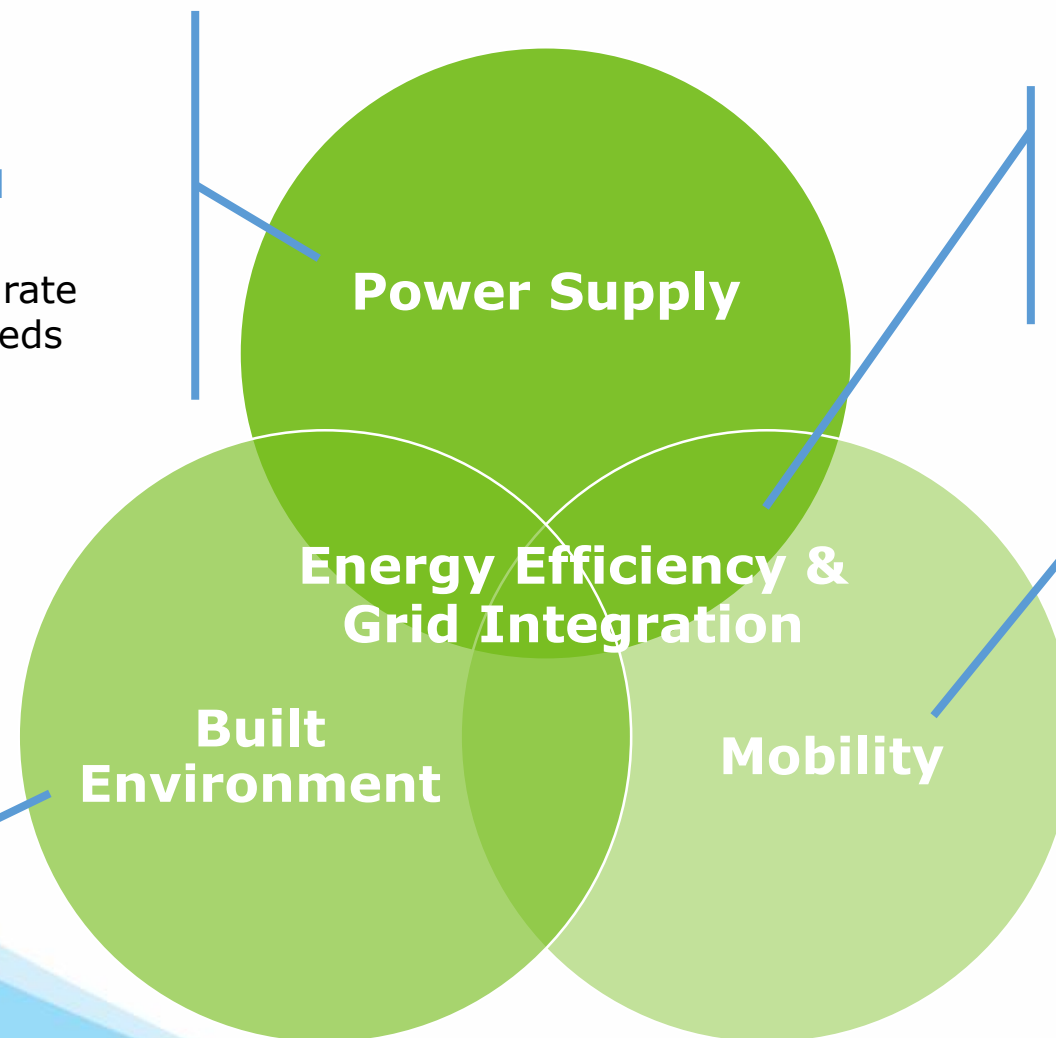
Roadmap



Program Activity Areas

Legend
CPAG Outcome/Support
MAWG Outcome/Support
CPAG/MAWG Outcome/Support

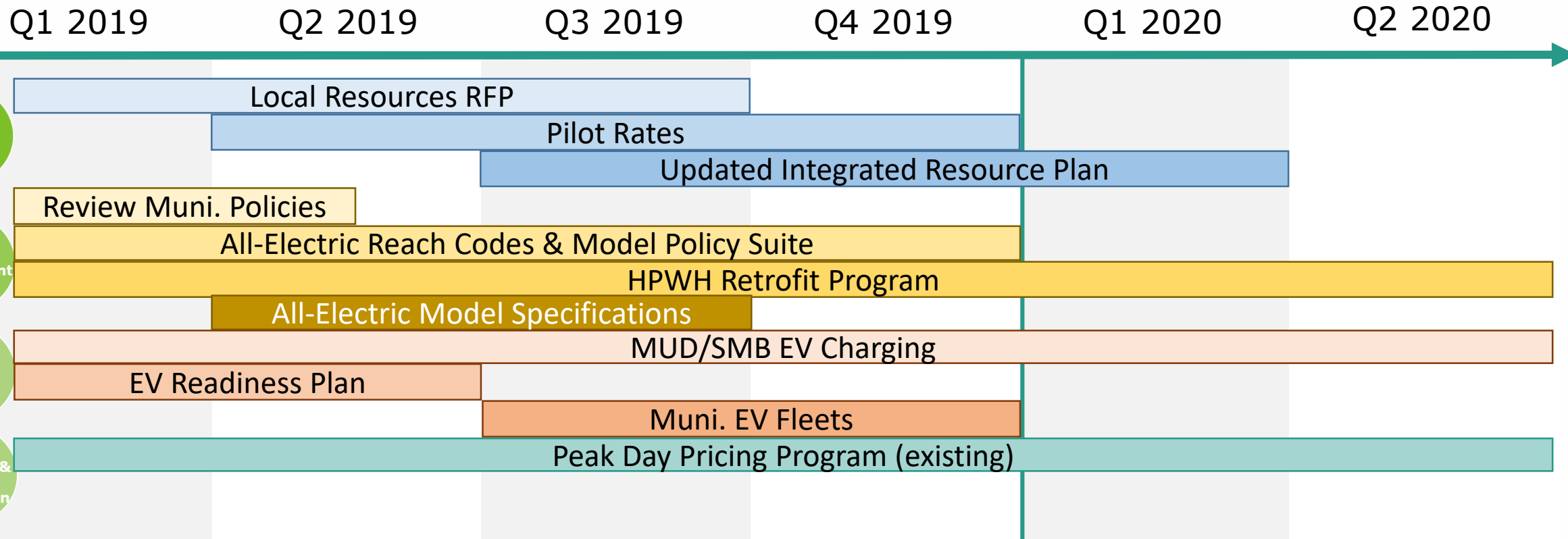
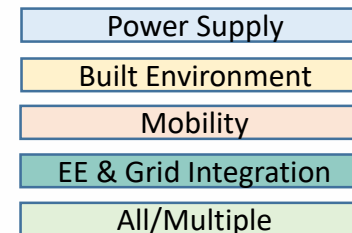
- Seek community input in the development of an integrated resource plan
- Issue RFP for local, distributed energy resources
- Develop and implement novel rate products to meet customer needs and support the grid
- Review and remove barriers to electrification in existing municipal policies
- Develop 2019 all-electric building codes and a suite of model complementary policies
- Develop model specifications for all-electric homes and businesses
- Launch heat pump water heater retrofit program
- Expand state policy activities in support of building decarbonization



- “Peak Day Pricing” program for C&I (existing program)
 - Promote non-SVCE efficiency programs that are available to our customers
 - Carry out community-wide EV readiness and infrastructure plan
 - Address market gaps in multi-family and mixed use commercial EV charging
 - Work with member agencies to electrify their vehicle fleets
- Other**
- Develop an innovation platform
 - Customer resource center
 - Community engagement grants
 - Flagship program

18-Month Timeline

Legend



Ongoing

- Develop an innovation platform
- Community engagement grants
- Expand state policy activities in support of building decarbonization
- Flagship program development
- Partner with academia and national labs on research

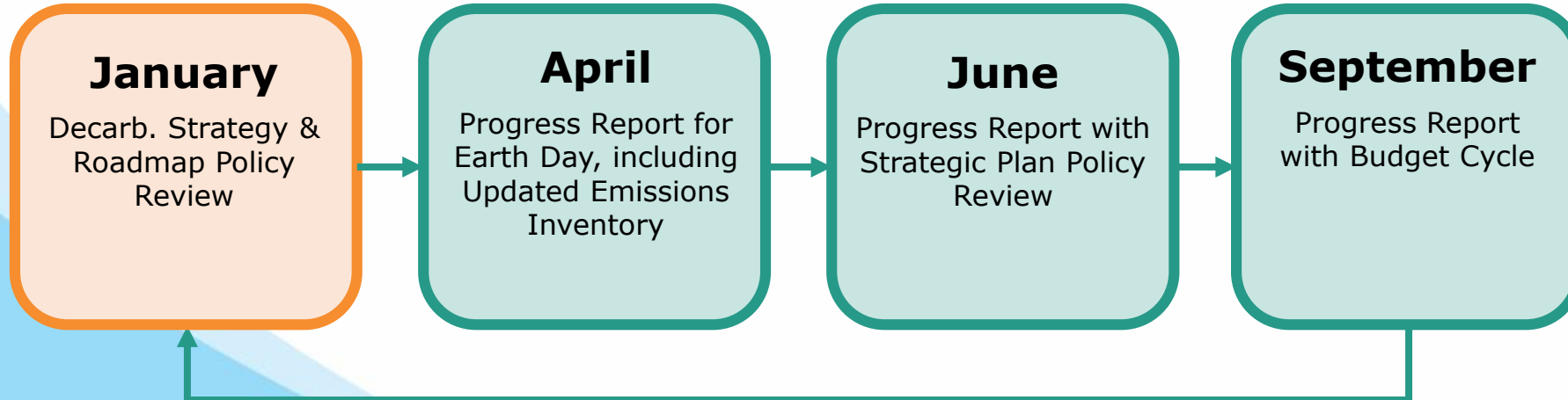
Resources

- Current financial resources for programs are 2% of operating revenues (approx. \$5-5.5M/year historically)
- Changing policy and regulatory landscape leading to significant uncertainty in revenue, and therefore programs budget
- A budget proposal and alternatives focused on leveraging finite funds will be presented in Dec. 2018 with the final roadmap
- Staff will also continue to pursue supplemental resources from:
 - Bay Area Air Quality Management District
 - CARB's Low Carbon Fuel Standard program
 - CEC Electric Program Investment Charge
 - Public benefits funds administered through CPUC
 - U.S. Department of Energy
 - Academia, national labs and foundations
 - Private sector partnerships



Progress Reports & Policy Review

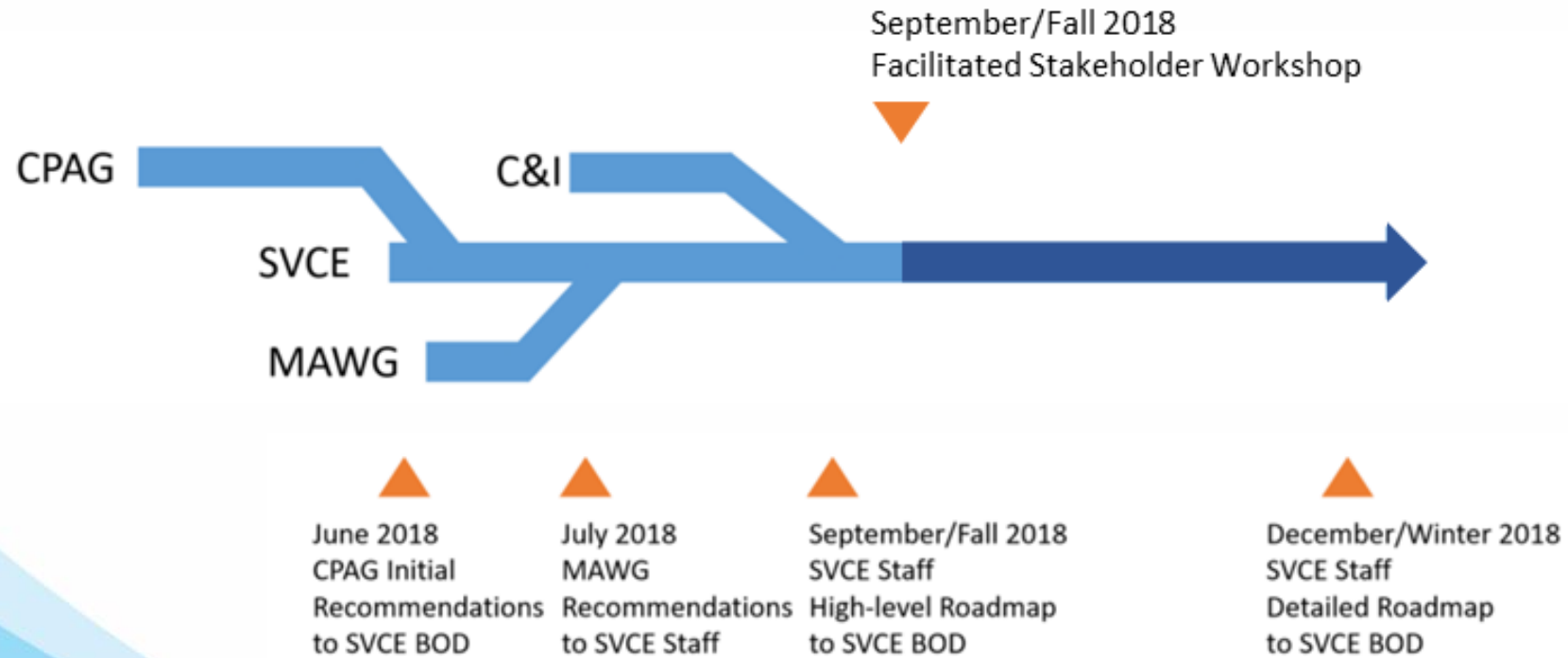
- **Progress reports** provided to the Board on a roughly quarterly basis, in concert with ongoing review cycles
- **Policy review** brought to the Board on a roughly annual basis at the start of the year



Next Steps



Next Steps



What you will see in December

- Completed emissions trajectory analysis
- Proposals and alternatives for:
 - Post-2021 SVCE emissions reduction targets
 - 18-month and 3-year roadmap of programs portfolio
 - Resources for executing the roadmap
 - Progress reports & policy review frequency
- Draft decarbonization strategy and roadmap communications toolkit*

*To be finalized upon Board review and approval of decarbonization strategy and roadmap





Thank You



Customer Program Advisory Group

September, 2018

Agenda

- 4) SVCE Customer Preferences Survey Results (Discussion)
- 5) SVCE's Customer Resource Center (Discussion)
- 6) Resource Center Success Breakout Group Responses (Discussion)

Agenda

- 4) **SVCE Customer Preferences Survey Results (Discussion)**
- 5) SVCE's Customer Resource Center (Discussion)
- 6) Resource Center Success Breakout Group Responses (Discussion)

Customer Preferences Survey

Motivation & Goals

- **SVCE Strategic Plan goals**
 - *"Create a customer-centric culture"*
 - *"Cultivate relationships with and bring customer value to all segments of the communities we serve"*
 - *"Build awareness and trust"*
- **Survey goals**
 - Develop residential market segmentation and identify customer 'personas' for use in:
 - Targeted marketing and messaging
 - Planning and delivery of successful decarbonization programs
 - Begin building a customer communication channel via email (*SVCE is among the first CCAs to do so*)

Survey Method

- Brief preference survey
 - Sent to 4,500 randomly-selected residential customers, via email
 - Incentive included:
 - Customers entered into a drawing for \$100 off the generation portion of their energy bill
 - Customers can unsubscribe from future marketing correspondence should they wish



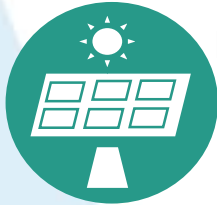
Results



	Total	%
Opens	1,625	36
Responses	215	5
Opt-outs	89	2
Newsletter sign ups	86	2

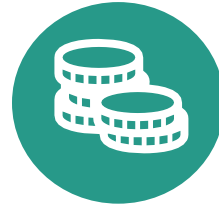
- 5 Initial Personas Emerging

Initial Personas Emerging



Energy Nerd

- i. Mobile-enabled
- ii. Highly educated
- iii. Higher income
- iv. NEM customer
- v. Single-family homeowner
- vi. EV driver/early adopter



Skeptics

- i. Older
- ii. Risk averse/wary of Big Brother
- iii. Rely on traditional media
- iv. Homeowners
- v. Concerned about energy bill/price sensitive
- vi. Climate skeptic or neutral



Climate Warrior

- i. Protecting the environment a top priority
- ii. Big picture oriented
- iii. Community engagement important



Passive

- i. Not prone to action or engagement
- ii. "Somewhat interested" responses, if any
- iii. Have not taken action
- iv. Bill set to autopay
- v. Less educated in climate change



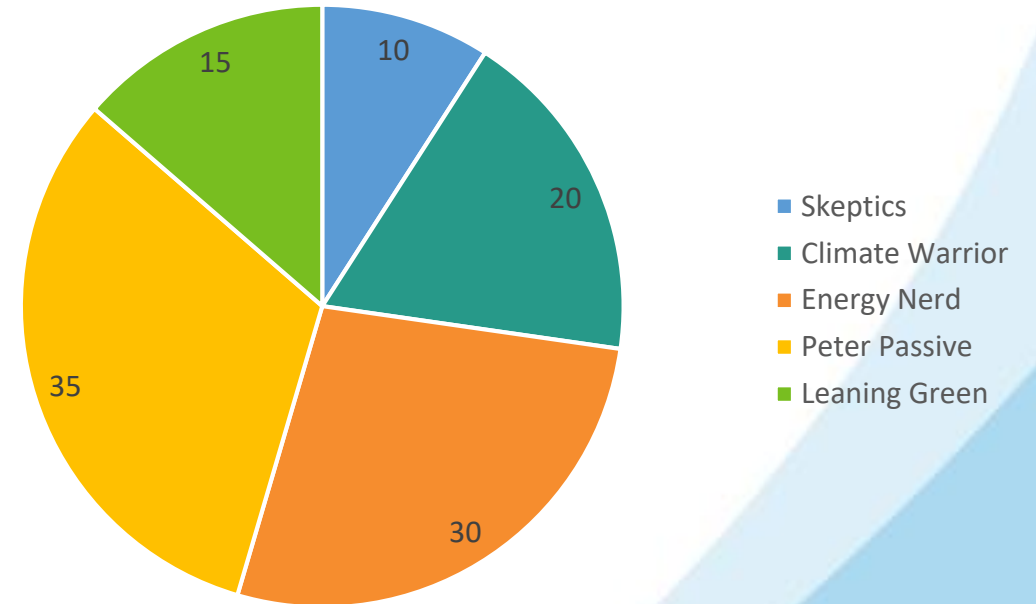
Leaning Green

- i. College educated
- ii. Cares about the environment
- iii. Too busy to take action
- iv. Energy is not top-of-mind

Future Work

- Additional survey distribution
- Further definition and quantification of personas
- Develop targeted messaging and content that

Persona Allocation



Questions?

Agenda

- 4) SVCE Customer Preferences Survey Results (Discussion)
- 5) **SVCE's Customer Resource Center (Discussion)**
- 6) Resource Center Success Breakout Group Responses (Discussion)

Existing Technologies and Program Experience

Residential Electricity Monitoring	Electricity Bill Explorer
<ul style="list-style-type: none">• Sense	<ul style="list-style-type: none">• HEA
<ul style="list-style-type: none">• Rainforest	<ul style="list-style-type: none">• OPower
<ul style="list-style-type: none">• TED	<ul style="list-style-type: none">• PG&E Rate Comparison Tool
<ul style="list-style-type: none">• Bidgely	<ul style="list-style-type: none">• PG&E My Energy

BE Ready

Residential BE Ready Program (*SF + MF variants*)

Increase readiness for planned, economic migration from fossil-fuel use to efficient, clean electricity (“Beneficial Electrification”) use in residential homes. (*Two variants to address both Single-Family and Multi-Family homes.*)



SVCE Resource Center Guiding Principles & Priorities

- Empower and encourage decarbonization, electrification & energy efficiency
 - Customer engagement
 - Education

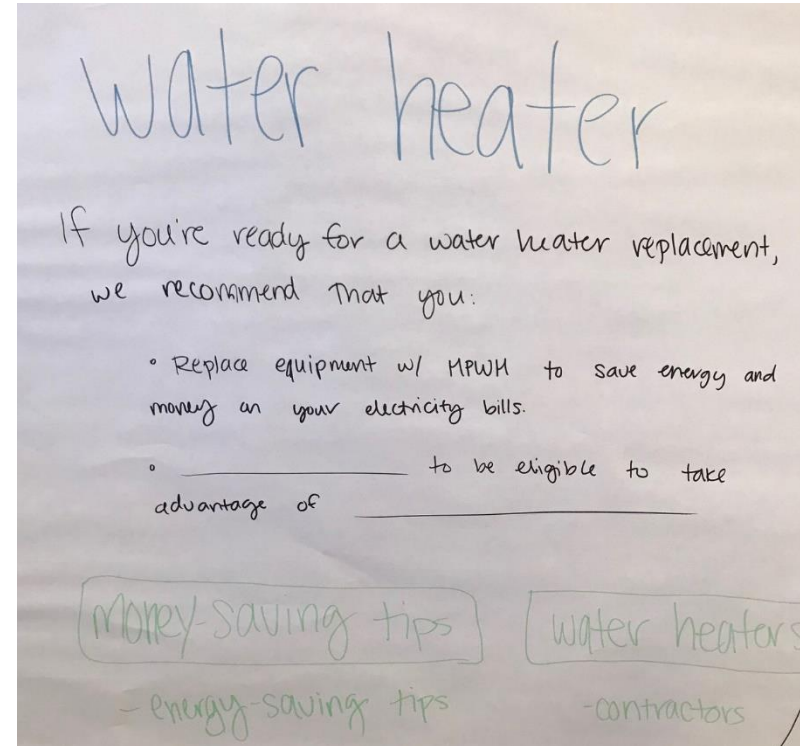
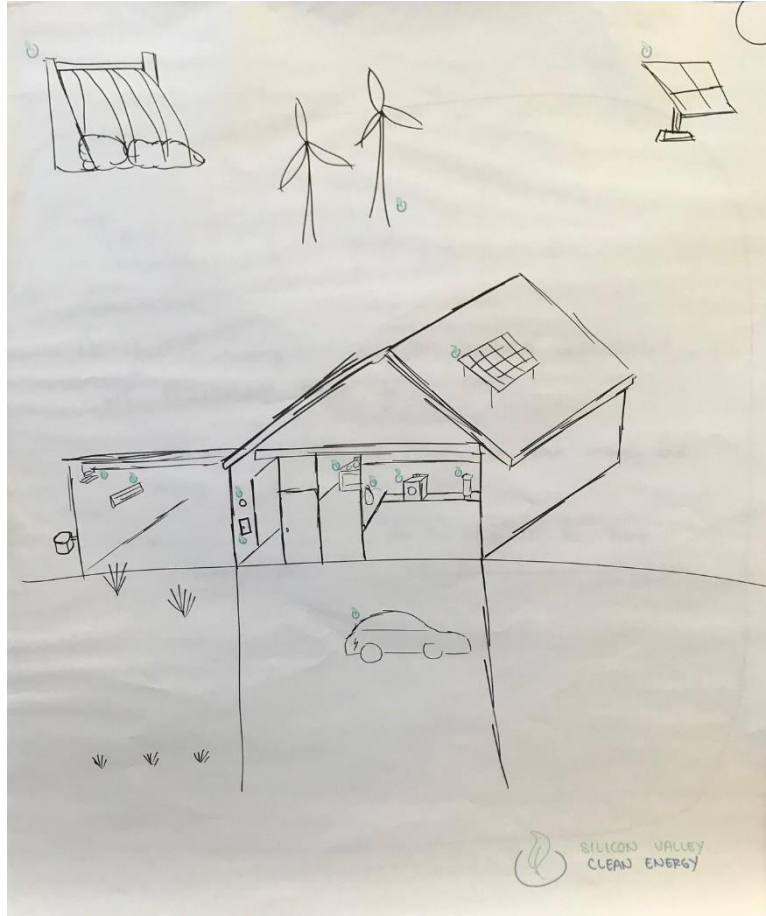


Design Inspiration

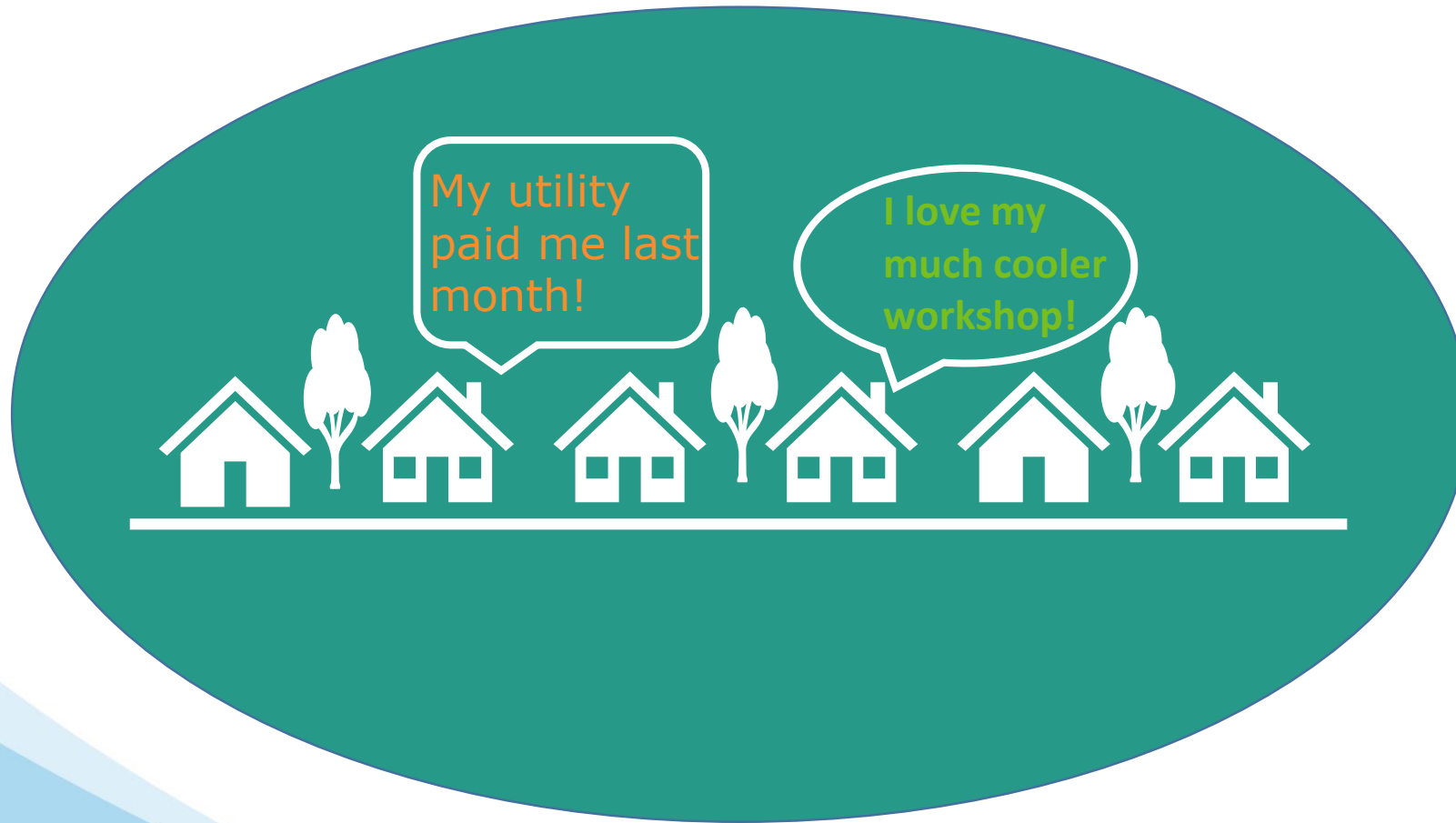
Future fit home design

- Iterative phases, living place
- Version 2.0 – RFP/partnership opportunity
 - Platform/application design
 - Data-driven tool to present GHG/cost-savings to customers
 - Work with HEA, Yellowtin, etc.

Design Inspiration



Design Inspiration



Agenda

- 4) SVCE Customer Preferences Survey Results (Discussion)
- 5) SVCE's Customer Resource Center (Discussion)
- 6) **Resource Center Success Breakout Group Responses (Discussion)**

How might we engage people to increase user interaction, and keep them coming back?

Which features need to be available upon initial launch, and which could come later?

Questions?