



**REGULAR MEETING of the Board of Directors of the
Peninsula Clean Energy Authority (PCEA)
Thursday, January 23, 2020
6:30 pm**

Peninsula Clean Energy, 2075 Woodside Road,
Redwood City, CA 94061

Meetings are accessible to people with disabilities. Individuals who need special assistance or a disability-related modification or accommodation (including auxiliary aids or services) to participate in this meeting, or who have a disability and wish to request an alternative format for the agenda, meeting notice, agenda packet or other writings that may be distributed at the meeting, should contact Anne Bartoletti, Board Clerk, at least 2 working days before the meeting at abartoletti@peninsulacleanenergy.com. Notification in advance of the meeting will enable the PCEA to make reasonable arrangements to ensure accessibility to this meeting and the materials related to it. Attendees to this meeting are reminded that other attendees may be sensitive to various chemical based products.

If you wish to speak to the Board, please fill out a speaker's slip located on the tables as you enter the Board meeting room. If you have anything that you wish to be distributed to the Board and included in the official record, please hand it to a member of PCEA staff who will distribute the information to the Board members and other staff.

CALL TO ORDER / ROLL CALL

PUBLIC COMMENT

This item is reserved for persons wishing to address the Board on any PCEA-related matters that are as follows: 1) Not otherwise on this meeting agenda; 2) Listed on the Consent Agenda and/or Closed Session Agenda; 3) Chief Executive Officer's or Staff Report on the Regular Agenda; or 4) Board Members' Reports on the Regular Agenda. Public comments on matters not listed above shall be heard at the time the matter is called.

As with all public comment, members of the public who wish to address the Board are requested to complete a speaker's slip and provide it to PCEA staff. Speakers are customarily limited to two minutes, but an extension can be provided to you at the discretion of the Board Chair.

ACTION TO SET AGENDA and TO APPROVE CONSENT AGENDA ITEMS

This item is to set the final consent and regular agenda, and for the approval of the items listed on the consent agenda. All items on the consent agenda are approved by one action.

REGULAR AGENDA

1. Chair Report (Discussion)
2. CEO Report (Discussion)
3. Citizens Advisory Committee Report (Discussion)
4. Approve Peninsula Clean Energy Policy regarding potential PG&E allocation of GHG-free (Large Hydro and Nuclear) resources to CCAs (Community Choice Aggregators) (Action)
5. Approve Resiliency Strategy (Action)
6. Approve Reach Code Assistance Extension and Consumer Building Electrification Awareness Program (Action)
7. Approve Amendment to Energy Supply Procurement Authority Policy 15 (Action)
8. Board Members' Reports (Discussion)

CONSENT AGENDA

9. Approval of the Minutes for the December 19, 2019 Meeting (Action)

INFORMATION ONLY REPORTS

10. Marketing and Outreach Report
11. Regulatory and Legislative Report
12. Community Energy Programs Report
13. Procurement Report

Public records that relate to any item on the open session agenda for a regular board meeting are available for public inspection. Those records that are distributed less than 72 hours prior to the meeting are available for public inspection at the same time they are distributed to all members, or a majority of the members of the Board. The Board has designated the Peninsula Clean Energy office, located at 2075 Woodside Road, Redwood City, CA 94061, for the purpose of making those public records available for inspection. The documents are also available on the PCEA's Internet Web site. The website is located at:

<http://www.peninsulacleanenergy.com>.



**PENINSULA CLEAN ENERGY AUTHORITY
Board Correspondence**

DATE: January 16, 2020
BOARD MEETING DATE: January 23, 2020
SPECIAL NOTICE/HEARING: None
VOTE REQUIRED: None

TO: Honorable Peninsula Clean Energy Authority (PCE) Board of Directors
FROM: Jan Pepper, Chief Executive Officer
SUBJECT: CEO Report

REPORT:

PCE Staffing Update

We are excited to announce three new additions to the PCE team in December:

- Sara Maatta, Renewable Energy & Compliance Analyst, started Jan 9
- Michael Arnaldo, Digital Marketing Specialist, will start Jan 27
- We have extended an offer for a Senior Renewable Energy Analyst

We will keep you posted about any new openings.

PCE Strategic Planning Activities

The Strategic Planning Board Retreat was held on Saturday, January 11, 2020 at the Orrick offices in Menlo Park. The retreat was well attended by Board members and Alternates, members of the Citizens Advisory Committee, staff, and members of the public. The Gallagher Consulting Group (GCG) facilitated the event, which included several break-out sessions and exercises. GCG is in the process of compiling the data and will provide a summary to staff in time for a Senior Staff Strategic Planning Retreat in February. GCG will then develop a draft plan document to review with the Strategic Planning Subcommittee in mid to late February, so that the plan can be reviewed by the Board in March.

Meetings with Board Members and City Managers

We are in the process of receiving updates from each city on their appointments to the Board of Directors. We will be reaching out to begin scheduling 2020 meetings with Board members, Alternates, and the City Managers.

Other Meetings and Events Attended by CEO

Participated in a meeting with Assemblymember Berman and SVCE on December 18

Attended the Burlingame Chamber Annual Meeting on January 10.

Presented on the CPX Webinar on CCAs & Resilience on January 16.

Presented at the Infocast conference on CCAs on the effect of the PG&E Bankruptcy on CCAs on January 23.



**PENINSULA CLEAN ENERGY
JPA Board Correspondence**

DATE: January 17, 2020
BOARD MEETING DATE: January 23, 2020
SPECIAL NOTICE/HEARING: None
VOTE REQUIRED: Majority Vote

TO: Honorable Peninsula Clean Energy Authority Board of Directors

FROM: Jan Pepper, Chief Executive Officer, Peninsula Clean Energy

SUBJECT: Approve Peninsula Clean Energy Policy regarding potential PG&E allocation of GHG-free (Large Hydro and Nuclear) resources to CCAs (Community Choice Aggregators) (Action)

RECOMMENDATION:

Direct Peninsula Clean Energy staff to accept the large hydro allocations from PG&E, but not to accept the nuclear allocations.

DISCUSSION

Peninsula Clean Energy has set a goal for 2020 to serve customers with 95% GHG-free energy. Fifty percent of PCE's GHG-free energy portfolio are resources that qualify as renewable energy under the state's renewable portfolio standard program (RPS) and 45% are resources that do not qualify under the RPS, but are considered GHG-free. Large hydro and nuclear do not emit any GHG emissions, but don't qualify under the state's RPS. Peninsula Clean Energy has procured all of the renewable resources that we expect are required for this target. We have procured 23% of the 45% of GHG-free resources. We need to procure an additional 22% of GHG-free resources. As additional CCAs have started operating with their own GHG-free targets, we have seen the market for GHG-free resources become tighter and the cost has increased.

PG&E owns or contracts for a number of GHG-free resources (including large hydro and nuclear from Diablo Canyon Power Plant). PG&E has been able to count these resources on its power content label (PCL) to meet its GHG-free targets. Load serving entities (LSEs), on the other hand, have been paying for those same assets through PCIA, yet do not receive any of the GHG-free benefits through the PCL.

In mid-2019, CCAs approached PG&E to discuss whether PG&E would be agreeable to selling energy from their large hydro facilities.¹ PG&E ultimately refused to make sales in 2019, but subsequently approached CCAs and offered to allocate GHG-free resources (nuclear and large hydro) to CCAs and other eligible load serving entities (LSEs).

There is a separate, similar effort occurring in the Power Charge Indifference Adjustment (PCIA) Phase 2 Working Group 3 (WG 3) that is focusing on the allocation of GHG-free energy, among other things. Since the PCIA effort is expected to take effect in 2021, the allocation we are discussing here is meant as an **interim approach for 2020 only** until PCIA decisions are finalized. Both the PCIA proposal and the interim allocation proposal are works in progress and subject to change pending final CPUC approval.

The purpose of this memorandum is to provide background and information for the Board to discuss staff's recommendation to accept Peninsula Clean Energy's share of the large hydro allocation but not the nuclear allocation under the interim proposal for 2020 only.

Interim Proposal

The key elements of the interim proposal are:

- Limited in time to 2020
- Limited in the resources to which it applies:
 - In-state
 - Large hydroelectric
 - Nuclear
- Only available to retail suppliers whose customers pay PCIA with large hydroelectric and nuclear in their PCIA vintage
- Requires active agreement between retail suppliers to offer and to take generation
- Requires that the CPUC approve a mechanism for the allocation of such generation
- No payment required

There is no obligation to accept this allocation of GHG-free energy. An LSE can choose to accept neither resource pool, one or the other, or both.

The PCIA is a non-bypassable charge set annually by the CPUC. **The interim proposal and allocation mechanism, and whether Peninsula Clean Energy accepts an allocation, has no impact at all on PCIA charges.** Regardless of what happens with the allocation mechanism, all customers, Peninsula Clean Energy customers included, pay for, and will continue to pay for, PG&E large hydroelectric and nuclear generation costs through the PCIA.

¹ Large hydro and nuclear resources count as GHG-free on the power content label (PCL), and investor-owned utilities (IOUs) have been benefiting from counting those resources to meet their GHG-free targets. LSEs, on the other hand, have been paying for those same assets through PCIA, yet do not receive any of the GHG-free benefits through the PCL.

BACKGROUND

Under the interim proposal, PG&E will allocate to each eligible LSE its load share of large hydro (hydro pool) and/or nuclear resources (nuclear pool) based on an LSE's election. PCE accounts for approximately 4% of PG&E's share. Staff estimates that the allocation PG&E offers to Peninsula Clean Energy may contain the following:

- 300 GWh of large hydroelectric power
- 700 GWh of nuclear power

The volume that each LSE receives will ultimately depend on the volume of electricity generated by each resource pool in 2020 and the proportion of PG&E's load served by the LSE. PG&E has identified public historical production data for each resource pool and will provide ongoing allocation amounts for LSEs to forecast and keep track of allocation amounts.

This allocation is only available to an LSE (as defined in the CAISO Tariff) and that (1) has forecasted load identified in PG&E's Energy Resource Recovery Account (ERRA) Forecast Application (ERRA Forecast Departed Load) for the calendar year in which the Allocation Amount is accepted; and (2) serves customers who pay the PCIA departing load charges for the above market costs of Resources.

On December 2, 2019, PG&E filed a Tier 3 Advice Letter and requested that the CPUC issue a final resolution by February 1, 2020. The interim proposal will only become effective upon CPUC approval of this Advice Letter and will remain in effect until the earlier of the effective date of a CPUC action on the PCIA Proposal Rulemaking (R.17-06-026) ordering an alternative methodology (PCIA Decision) and December 31, 2020. In practice, this means through 2020.

Once the Advice Letter is approved and PG&E offers the allocation, the LSE has 30 days to accept its allocation of hydro and/or nuclear pool(s). Any unallocated amounts will revert back to PG&E to use or dispose as it sees fit pursuant to applicable law.

In exchange for the allocation by PG&E, the receiving LSE "will waive their ability to make petitions, arguments or filings at the CPUC or at the California State Legislature regarding PG&E not offering any allocation, sale or transfer of Carbon Free Energy or attributes for the period that the eligible LSE accepts the offer. Neither PG&E nor the eligible LSEs will be required to post credit or collateral."

PG&E will provide each LSE with an annual attestation confirming actual year-end totals of generation from the Resource Pool(s) and notify the California Energy Commission of the sale of the Product for purposes of PCL reporting.

In response to the Advice Letter, Women's Energy Matters, a non-profit consumer advocacy group located in Marin, filed a protest in which they stated that nuclear energy should not be called carbon free energy.

FISCAL IMPACT

PCE has already included the cost of procuring GHG-free resources in the budget for FY19-20 and the 5-year forecast. Accepting either allocation (hydro or nuclear) results in a savings to PCE, and not any additional costs. Assuming a very conservative estimate of \$8/MWh for GHG-free resources, the table below estimates that the savings from the large hydro allocation will be \$2.4 million and the nuclear allocation will be \$5.6 million. The decrease in demand for GHG-free resources due to this allocation may reduce the cost for procuring PCE's remaining needs for GHG-free resources in 2020.

Scenario	Allocated GHG-Free Resources	Accepted GHG-Free Resources	Effective Cost to PCE	Effective Savings for PCE
Scenario A	1,000 GWh	1,000 GWh	\$0	\$8.0 MM
Scenario B	1,000 GWh	300 GWh	\$5.6 MM	\$2.4 MM
Scenario C	1,000 GWh	0 GWh	\$8.0 MM	\$0

Scenarios to Consider

By accepting an allocation of carbon free energy from PG&E, PCE will decrease the volume of GHG-free energy we need to procure in 2020 to meet our 95% GHG-free target. We have prepared three scenarios to consider

Option A - PG&E offers carbon-free allocations up to Peninsula Clean Energy's load share percentage (~4% of PG&E load), amounting to ~1,000GWh. Peninsula Clean Energy accepts all carbon-free allocations – both hydro pool and nuclear pool.

Option B - PG&E offers carbon-free allocations up to Peninsula Clean Energy's load share percentage (~4% of PG&E load), amounting to ~1,000GWh. Peninsula Clean Energy accepts only the large hydro portion of the allocations, amounting to ~300GWh, and procures the remaining carbon-free energy in the market.

Option C - PG&E offers carbon-free allocations up to Peninsula Clean Energy's load share percentage (~4% of PG&E load), amounting to ~1,000GWh. Peninsula Clean Energy rejects allocations from both resource pools and procures the remaining carbon-free energy in the market.

Recommendation

Peninsula Clean Energy staff recommend that the Board adopt Scenario B. Peninsula Clean Energy staff brought this item to the Executive Committee for discussion on January 13, 2020. The Executive Committee members agreed to accept the large hydro allocation but were split regarding accepting the nuclear allocation.

There are a number of reasons why PCE staff recommend rejecting the nuclear allocation:

- The potential reputational risk from accepting the nuclear allocation as part of our GHG-free target is greater than the potential savings for accepting this allocation. The fact that accepting this allocation even requires a discussion indicates that this is a controversial decision.
- Although there would be some monetary savings from accepting the nuclear allocation, PCE has sufficient resources in the budget for procuring GHG-free resources without accepting this nuclear allocation.
- The Diablo Canyon nuclear plant is scheduled to be shutdown in 2024/2025; accepting this allocation could send a market signal that the output from this plant is still valued and the shutdown should not occur.
- The proposed nuclear allocation applies only to 2020, and only to generation from the existing Diablo Canyon plant. This does not reflect staff's view on considering future 21st century nuclear energy resources as part of PCE's future resource mix.
- Joseph Wiedman reached out to numerous stakeholders in the community and CCA movement including members of the Citizens Advisory Committee, local state electeds and other CCAs considering the issue. The responses were mixed but generally landed on not accepting the nuclear power because it was not seen as consistent with PCE's goal to be 100% renewable energy powered and because nuclear is not considered a clean fuel source.



**PENINSULA CLEAN ENERGY
JPA Board Correspondence**

DATE: January 17, 2020
BOARD MEETING DATE: January 23, 2020
SPECIAL NOTICE/HEARING: None
VOTE REQUIRED: Majority Vote

TO: Honorable Peninsula Clean Energy Authority Board of Directors
FROM: Jan Pepper, Chief Executive Officer, Peninsula Clean Energy
SUBJECT: Peninsula Clean Energy Resiliency Strategy

RECOMMENDATION

Approve three-year \$10 million strategy for local electricity resiliency programs.

DISCUSSION

At the Board of Directors meeting on October 21, 2019, the Board approved development of a plan to invest up to \$10 million over three years towards programs that address the problems created by Public Safety Power Shutoffs (PSPS) events and natural disasters that can impact our customers access to electricity. Staff have created a document that identifies a strategy and budget for how this commitment would be used to develop programs, accelerate regulatory changes, and outreach to community partners. Attached to this memo is a Resiliency Strategy that defines how Peninsula Clean Energy is well positioned to help drive systematic change to ensure our communities are resilient.

Staff recommends a Board commitment of \$10 million over three years to programs that address the problems created by these types of PSPS events. Staff will develop programs addressing the high-level priorities outlined below and bring them to the Board for approval.

BACKGROUND

In Spring 2019, Pacific Gas and Electric Company (PG&E) announced that it would expand its PSPS program in order to prevent wildfires across the state. A PSPS event occurs when PG&E decides it is necessary to turn off electricity in certain areas because dry conditions and gusty wind have created a heightened fire risk. The expansion of this program can put lives at risk, cause significant economic impacts, disrupt operations as well as increase greenhouse gas (GHG) emissions and worsen local air quality. In addition to PSPS events, the Bay Area is vulnerable to natural disasters, including floods, wildfires, and earthquakes, which can all threaten safety and access to power.

Currently, the most common electricity back-up option in the event of a power outage is a diesel fuel generator, which has significant air quality and safety impacts. In addition, diesel fuel availability may be very difficult to obtain in a major emergency which could limit the generator's usefulness. Fortunately, there are reliable, clean, and economic alternatives to diesel generators for energy resiliency, namely solar photovoltaic (PV) systems paired with energy storage systems, commonly referred to as microgrids. PV systems with storage have the added value of reducing utility bills for a home or business through net energy metering, reducing overall consumption from the grid, and shifting consumption of grid supplied energy to cheaper time periods.

Peninsula Clean Energy has identified four strategic objectives for the timeline of this strategy:

1. Provide solutions to the most threatened customers ahead of the next fire season in late summer 2020.
2. Leverage resilience programs towards Peninsula Clean Energy's goal to be 100% renewable on an hourly basis.
3. Establish a business model for ongoing energy resiliency.
4. Identify opportunities to create a paradigm shift towards more integrated and pervasive energy resiliency over the longer term.

To meet these objectives, and in consultation with local community groups, we have identified the following three priority program areas:

1. Backup generation to medically fragile residential customers;
2. Community-scale emergency response centers outfitted with energy resiliency; and

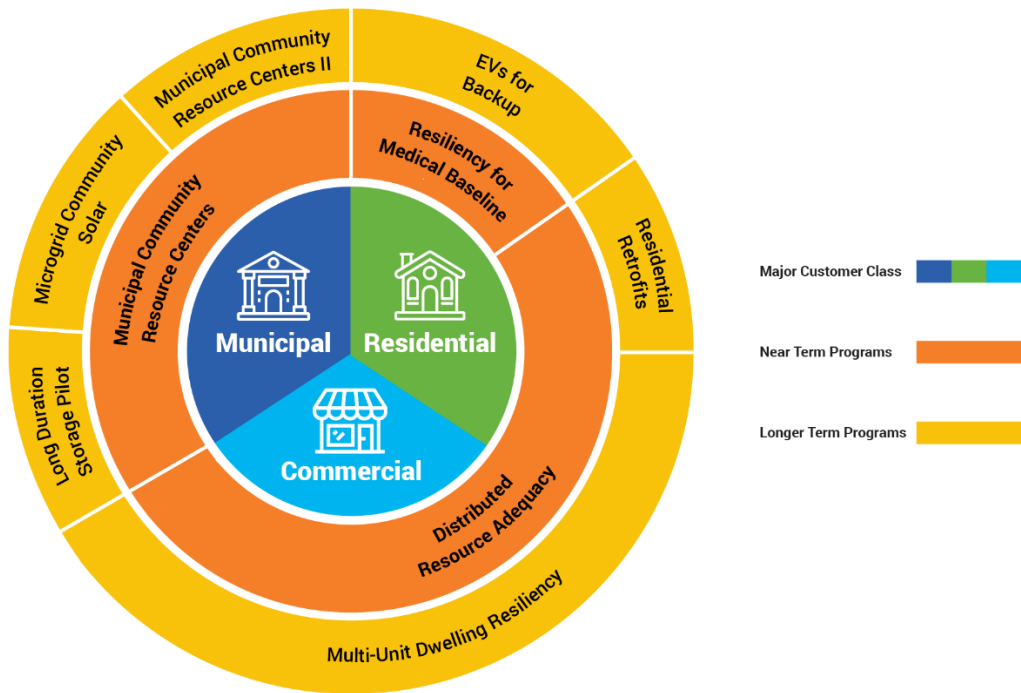
3. Critical infrastructure such as police/fire stations, hospitals and other healthcare facilities, communications facilities that support emergency first responders, and wastewater / sewage / water pumping facilities, transportation infrastructure.

Peninsula Clean Energy is well-positioned to facilitate programs to increase energy resiliency in San Mateo County due to its role as a public agency, its connection to customers and its position in the electricity market. Peninsula Clean Energy can employ a variety of mechanisms for this facilitation, ranging from direct incentives to education to electricity rate structures. We have identified programs across the priority areas identified above to meet our strategic objectives for this resiliency strategy.

Figure 1 identifies which programs align with each priority area and **Error! Reference source not found.** provides a short description of each program in development.

Figure 1: Priorities Areas and Programs

**PENINSULA CLEAN ENERGY
MAJOR RESILIENCE PROGRAMS BY CUSTOMER CLASS**



FISCAL IMPACT

In order to fund the development of these efforts, Peninsula Clean Energy is budgeting approximately \$10MM over three years to launch and implement the programs described above. Table 1 below provides a summary of the budget by program area. This is a high-level summary of the expected expenditures. There will be more

explanation about the budget at the January Board of Directors meeting. Any actual budget commitments would need to be approved by Peninsula Clean Energy's Board in accordance with our policies.

Table 1: Budget Summary by Program

	FY-2020	FY-2021	FY-2022	Totals
Medically Fragile Customers	\$ 500,000	\$ 1,010,000	\$ 1,040,000	\$ 2,550,000
Municipal CRCs	\$ 150,000	\$ 1,150,000	\$ 1,240,000	\$ 2,540,000
Distributed Resource Adequacy	\$ 120,000	\$ 900,000	\$ 800,000	\$ 1,820,000
Critical Infrastructure Programs		\$ 200,000	\$ 300,000	\$ 500,000
Customer Education	\$ 30,000	\$ 50,000	\$ 30,000	\$ 110,000
Future Programs		\$ 860,000	\$ 1,880,000	\$ 2,740,000
FY Totals	\$ 800,000	\$ 4,170,000	\$ 5,290,000	\$ 10,260,000

Attachment: Peninsula Clean Energy Resiliency Strategy

Peninsula Clean Energy Resiliency Strategy

January 17, 2019

Executive Summary

This strategy document outlines Peninsula Clean Energy Authority's (Peninsula Clean Energy) planning for programs to provide energy resiliency in the event of grid outages related to natural disasters or Public Safety Power Shutoff (PSPS) events.

Peninsula Clean Energy is San Mateo County's official electricity provider. It is a local public agency, controlled by the communities it serves, that provides all electric customers in San Mateo County with cleaner electricity at lower rates than those charged by the local incumbent utility. Peninsula Clean Energy saves customers an estimated \$18 million a year. Peninsula Clean Energy, formed in March 2016, is a joint powers authority made up of the County of San Mateo and all 20 cities and towns in the County. The agency serves approximately 290,000 accounts. Peninsula Clean Energy is governed by a Board of Directors comprised of one representative from each of the twenty cities in San Mateo County, two representatives from the County Board of Supervisors and two emeritus Board representatives.

1. Background

In Spring 2019, Pacific Gas and Electric Company (PG&E) announced that it would expand its PSPS program in order to prevent wildfires across the state. A PSPS event occurs when PG&E decides it is necessary to turn off electricity in certain areas because dry conditions and gusty winds have created a heightened fire risk. The expansion of this program can put lives at risk, cause significant economic impacts, disrupt operations as well as increase greenhouse gas (GHG) emissions and worsen local air quality when diesel generators are operated for backup power. In addition to PSPS events, the Bay Area is vulnerable to natural disasters, including floods, wildfires, and earthquakes, which can all threaten safety and access to power.

Currently, the most common electricity back-up option in the event of a power outage is a diesel fuel generator, which has significant air quality and safety impacts. In addition, diesel fuel availability may be very difficult to obtain in a major emergency which could limit the generator's usefulness. Fortunately, there are reliable, clean, and economic alternatives to diesel generators for energy resiliency, namely solar photovoltaic (PV) systems paired with energy storage systems, commonly referred to as microgrids. PV systems with storage have the added value of reducing utility bills for a home or business through net energy metering (NEM), reducing overall consumption from the grid, and shifting consumption of grid supplied energy from higher priced peak hours to lower priced off-peak hours.

At the Board of Directors meeting on October 21, 2019, the Board approved development of a plan to invest up to \$10 million over three years towards programs that address the problems created by PSPS events and natural disasters that can impact Peninsula Clean Energy's customers access to electricity. This document identifies a strategy and budget for how this commitment would be used to develop programs, accelerate regulatory changes, and outreach to community partners. It defines how Peninsula Clean Energy is well positioned to help drive systematic change to ensure our communities are resilient.

2. Priorities

Energy resiliency means energy consumers have access to safe and affordable clean energy vital to maintaining wellbeing, productivity, and essential needs, even in the face of a grid failure. Through the programs described below, Peninsula Clean Energy is committed to supporting customers who may be especially sensitive to the impacts of a loss of power. This may include medically threatened or low-income residents or businesses in areas with a high concentration of these customers.

Peninsula Clean Energy has identified four strategic objectives for the timeline of this strategy:

1. Provide solutions to the most threatened customers ahead of the start of the next fire season in late summer 2020.
2. Leverage resilience programs towards Peninsula Clean Energy's goal to be 100% renewable on an hourly basis.
3. Establish a business model for ongoing energy resiliency.
4. Identify opportunities to create a paradigm shift towards more integrated and pervasive energy resiliency over the longer term.

In consultation with local community groups, we have identified the following three priority program areas to meet these objectives:

1. Backup generation to medically fragile residential customers;
2. Community-scale emergency response centers outfitted with energy resiliency; and
3. Critical infrastructure such as police/fire stations, hospitals and other healthcare facilities, communications facilities that support emergency first responders, and wastewater / sewage / water pumping facilities, transportation infrastructure.

Finally, we recognize that the scale and need for resiliency will require resources and planning over a time horizon beyond what is outlined in this strategy. The initial programs that are deployed as part of this strategy will help to inform how to approach resiliency over the longer term. The lessons learned and opportunities identified will inform Peninsula Clean Energy's ongoing resiliency strategy, and the insights will be shared with other community choice aggregators (CCAs) and other load serving entities (LSEs) as well as with regulators and policy makers to identify and remove barriers to the development of a more resilient electricity system.

3. Solutions

Peninsula Clean Energy is well-positioned to facilitate programs to increase energy resiliency in San Mateo County due to its role as a public agency, its connection to customers and its position in the electricity market. Peninsula Clean Energy can employ a variety of mechanisms for this facilitation, ranging from direct incentives to education to electricity rate structures. We have identified programs across the priority areas identified above to meet our strategic objectives for this resiliency strategy.

Figure 1 identifies which programs align with each priority area and Table 1 provides a short description of each program in development.

Figure 1: Priorities Areas and Programs

PENINSULA CLEAN ENERGY MAJOR RESILIENCE PROGRAMS BY CUSTOMER CLASS



Table 1: Description of Programs

Program	Summary
Medically Fragile Customers	Microgrids for customers who are medically threatened and live in high fire threat districts; Hospital partnerships to identify customers with medical needs - coordinate with East Bay Community Energy (EBCE)
Municipal Community Resiliency Centers (CRC)	Scope and deploy clean backup power CRCs – (includes BAAQMD funded joint project with EBCE)
Critical Infrastructure	Identify and catalog the existing critical facilities in our service territory to inform future resiliency programs
Distributed Resource Adequacy (RA)	Microgrids for residential and commercial customers; local/distributed RA procurement for Peninsula Clean Energy

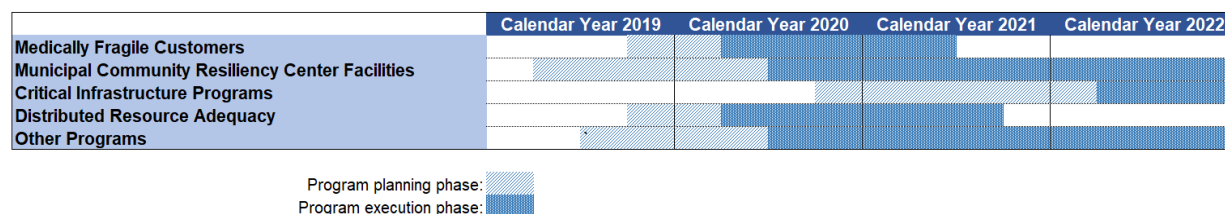
Table 2 describes the expected outcomes in terms of megawatt (MW) and megawatt hour (MWh) deployed and customers impacted by these programs.

Table 2: Summary of Expected Program Outcomes

Program	MW	Customers
Medically Fragile Customers	4 MW Solar / 16 MWh Storage	675
Municipal CRCs	5.8 MW Solar / 23 MWh Storage	9,000 – 18,000
Critical Infrastructure	TBD	TBD
Distributed RA	40 MWh Storage	900

Figure 2 outlines the expected timeline for program deployment including planning and execution phases.

Figure 2: Resiliency Programs Timeline 2019 - 2022



Peninsula Clean Energy is budgeting up to \$10MM over three years to launch and implement the programs described above. Table 3 below provides a summary of the budget by program area.

This is a high-level summary of the expected expenditures. Any actual budget commitments would need to be approved by Peninsula Clean Energy's Board in accordance with our policies. For Fiscal Year 2020 (FY2020), the budget will be allocated from a portion of the Programs budget, which is not expected to be used during the current fiscal year. In future fiscal years, these programs will follow Peninsula Clean Energy's normal budgeting process. For some budget areas, such as Power Procurement, the budget does not change, but the technologies utilized for procuring different resources as described in this document, are changed. Similarly, budgets planned for Program Administration and Marketing and Outreach may not change significantly, but rather be allocated to reflect this emphasis on these programs. In all cases, more details for funding for each particular program will be brought to the board for approval as they are launched.

In developing programs to support energy resiliency, Peninsula Clean Energy will leverage third party funding in addition to Peninsula Clean Energy's funds. The Appendix identifies third party

funding sources that we have currently identified. As we develop and refine programs, we will continue to work to identify funding sources that can be leveraged for these efforts.

Table 3: Budget Summary by Program

	FY-2020	FY-2021	FY-2022	Totals
Medically Fragile Customers	\$ 500,000	\$ 1,010,000	\$ 1,040,000	\$ 2,550,000
Municipal CRCs	\$ 150,000	\$ 1,150,000	\$ 1,240,000	\$ 2,540,000
Distributed Resource Adequacy	\$ 120,000	\$ 900,000	\$ 800,000	\$ 1,820,000
Critical Infrastructure Programs		\$ 200,000	\$ 300,000	\$ 500,000
Customer Education	\$ 30,000	\$ 50,000	\$ 30,000	\$ 110,000
Future Programs		\$ 860,000	\$ 1,880,000	\$ 2,740,000
FY Totals	\$ 800,000	\$ 4,170,000	\$ 5,290,000	\$ 10,260,000

4. Implementation

Successful implementation of our energy resiliency efforts will require consideration of customer awareness and outreach as well as identification of regulatory and legislative barriers and strategies to remove or overcome these barriers.

An important aspect of deploying any program is ensuring that customers are aware of the program and its benefits. A portion of this outreach and communication will be conducted by Peninsula Clean Energy through direct outreach to customers. In certain cases, we will also partner with community organizations that have strong ties to engage targeted segments of our customer base that are traditionally more difficult to reach including the elderly, non-English speakers, those with physical and mental disabilities, and the medically fragile.

A second part of this resiliency strategy will focus on identifying regulatory or legislative barriers to deploying distributed energy resources (DERs) for energy resiliency and working to remove or overcome these barriers. We are currently working in two specific areas – community microgrids and RA. Presently, widescale deployment of community-scale microgrids is inhibited by regulatory barriers. Peninsula Clean Energy is very active in regulatory proceedings to ensure CCAs have a clear and positive role in facilitating deployment of microgrids in their communities.

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I. Introduction

This strategy document outlines Peninsula Clean Energy Authority's (Peninsula Clean Energy) planning for programs to provide energy resiliency in the event of grid outages related to natural disasters or Public Safety Power Shutoff (PSPS) events.

Peninsula Clean Energy is San Mateo County's official electricity provider. It is a local public agency, controlled by the communities it serves, that provides all electric customers in San Mateo County with cleaner electricity at lower rates than those charged by the local incumbent utility. Peninsula Clean Energy saves customers an estimated \$18 million a year. Peninsula Clean Energy, formed in March 2016, is a joint powers authority made up of the County of San Mateo and all 20 cities and towns in the County. The agency serves approximately 290,000 accounts. Peninsula Clean Energy is governed by a Board of Directors comprised of one representative from each of the twenty cities in San Mateo County, two representatives from the County Board of Supervisors and two emeritus Board representatives.

At the Board of Directors meeting on October 21, 2019, the Board approved development of a plan to invest up to \$10 million over three years towards programs that address the problems created by PSPS events and natural disasters that can impact Peninsula Clean Energy's customers access to electricity. This document identifies a strategy and budget for how this commitment would be used to develop programs, accelerate regulatory changes, and outreach to community partners. It defines how Peninsula Clean Energy is well positioned to help drive systematic change to ensure our communities are resilient.

II. Problem

1. Background and Scale

In Spring 2019, Pacific Gas and Electric Company (PG&E) announced that it would expand its Public Safety Power Shutoff (PSPS) program in order to prevent wildfires across the state. The expansion of this program puts lives at risk, causes significant economic impacts, disrupts operations as well as increases greenhouse gas (GHG) emissions and worsens local air quality when diesel generators are operated for backup power. In addition to PSPS events, the Bay Area is vulnerable to natural disasters, including floods, wildfires, and earthquakes, which can all threaten safety and access to power. As we consider how to provide grid resiliency solutions for PSPS events, we must also plan for unanticipated disasters that might happen suddenly. Our customers need to be properly equipped with the means to get through power outages. For this reason, developing energy resiliency is an effort that can effectively mitigate the consequences of associated with potential disasters.

(a) Public Safety Power Shutoffs

A PSPS event occurs when PG&E decides it is necessary to turn off electricity in certain areas because dry conditions and gusty wind have created a heightened fire risk. No single factor drives a Public Safety Power Shutoff, as each situation is unique. PG&E considers the following factors when determining whether power should be turned off:

- A Red Flag Warning declared by the National Weather Service;
- Low humidity levels, generally 20 percent and below;

- Forecasted sustained winds generally above 25 mph and wind gusts in excess of approximately 45 mph, depending on location and site-specific conditions such as temperature, terrain and local climate;
- Condition of dry fuel on the ground and live vegetation (moisture content); and
- On-the-ground, real-time observations from PG&E's Wildfire Safety Operations Center and field crews.¹

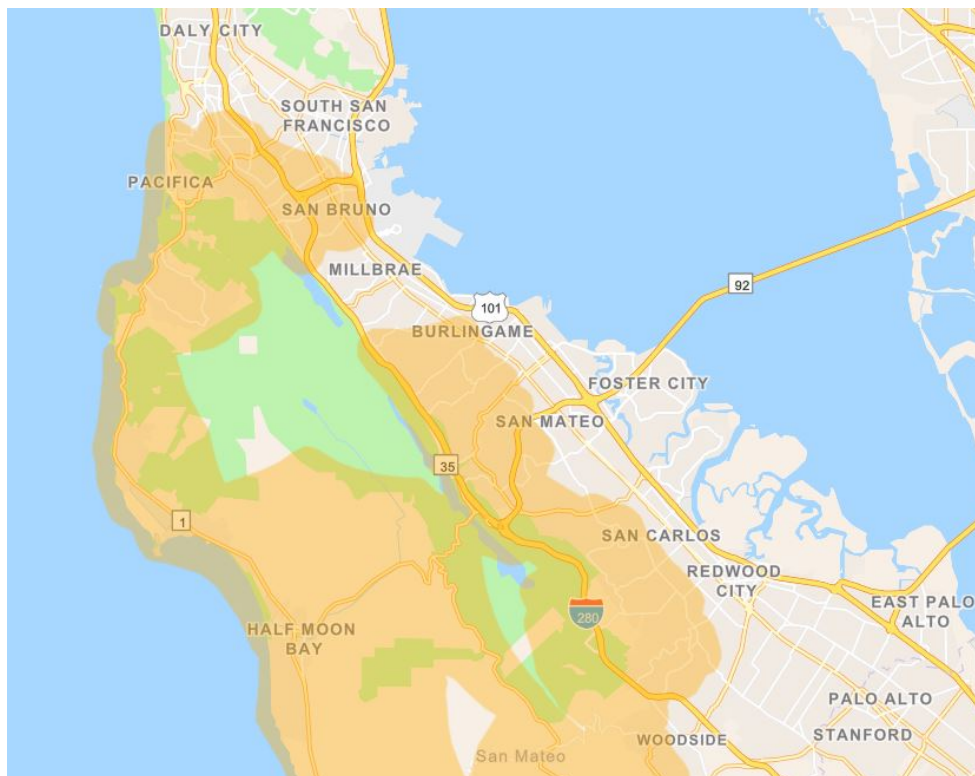
In October 2019, three PSPS events affected Peninsula Clean Energy customers in San Mateo County. These three events are detailed in Table 4 below. These events primarily impacted customers in coastal communities in the western part of the county as demonstrated in the map in Figure 3 below. Some of the customers impacted include Medical Baseline customers, which is a special rate class for customers with energy needs related to a medical condition.

Table 4: October 2019 PSPS Events Impacting Peninsula Clean Energy Customers

Event Dates	Peninsula Customers Impacted	Peninsula Medical Baseline Customers Affected	Total Californians Affected	Communities Affected	Outage Times
10/9 – 10/12	15,000 (5% of customer base)	270	730,000	<ul style="list-style-type: none"> • Half Moon Bay • Menlo Park • Pacifica • Portola Valley • Redwood City • San Mateo • Unincorporated areas 	17 – 38 hours
10/23 – 10/25	1,100 (0.3% of customer base)	23	177,000	<ul style="list-style-type: none"> • Half Moon Bay • Woodside • Unincorporated areas 	13 - 14 hours
10/26 – 10/28	57,000 (20% of customer base)	590	941,000	<ul style="list-style-type: none"> • Belmont • Burlingame • Daly City • Half Moon Bay • Hillsborough • Pacifica • Portola Valley • Redwood City • San Bruno • San Carlos • San Mateo • South San Francisco • Woodside • Unincorporated areas 	44 – 92 hours

¹ PG&E's Public Safety Power Shutoff Webpage: https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/wildfires/public-safety-power-shutoff-faq.page

Figure 3: PG&E map of many Peninsula communities impacted by the October 26, 2019 PSPS event. Orange shading represents geographies that experienced a power outage



Unfortunately, to date, PG&E has offered few solutions to customers affected by PSPS events. Peninsula Clean Energy has an opportunity to lead by offering solutions to those customers who will be most at risk in future PSPS events, which will revolve around future fire seasons that typically occur in summer and autumn.

(b) Other Power Shutoff Hazards

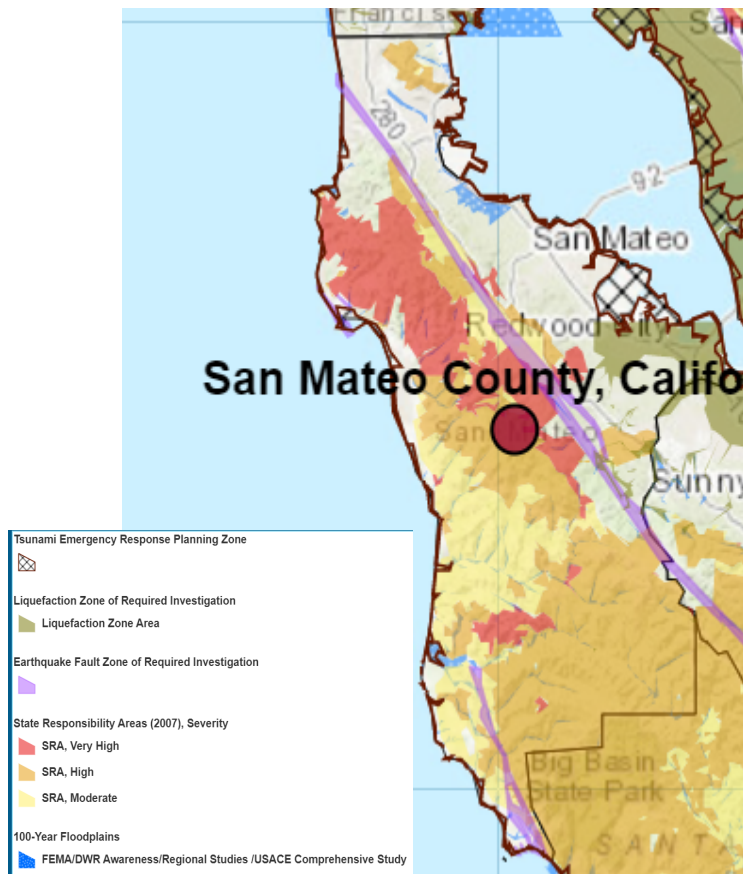
San Mateo County is vulnerable to a variety of other hazards which may cause customers to lose power including the following:

- wildfires;
- flooding and storms;
- earthquakes (including earthquake caused liquefaction and landslides);
- sea level rise; and
- tsunami inundation.

Figure 4 shows areas that are especially vulnerable to these threats according to the California Office of Emergency Services.² Additional maps related to specific hazards are available in the Appendix.

² "Cal OES MyHazards": <http://myhazards.caloes.ca.gov/>

Figure 4: Map of Hazards in San Mateo County



(c) Back-up Power Options

Currently, the most common electricity back-up option in the event of a power outage is a diesel fueled (or other fossil-fueled) generator. In the days leading up to the first PSPS event, and during the event, there was an increase in diesel generator sales. Some stores even sold out.³ Diesel generators produce significant local air quality impacts including some GHG impacts and nitrogen oxide, which can combine with other compounds to form ozone and particulate matter with serious health impacts. Moreover, diesel generators can present a fire hazard and may be unable to generate power in an emergency due to difficulties with fuel access or delivery. The proliferation of diesel generators runs directly counter to Peninsula Clean Energy's mission to reduce GHG emissions in San Mateo County, and to state-wide goals to improve air quality and reduce GHG emissions.

Fortunately, there are cleaner, economical alternatives to diesel generators for energy resiliency, namely a solar photovoltaic system paired with energy storage systems, commonly referred to as a microgrid. A microgrid is one system or a series of systems that is capable of disconnecting from the grid during a blackout to serve critical load. By disconnecting from the

³ "Northern California faces massive power outage as PG&E hedges wildfire risk": https://www.washingtonpost.com/national/northern-california-faces-massive-power-outage-as-pgande-hedges-wildfire-risk/2019/10/09/576facfa-ead9-11e9-9306-47cb0324fd44_story.html

grid, these energy resiliency systems serve local power needs that help our customers comfortably, safely, and cleanly get through power outages that can last for days. A solar energy system paired with battery storage is well-equipped to handle outages that last for several hours at a time, and often even days if there is continued sunlight throughout these events. Peninsula Clean Energy believes that solar and storage play a crucial role in creating a resilient electricity system in San Mateo County. Further, new technologies are emerging now to address the gap that exists between customers' demand for clean, long-duration (10+ hours) backup power, and market solutions that are geared towards only temporary blackouts.

2. Sensitive Customers and Communities

Peninsula Clean Energy is committed to supporting customers who may be especially sensitive to the impacts of a loss of power. This may include medically threatened or low-income residents or businesses in areas with a high concentration of these customers. There currently are several methodologies that are used to identify sensitive customers and communities. These methodologies listed below will inform program design and targeting.

(a) CalEnviroScreen

The Office of Environmental Health Hazard Assessment, on behalf of the California Environmental Protection Agency (CalEPA), created the California Communities Environmental Health Screening Tool (CalEnviroScreen - CES) to identify California communities by census tract that are disproportionately burdened by, and vulnerable to, multiple sources of pollution.⁴ CalEnviroScreen uses environmental, health and socioeconomic information to produce a numerical score for each census tract in the state.

SB 535 (DeLeon) directed CalEPA to determine a definition of "Disadvantaged Communities" (DACs) to target investment of the state's cap-and-trade funds. CalEPA defined DACs as those falling in the top 25% highest scoring census tracts as measured by the CalEnviroScreen 3.0 tool. As this measure is used to target investment of the state's cap and trade funds, many of the state-level funding sources for distributed energy resources (DERs) including Self-Generator Incentive Program (SGIP) use this definition.

As identified in Table 5, there are six census tracts in San Mateo County that fall into this measure. According to CalEnviroScreen 3.0, approximately 35,000 people live in these areas and Peninsula Clean Energy has estimated that this represents approximately 7,000 customer accounts. Please refer to Figure 5 below for a map of the communities in San Mateo County that meet this threshold.

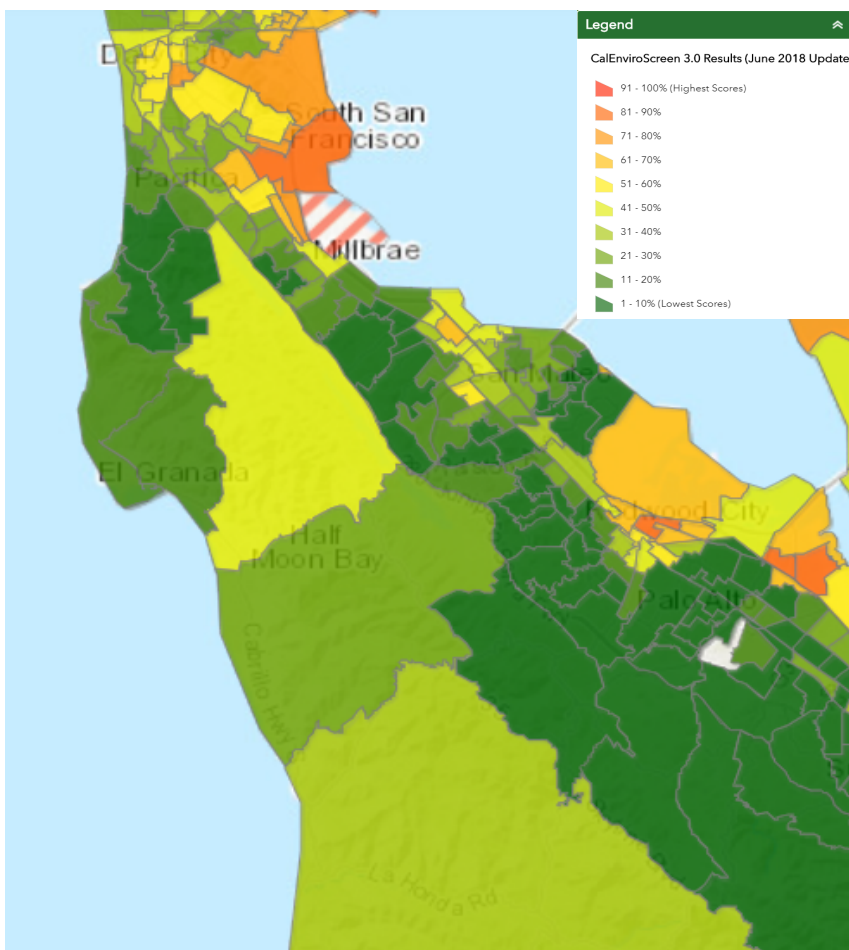
⁴ "CalEnviroScreen 3.0": <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30>

Table 5: San Mateo County's Disadvantaged Communities

CalEnviroScreen (CES) 3.0 Results						Peninsula Clean Energy DACs ⁵	Demographics (%)					
	Census Tract	CES 3.0 %	CES 3.0 % Range	City	Population	Customer Accounts	Hispanic	White	African American	Native American	Asian American	Other
1	6081611900	86.85	86-90%	East Palo Alto	10,325	1,235	56.9	6.8	19.8	0.1	13.3	3.1
2	6081612000	81.70	81-85%	East Palo Alto	7,327	710	72.8	3.2	13	0.1	9.0	2.0
3	6081602300	80.89	81-85%	South San Francisco	3,753	1,160	45.4	19.5	1.5	0.2	30.3	3.2
4	6081610201	80.20	81-85%	Redwood City	5,764	2,125	74.4	12.1	2.5	0.4	8.3	2.2
5	6081602100	77.93	76-80%	South San Francisco	3,615	943	72.4	9.0	1.9	0.4	14.1	2.1
6	6081604200	75.46	76-80%	San Bruno	4,170	888	56.9	14.9	0.9	0.5	23.1	3.7
				Total	34,954	7,061						

⁵ Not included in CalEnviroScreen 3.0 results; figures calculated by PCE.

Figure 5: Map of CalEnviroScreen 3.0 Results; Census Tracts in top 25% are considered disadvantaged communities (DACs)



(b) San Mateo County Community Vulnerability Index

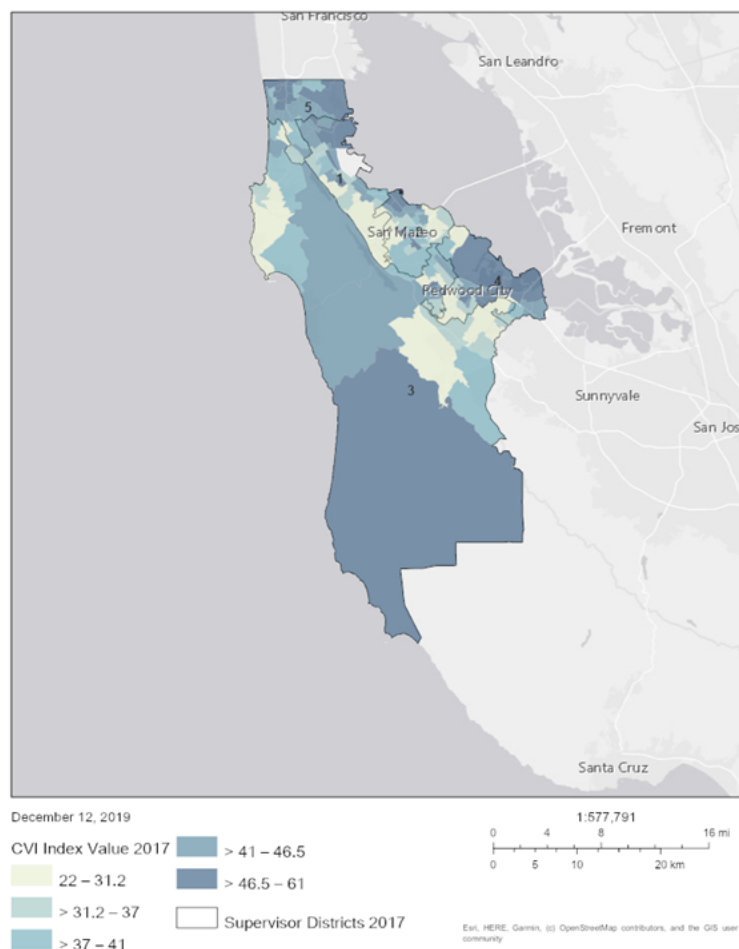
A second measure is the San Mateo County Community Vulnerability Index (CVI)⁶. This is an initiative of the County Manager's Office and aims to demonstrate the geographical distribution of the overall vulnerability of the residents of the county. Indicators have been standardized and combined to create dimension scores, on a scale from zero to 100, with the highest score representing the most vulnerable communities. The CVI evaluates the following seven indicators of vulnerability:

- health insurance coverage;
- educational attainment;
- supplemental security income;
- gross rent as a percentage of income;
- poverty;
- unemployment; and
- disability status.

⁶ "Community Vulnerability Index": <https://cmo.smcgov.org/cvi>

The CVI identifies a large vulnerable population on the San Mateo County coast that has been directly impacted by each PSPS event in the County to date. Please refer to Figure 6 below for a map of the Community Vulnerability Index for San Mateo County.

Figure 6: Map of San Mateo County Community Vulnerability Index. A dark shade of blue represents a high degree of vulnerability



(c) Low Income Households

A third definition of disadvantaged communities is based on income level. Low income is often defined as household income below 80% of the area's median income. We estimate that more than 120,000 households in San Mateo County fall within this definition.

Low income can also be defined as median household incomes at or below the threshold designated as low income by the Department of Housing and Community Development's list of state income limits adopted pursuant to Health and Safety Code (H&SC) Section 50093. Finally, low income could be defined as households eligible for certain electric rates including California Alternate Rates for Energy (CARE) or Family Electric Rate Assistance (FERA) program. Income levels for CARE are set by the CPUC at 200 percent or less of the federal poverty guidelines and income levels for FERA are set at 250% or less of the federal poverty

guidelines. Peninsula Clean Energy has 29,262 accounts enrolled in the CARE rate and 858 accounts enrolled in the FERA program.

(d) *Medically Threatened*

A fourth measure is defined as medically threatened customers, which includes customers that rely on electricity to power a critical medical device. The Medical Baseline program is an assistance program for residential customers with special energy needs due to medical conditions. Enrollment in this program provides a lower rate on energy bills and extra notifications in advance of PSPS events.^{7,8}

Peninsula Clean Energy has approximately 4,300 known Medical Baseline customers. During the largest of the four PSPS events in October, over 1,000 Medical Baseline customers lost power out of the total 55,000 customers who were affected by that event.

While the Medical Baseline Program helps identify an important customer segment, it is a flawed measure for holistically identifying medically threatened customers. It is currently undersubscribed in San Mateo County. In addition, the requirements to join the Medical Baseline Program are much broader than what constitutes a life-threatening event resulting from loss of power.

(e) *Other Measures of Priority Customers*

It is imperative that Peninsula Clean Energy defines, identifies, and maps out which of our customers are most affected by blackouts. That mapping effort will take into consideration customers' susceptibility to blackouts as measured above, as well as the following:

- Distance from planned community resiliency centers;
- Proximity to emergency response support;
- Areas that are historically slow to reenergize after blackouts;
- Tier-2 and Tier-3 High Fire-Threat Districts (T2 / T3 HFTDs); and
- Susceptibility to other natural disasters, such as sea level rise and earthquakes.

Once an inclusive measure is established and mapped out, we will use this to target our programs to these most sensitive communities.

⁷ "Apply for the Medical Baseline Program": https://www.pge.com/en_US/residential/save-energy-money/help-paying-your-bill/longer-term-assistance/medical-condition-related/medical-baseline-allowance/medical-baseline-allowance.page?WT.mc_id=Vanity_medicalbaseline

⁸ "Medical Baseline": <https://www.cpuc.ca.gov/medicalbaseline/>

III. Priorities

Peninsula Clean Energy has identified four strategic objectives for the timeline of this strategy as well as recognition that creating a resilient energy grid will require resources and planning over a longer time horizon. As part of the initial strategy and programs, we will work to document lessons learned that can inform the longer planning needs.

1. Strategic Objectives & Priority Areas

PSPS events and natural disasters in San Mateo County will be both a threat to resiliency and a driver of clean energy development and innovation. This strategy aims to address the following high-level objectives:

1. Provide solutions to the most vulnerable customers ahead of the start of the next fire season in late summer 2020. Peninsula Clean Energy along with community stakeholders have identified customers that rely on critical medical equipment as the highest priority to target. As part of this strategy, we will design programs for this subset of customers as the highest priority.
2. Leverage resiliency programs towards Peninsula Clean Energy's goal to be 100% renewable on a time-coincident basis by designing programs where infrastructure can be used to meet this goal when not needed for resiliency purposes. This will also increase the value of these programs.
3. Establish a basis for an ongoing resiliency business model. By using the lessons learned in deployment of early programs, we can identify the characteristics of successful programs which enable Peninsula Clean Energy to continue to serve its customers.
4. Identify opportunities to create a paradigm shift towards pervasive resiliency wherein resiliency is built into complementary areas of Peninsula Clean Energy initiatives over the longer term. For example, this may include increasing energy efficiency to decrease the amount of load that needs to be supported in a power outage or changes to the building code to support resiliency.

One of Peninsula Clean Energy's most aggressive organizational goals is to design a power portfolio that is sourced by 100% renewable energy by 2025 on a time-coincident basis, provided it is economically viable. Solar energy and energy storage solutions for backup power provide Peninsula Clean Energy the opportunity to utilize these assets outside of power outage events. This can help bridge the gap that currently exists between San Mateo County's electric load and Peninsula Clean Energy's renewable energy supply.

As energy resiliency is a long-term challenge, we will lead the development of resiliency solutions with a lens beyond the immediate timeframe of initial programs. A wide variety of long-term strategic factors will be taken into consideration as we mobilize and incentivize energy resiliency solutions in our county. Those factors include Peninsula Clean Energy's ability to provide ongoing service, models of infrastructure and asset ownership, replicability and scalability, programmatic efficiency, and technological innovation.

Over the last few months, Peninsula Clean Energy staff have met with a variety of public and non-profit organizations, including San Mateo County Healthcare, the Commissions on Aging and Disabilities, the Red Cross, the Office of Emergency Services, and the Redwood City Fire Chiefs, among other stakeholders. They all expressed major concerns about PSPS events and view PSPS events as a threat to their communities and operations. Through these conversations, Peninsula Clean Energy has identified the following three priority program areas:

1. Backup generation to medically fragile residential customers;
2. Community-scale emergency response centers outfitted with energy resiliency; and
3. Critical infrastructure such as police/fire stations, hospitals and other healthcare facilities, communications facilities that support emergency first responders, and wastewater / sewage / water pumping facilities, transportation infrastructure.

2. Long-Term Resiliency & Replicability

This strategy will leverage up to \$10 MM in Peninsula Clean Energy funds over the next three years. However, as noted above, the scale and need for resiliency goes far beyond what can be accomplished in this time frame and with this budget. Further, as the impacts of climate change become more pronounced in our community, there will be continued need to create resilient buildings, homes and electric infrastructure.

Over the long term, considerations of resiliency will need to be built into the development and construction of all homes and other buildings. In order to address the scale of existing homes and businesses, we will need to identify cost-effective turnkey programs for deploying technological solutions.

It is important that Peninsula Clean Energy considers how our programs can and will be replicated across other load serving entities' (LSEs') service territories within California and beyond. The initial programs that are deployed as part of this strategy will help to inform how to think about resiliency over the longer term. We will document lessons learned and use these to inform Peninsula Clean Energy's future strategies around resiliency, share these lessons with CCAs and other LSEs as well as with regulators and policy makers to identify and remove barriers to the development of a more resilient electricity system. Our efforts are relevant not only to California, but also in parts of the country where energy resiliency is threatened by mass flooding, hurricanes, windstorms, and aging grid infrastructure.

Additionally, the current transmission and distribution infrastructure has a lot of vulnerabilities as evidenced by PG&E's use of PSPS to avoid fire risk and the resulting power outages that affected millions of Californians in 2019. While Peninsula Clean Energy does not own and is not responsible for maintaining the distribution infrastructure, there may be ways to locate DERs to increase resiliency not just for a particular customer, but for the grid overall through the deployment of non-transmission alternatives. As part of our resiliency strategy and through the deployment of programs, Peninsula Clean Energy will explore how we may be able to contribute to the resiliency of the electric grid by working with PG&E or through the programs that we deploy.

Through our efforts to lead the charge in deploying energy resiliency solutions we can bring about wide systematic change to automatically include energy resiliency into the built

environment, ensuring that San Mateo County is positioned for long-term wellbeing, economic health, and technological innovation.

3. Metrics

The programs that we deploy and consider deploying will be evaluated using the following metrics, which are further defined in the Appendix:

- Avoidance of power outage costs to cities;
- Avoidance of disruption to critical infrastructure;
- Cost of deployment to Peninsula Clean Energy;
- Number of customers directly impacted by our programs;
- Number of customers indirectly impacted by our programs;
- Number of medically threatened customers directly impacted by our programs;
- Number of medically threatened customers indirectly impacted by our programs;
- Number of customers in sensitive communities directly impacted by our programs;
- Number of customers in sensitive communities indirectly impacted by our programs;
- Air quality improvements;
- Impact on goal to be 100% renewable energy on a time coincident basis;
- Reduction in GHG emissions;
- Scale of deployment as measured in megawatt (MW) and megawatt hour (MWh).

IV. Solutions

Peninsula Clean Energy is well-positioned to facilitate programs to increase energy resiliency in San Mateo County due to its role as a public agency, its connection to customers and its position in the electricity market. There are a variety of mechanisms that Peninsula Clean Energy can use for this facilitation ranging from direct incentives to education to electricity rate structures. We have identified programs across the priority areas identified above to meet our strategic objectives for this resiliency strategy.

1. Why Peninsula Clean Energy?

CCAs are in a unique position to facilitate the proliferation of alternative forms of backup power. Our distinctive role in our community, and in the energy market, allows us to 1) leverage existing customer relationships, 2) aggregate backup energy systems to create new value streams, and 3) mobilize our public health and disaster preparedness community in order to identify and respond to high priority concerns.

Peninsula Clean Energy has a direct connection to our customer base, which stands to benefit from a more resilient energy system. Each of the 20 cities in San Mateo County, as well as the Unincorporated County, has a representative on our Board of Directors. Our Board members provide a link to each of their communities. We can leverage these relationships to inform the direction of our programs and to fully understand the needs and priorities of our communities. Additionally, Peninsula Clean Energy's Citizens Advisory Committee (CAC) provides another direct link to our customers and their concerns. We met with representatives of the Board and the CAC to solicit ideas in developing this strategy and will continue to work with them as we deploy the strategy.

In addition, when not being utilized for backup power, these systems can be aggregated together for use in the wholesale energy market, helping Peninsula Clean Energy to hedge against peak energy prices. Creating these new value streams aligns well with Peninsula Clean Energy's goals to foster innovation in the electricity sector, support energy resilience and keep costs low for our customers.

2. Tools for Energy Resiliency

There are many ways that Peninsula Clean Energy can spur energy resiliency solutions. The following are some, but not all, of the ways that Peninsula Clean Energy can motivate new energy resiliency solutions within San Mateo County. By enabling supplementary value streams, we may increase value and reduce risk in a way that can expand the number of feasible projects. This may also allow Peninsula Clean Energy to reduce the amount of energy we buy from the energy markets thereby decreasing our procurement costs. In addition, we will look to leverage third-party funding sources to offset the cost of these programs to Peninsula Clean Energy. In the Appendix, we have identified a number of these funding approaches that Peninsula Clean Energy can utilize.

1. **Upfront and Volumetric Incentives:** Provide upfront or volumetric (per unit of energy generated) incentives for the rollout of new energy systems or resiliency programs, either directly to customers or vendors, or on customers' electricity bills. These incentives buy-down the cost of new energy systems.
2. **Power Purchase Agreement:** Execute a long-term contract to buy energy generated by a distributed energy system. This allows the developer to finance the system and means the customer does not have a large, up-front expense.
3. **Resource Adequacy (RA) Procurement:** Execute a long-term contract to purchase RA from new energy systems, thereby providing a guaranteed, contracted revenue stream to vendors on top of energy sales. This may enable systems that would not be financially feasible without this revenue stream.
4. **Wholesale Market Participation:** Peninsula Clean Energy can facilitate distributed energy resources' participation in wholesale energy markets.
5. **Peak Load Reduction:** Dispatch – or incentivize the dispatch of - energy storage at times when we anticipate our service territory's load to reach peak levels, which is when we generally see the highest energy prices. Reducing our peaks can also decrease the amount of RA we are required to purchase in future years.
6. **On-bill Financing:** Provide zero or low-interest loans to Peninsula Clean Energy customers. Regular monthly loan payments would be collected by Peninsula Clean Energy through customer's monthly utility bill until the loan is repaid. Many on-bill programs require "bill neutrality." In other words, savings from the funded improvements are expected to equal or exceed the new on-bill loan payments.⁹

⁹ "On-Bill Financing: Overview and Key Considerations for Program Design," NRDC Issue Brief: <https://www.nrdc.org/sites/default/files/on-bill-financing-IB.pdf>

7. Credit Support: Provide credit support to customers with low or no credit scores to enable them to take advantage of power purchase agreement (PPA) or lease structure financing, which do not require up-front capital.
8. Procurement Backstop: Procure power from excess generation that exceeds customer load. The added value stream to energy systems can reduce contracted revenue risk to PPA financiers, thus expanding access to clean energy solutions.
9. Energy Rates: Create alternative tariffs specifically to incentivize customer participation in programs that expand energy resiliency and distributed energy resources.
10. Net Energy Metering (NEM): NEM is a special billing arrangement that allows customers with solar PV systems to get the full retail value of the electricity their system generates. The customer's meter tracks the difference between the amount of electricity produced by solar panels and the amount of electricity used during each billing cycle. When the solar panels produce more electricity than used, customers receive a credit on their bill. We could change the structure of this NEM program to more highly incentivize systems with a storage component or that otherwise contribute to grid resiliency.
11. Marketing Leverage to Deliver Reduced Cost of Customer Acquisition: Customer acquisition represents a significant portion of overall solar system costs –approximately 17% in 2017 and expected to be approximately 20% through 2022¹⁰. We can help developers reach our customer base at a lower cost than their traditional methods. This can reduce the overall cost of a system and the savings can be passed on to customers or, for customers with low or no credit, the resulting increase in total value captured by vendors can offset customer credit risk, thereby enabling systems that would not otherwise be feasible.
12. Outreach Grants: Cover part of the cost for public agencies or non-profits to reach out to customers and sensitive or hard-to-reach communities and inform them of their options for energy resiliency and provide information on Peninsula Clean Energy's programs.
13. Education: Develop and provide educational materials to customers on their options for backup power generation and other ways to make their homes and businesses more resilient.
14. Research: There are many aspects of how to foster widespread clean energy resiliency that need additional research. Peninsula Clean Energy can partner with research institutions to help guide and fund that research or host pilot programs to inform research. Areas for research may include safety measures for lithium-ion energy storage, economic loss to San Mateo County and cities from power outages caused by natural disasters and PSPS events, identifying vulnerable residents most impacted by PSPS events, and identifying critical areas of the electric grid in San Mateo County that are vulnerable or where a loss of a transmission or distribution line would impact a large number of people.

¹⁰ "Costs to Acquire US Residential Solar Customers are High and Rising":
<https://www.greentechmedia.com/articles/read/costs-to-acquire-us-residential-solar-customers-are-high-and-rising>

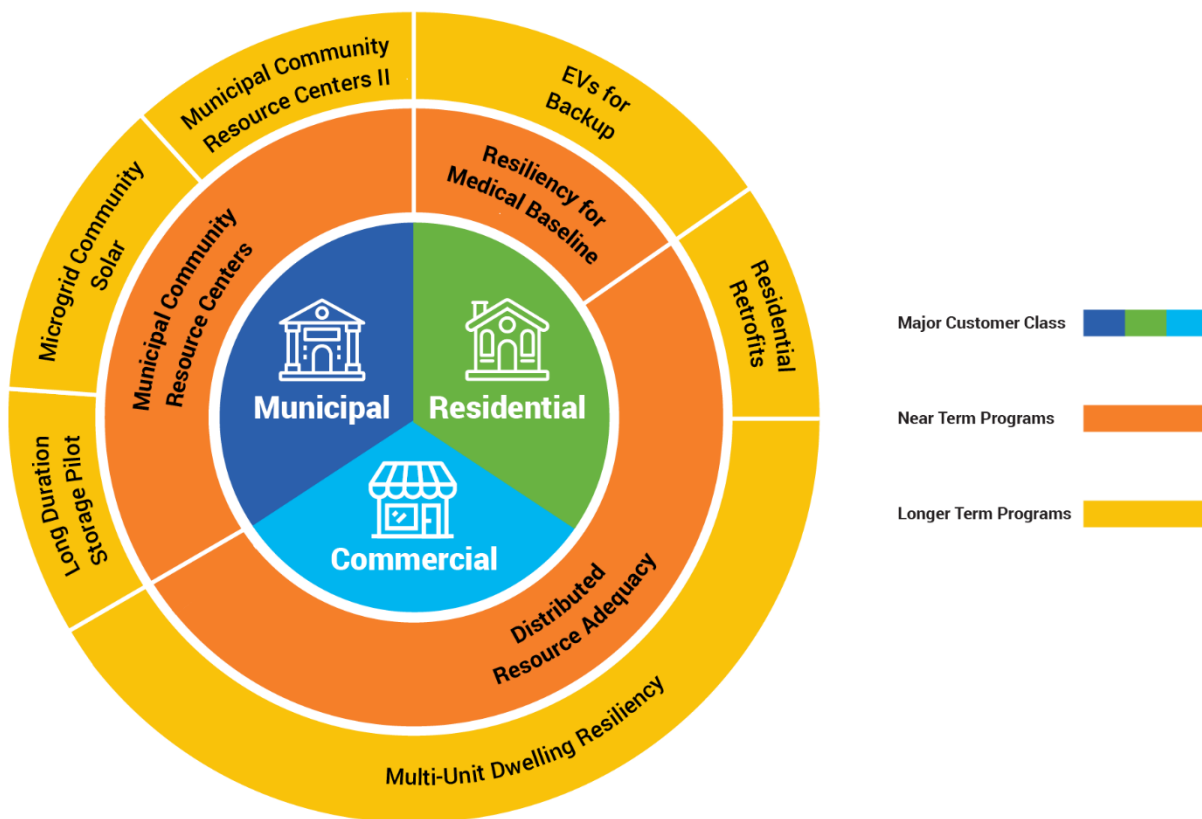
15. Technology Innovations: Energy resiliency from clean sources is a relatively new industry, and there are emerging technologies that can be accelerated such as long-duration storage and alternative generation systems. Pilot programs can be an effective way to advance new solutions.

3. Programs

Peninsula Clean Energy has developed and is developing a variety of programs to help address the needs of our residential, commercial, and municipal customers. Each customer class can face serious consequences from a power outage. The types of programs we design and deploy will differ depending on the targeted customer class.

Figure 7: Priority Areas and Programs

PENINSULA CLEAN ENERGY MAJOR RESILIENCE PROGRAMS BY CUSTOMER CLASS



Our highest and first priority is on residential customers who rely on electric medical equipment to support their lives. Their health is directly threatened by power outages. The first program identified below addresses that threat.

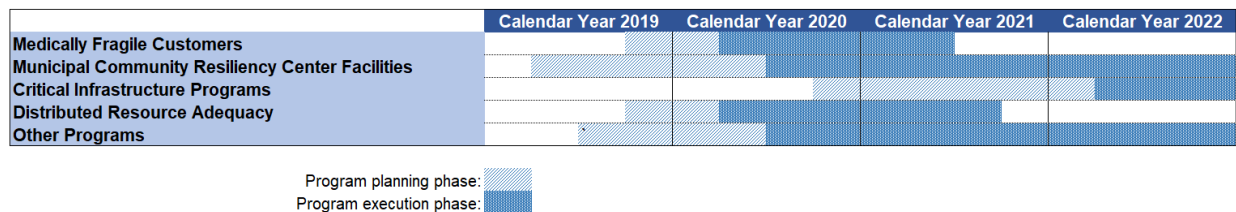
Peninsula Clean Energy will also support cities and the County in developing Community Resiliency Centers (CRCs) that provide our customers backup power and shelter, can serve as communications hubs, allow people to charge their phones and laptops, allow people to charge their medical devices, receive refrigerated food and medication, and stay updated as power outages eventually conclude.

Another high priority area is supporting the continued operations of critical infrastructure, including police/fire stations, hospitals and other healthcare facilities, communications facilities that support emergency first responders, wastewater / sewage / water pumping facilities, and transportation infrastructure even in times of power outages. Although many of them have diesel generators as a backup power source, not all do, and diesel brings additional challenges including safety and availability of fuel during an outage. In order to start to address this challenge, we have designed programs to first identify and catalog resilient critical infrastructure facilities.

Partnering with third-party organizations will be key for the success of many of our programs. Peninsula Clean Energy will seek other LSEs that might be interested in supporting their customers' efforts in getting on-site backup generation. This expanded participation will draw more responses to the program, which will lead to more robust planning from bidders, and more competitive pricing. We will also work with local police, fire and other emergency responders, hospitals, non-profit and other community organizations. This will help to ensure that we are creating programs that will have the most impact on minimizing the impacts of power outages.

Figure 8 below highlights several programs that are underway to address the backup power needs of these high-priority customers already, as well as future programs that we are planning.

Figure 8: Peninsula Clean Energy Resiliency Programs Timeline 2019 - 2022



A summary of the expected outcomes, customers impacted, and associated partners for each of the energy resiliency efforts can be found below in

Table 6.

Table 6: Summary of Expected Program Outcomes

Program	MW	Customers	Tools	Partners
Medically Fragile Customers	4 MW Solar / 16 MWh Storage	675	RA, Outreach Grants, Incentives, Cost of Acquisition	CCAs, Hospitals, Public Health Agencies, Non-Profits
Municipal CRCs	5.8 MW Solar / 23 MWh Storage	9,000 – 18,000	Education, RA, Cost of Acquisition, PPA	EBCE, BAAQMD, Arup, Cities, County
Critical Infrastructure	TBD	TBD	Education, Research	Cities, County
Distributed RA	40 MWh Storage	900	RA, Cost of Acquisition	EBCE, Silicon Valley Clean Energy (SVCE), Silicon Valley Power (SVP), Optony

(a) Solar Energy Resiliency for Medically Fragile Customers

Grid outages are inconvenient and expensive for residents and businesses. However, they can be life threatening for people that depend on electricity to power medical equipment such as left ventricular assist devices (LVADs), ventilators, or oxygen concentrators. These customers need backup power and/or an alternate risk mitigation plan in place prior to a prolonged power outage. Clean backup power will allow customers that are unable to leave their homes to safely stay at home during a power outage. It could also reduce power outage-related calls that these customers place to emergency services.

Peninsula Clean Energy has approximately 4,300 Medical Baseline customers. Medical Baseline provides certain protections for residential customers that have special energy needs due to qualifying medical conditions. During the largest of the four PSPS events in October, approximately 600 Medical Baseline customers lost power out of the total 57,000 customers who were affected by that event.

Medical Baseline enrollments may not accurately capture all medically vulnerable customers, and customers that are enrolled in Medical Baseline do not all have the same needs and risks. We also believe the Medical Baseline program is undersubscribed, with many eligible customers not enrolled and therefore not reflected in these numbers. Peninsula Clean Energy is working with some of the community partners to better identify electricity-dependent medical customers, assess their needs, and figure out the best plan for helping them during an outage.

Medically threatened customers may live in single-family homes and / or multi-unit dwellings. Deploying solutions on single family homes will likely be much easier and faster to install than multi-unit dwellings. For this reason, we have separated these activities in the program description below.

This program will support three primary activities:

1. **Outreach and Identification:** Peninsula Clean Energy will partner with local public health institutions such as hospitals, municipal emergency services and non-profit agencies to identify and conduct outreach to customers with critical, electricity dependent medical needs in our service territory. This effort entails reaching across the greater Bay Area by working with hospitals who serve a geographically diverse patient pool. Hospital facilities often serve customers who live in different counties. In partnership with other local Bay Area CCAs, we will work with local hospitals who will help us share information about resiliency programs with families that are located in Peninsula Clean Energy's service territory and may need backup power solutions. We will work with these partners to identify customers, assess needs, and develop appropriate solutions.
2. **Single-Family Homes:** Peninsula Clean Energy will run a solicitation to identify private sector partners to facilitate the deployment of solar and battery energy solutions on the homes of 65 medically threatened customers before the 2020 wildfire season. This will deliver immediate relief and test the approach and pricing for this solution. These back-up power systems will allow customers that are unable to leave their homes to safely stay at home during a power outage. There are four ways that we can reduce the cost of these solutions for the end customer – direct incentives, power purchase agreement, purchasing RA, reducing cost of customer acquisition.
3. **Multi-Unit Dwellings (MUD):** Peninsula Clean Energy will work with community partners to identify an apartment complex or other MUD with a higher concentration of medically threatened customers. We will work with public and private sector partners to identify solutions for deploying backup power in multi-unit dwellings.
4. **Comprehensive Solution:** We will leverage the learnings from these three activities to develop a comprehensive solution for all types of Medical Baseline and other customer dependent on electricity for medical needs.

A major motivator for this program is the current availability of funds from the CPUC under the SGIP. Medical Baseline customers who are located in Tier 2 or Tier 3 high fire threat districts (T2 / T3 HFTDs) are eligible to receive an incentive level that amounts to nearly the full cost of an energy storage system. This will help ensure that systems purchased or financed by our customers provide a near guarantee of economic savings.

(i) Program Partners

This customer class is traditionally hard to reach and therefore, we will need to rely on external community outreach partners to market this program. We have already identified and begun discussing this issue with several County agencies and key stakeholders to help us educate these customers on energy resiliency solutions, and to connect them with vendors. Most of these external partners are public sector organizations that might require education and funding that Peninsula Clean Energy may provide.

(ii) Expected Outcomes, Timeline, and Budget

We expect to target 65 homes and one multi-unit dwelling in the initial phase targeting deployment ahead of the most vulnerable part of the 2020 fire season starting in late summer. Over the longer term, we will leverage lessons learned in the initial phase to expand this to target all medically threatened customers. In the first phase, we expect this to result in

approximately 400 kilowatts (kW) of solar and 400 kW / 1,600 kilowatt hours (kWh) of storage with an average solar installation of 6 kW for single family homes and 30 kW for the multi-unit dwelling. Once we roll this out to all medically threatened customers in future years, we expect this to result in 4 MW of solar and 4 MW / 16 MWh of storage.

In Q1 of 2020, Peninsula Clean Energy will continue to foster relationships with community outreach partners to identify outreach tactics and develop more refined indicative program size. We will hold a solicitation in late Q1/early Q2 to identify on one or multiple vendors to address this issue.

Between outreach, request for proposal (RFP) administration, volumetric incentives, and RA procurement, we plan to budget \$2,550,000 for this program over the next three years.

(b) Municipal Community Resiliency Center (CRC) Facilities

Peninsula Clean Energy already has momentum behind the proliferation of energy storage systems for CRC, which provide a central location for residents to shelter in case of a power outage. In May 2019, Peninsula Clean Energy, in partnership with East Bay Community Energy (EBCE), commenced a project to scope public facilities in San Mateo and Alameda Counties for their solar and energy storage potential. This effort was funded by a 12-month, \$300,000 Bay Area Air Quality Management District (BAAQMD) grant. Once the scoping is complete, Peninsula Clean Energy and EBCE plan to facilitate a procurement of microgrid systems for high-priority municipal accounts identified in this effort. These microgrid systems will enable additional energy resiliency at various facilities and areas throughout the County.

CRC locations will be informed by several technical considerations, including the size of the population within a 30-minute walk, and proximity to disadvantaged communities. For those who are capable of leaving their residence during an emergency event, these CRCs will serve as energy hubs and shelters. While this portion of our energy resiliency strategy does not provide a backup power option for one's home directly, a combination of household-scale and community-scale solutions will be necessary to adequately provide backup power for San Mateo County residents. Additionally, systems developed at these CRCs will be able to achieve economies of scale and provide energy at a much more competitive cost compared to solutions geared for individual homeowners.

While CRCs exist today, they are primarily powered by diesel generators. Peninsula Clean Energy and EBCE are currently studying the potential for solar and battery storage to provide backup power to CRCs to provide emergency services during natural disasters and PSPS events.

In 2019, Peninsula Clean Energy requested that cities in San Mateo County identify potential sites for this program. Eleven municipalities responded with a list of 118 prospective facilities, which were studied for their solar potential, hazard risk to natural disasters, and proximity to customer populations. Based on a scoring matrix developed by our partners at Arup Group, we have identified 92 facilities that are potentially viable. Peninsula Clean Energy will be meeting with these 11 municipalities in Q1 2020 to provide an update and review the results of this study.

The next step in the scoping phase is to develop a financial model, mechanism, or strategy that results in affordable and widespread deployment of resiliency solar systems. Finally, we will

design and assist in the collective procurement for solar+storage installations at priority critical facilities to reduce costs for interested agencies.

The overall scoping study performed will serve as a basis for assessing the full scope of a prospective procurement. EBCE and Peninsula Clean Energy are planning to release a Request for Information (RFI) in February 2020 to field industry perspectives on potential resiliency solutions, and how to organize procurement for multiple municipalities under one structure.

Following that RFI, we will design and administer a joint RFP in Q2 2020. This is anticipated to be a collective procurement for solar and storage installations at priority community facilities throughout both San Mateo and Alameda Counties. We are aiming to select awardees in Q2 2020. Energy development cycles at this scale are significantly lengthier than cycles for residential customers. We expect new energy resiliency systems to be deployed starting Q2 2021 into Q2 2022.

(i) Program Partners

We are working with EBCE, who is leading this program. Arup Group is the organization leading the technical evaluation of our facilities. BAAQMD provided the grant to perform this scoping study.

Eleven cities in San Mateo County provided facilities for study: Belmont, Brisbane, Colma, Foster City, Half Moon Bay, Hillsborough, Millbrae, Pacifica, Redwood City, San Carlos, and San Mateo. As part of this procurement, we will expand this program to include other cities in San Mateo County.

(ii) Expected Outcomes, Timeline, and Budget

We expect to site approximately 6 MW+ of new solar and 6 MW+ / 24 MWh+ of new energy storage at San Mateo County municipal facilities as a result of these efforts although final numbers will depend on the outcome of the scoping study.

Once the program is launched and CRCs are deployed, Peninsula Clean Energy will leverage the lessons learned through the first phase to develop a sequel program that expands the number of CRCs utilizing solar and storage systems.

Between program administration and RA procurement, we are budgeting \$2,540,000 for this program over three years.

(c) Identify and Catalog Critical Infrastructure

A third area identified as a priority by Peninsula Clean Energy and our community partners is backup power for critical infrastructure facilities. These critical infrastructure facilities may include the following:

- Fire stations
- Police stations
- First responders
- Emergency response centers
- Water pump stations
- Wastewater treatment plants
- Hospitals and medical facilities
- Cell towers
- Transportation infrastructure
- Communications hubs
- Shipping ports

Some of these facilities may be covered in the Municipal Community Resiliency Center program described earlier. The immediate need for understanding the scope of how Peninsula Clean Energy can support the operations of these critical infrastructure facilities is to identify and catalog the existing critical facilities in our service territory and map their vulnerability to power outages. Once we have defined our sensitive communities, we will map out their access to critical infrastructure facilities. If these facilities discontinue their operations due to power outages, some of Peninsula Clean Energy's customers will feel that impact harder than others. We need to fully understand that potential impact. How we develop programs catering to critical facilities will depend a lot on the outcomes of this research.

Peninsula Clean Energy will also continue to work with our community partners to understand how we can best support solutions for creating energy resiliency for various infrastructure, and to start the planning process for implementing these solutions. Many of these facilities have some access to backup power already in the form of diesel generators. By assisting in their transition away from polluting power sources, Peninsula Clean Energy has an opportunity to further improve local air quality. Additionally, these assets that increase energy resiliency can also provide value to Peninsula Clean Energy outside of power outage events and help to meet our goal to be 100% renewable on a time-coincident basis.

We plan to budget \$500,000 for this program over the next three years. This will be primarily used for research and technical analysis.

(d) Distributed Resource Adequacy

Following the PSPS events in October, Peninsula Clean Energy along with several Bay Area LSEs released an RFP for RA from DERs located at residential and commercial customers' properties. DERs are eligible to help LSEs meet their RA compliance through a mechanism called Proxy Demand Response (PDR). PDR allows DERs to participate in California wholesale energy markets. However, only a small amount of RA has been provided through this mechanism due to complexities around how RA is measured and how resources can count toward an LSE's RA obligation.

Like other programs outlined in this strategy, the Distributed RA RFP takes advantage of LSEs' central connection to their customers. The LSEs will serve as a channel partner between solar and storage vendors and a subset of our residential and commercial customer accounts. Additionally, by purchasing RA from these systems, we provide an additional revenue stream to the vendors, which can lead to lower energy rates for our customers, and/or expanded customer participation.

(i) Program Partners

The partners involved in this program include East Bay Community Energy (CCA), Silicon Valley Clean Energy (CCA), and Silicon Valley Power (municipal utility). Optony Inc. is administering the RFP. TerraVerde is assisting Peninsula Clean Energy in their evaluation of proposals

(ii) Expected Outcomes, Timeline, and Budget

The RFP was released on November 5, 2019 and closed on December 23, 2019. We received 19 responses to the RFP and are currently reviewing those responses. We expect to announce awardees in April 2020 and to begin deploying new energy systems in Q3 2020.

From this solicitation, Peninsula Clean Energy plans to procure at least 10 MW of new, distributed RA provided by at least 10 MW of new energy storage, which will likely be paired with existing or new solar energy systems. Half of program capacity will be deployed on residential customers' homes and half will be deployed at commercial customers' businesses. These systems will be installed by September 2021.

We have mandated that at least 5% of program volume be installed in sensitive communities as defined below. This is approximately in-line with San Mateo County's proportion of sensitive communities relative to our total county population. For the purposes of this RFP, we defined sensitive community as follows: census tracts in the top 25% of scoring on the CalEnviroScreen 3.0 tool; census tracts with median incomes at or below 80% of the median income for San Mateo County; and census tracts with median household incomes at or below the threshold designated as low income by the Department of Housing and Community Development's list of state income limits pursuant to Health and Safety Code Section 50093.

As we are only purchasing RA under this program, the budget mostly revolves around associated RA costs. The high volume of expected new energy systems for this program requires a high budget. Outreach, program administration, and RA procurement amount to \$1,820,000 for this program over three years. However, this will decrease the amount of RA that will need to be purchased from fossil fuel sources and which is already accounted for in Peninsula Clean Energy's budget.

(e) Future projects and programs

There are several other community-scale solutions that could realistically provide energy resiliency benefits to San Mateo County over the coming years. We have budgeted \$2,740,000 for these future programs in later years of the strategy. Peninsula Clean Energy will continue to refine and evaluate these opportunities.

1. California Energy Commission (CEC) grant opportunities: The CEC often deploys grant funding to test and deploy new technologies and business models. In the near-term there is a grant opportunity for demonstrating the use of long-duration (greater than 10 hours), non-Lithium energy storage to assist with critical operations in

disadvantaged or low-income communities that Peninsula Clean Energy is evaluating.

2. **Community-Scale Microgrid Projects:** Community-scale microgrids connect multiple adjacent facilities with solar and storage that can island from the electricity grid in the case of a power outage. Peninsula Advanced Energy Communities was a CEC-funded project led by the Clean Coalition to identify opportunities for community-scale microgrids in San Mateo County. Peninsula Clean Energy participated in the second phase grant opportunity in 2018 with a match commitment. While we were not awarded, we can build on the analysis and research completed for this effort to deploy microgrids in San Mateo County.
3. **Backup power at direct current fast charging (DCFC) electric vehicle (EV) chargers:** Power outages exacerbate range-anxiety concerns among current and potential EV drivers by limiting charging options in affected areas. Deploying DCFC stations with energy storage could provide additional confidence to EV drivers that they can charge their EVs in the event of power outages. Priority can be given to sites located in high fire threat districts. Outside of power outages, the localized energy storage can help Peninsula Clean Energy shape load on the grid. The system can prioritize charging the battery during midday and discharging during evening hours, reducing the load during the highest demand and more expensive evening hours. Additionally, due to the high power draw from these charging stations, storage will help to reduce the demand charges the owners of these chargers will see.
4. **EVs as backup power:** EVs require powerful batteries and therefore represent an energy asset that can act as a virtual power plant, charging their batteries with renewable energy during the daytime, and discharging their batteries to the grid when there is high demand during evening hours. Additionally, these fleets can provide backup power by reserving a portion of their overall capacity in the event of a power outage. Nissan is currently using their EV Leaf in this way in Japan. In the U.S., there are some limits around using EVs in this way due to limitations in warranties. However we expect this to change over time as “V2Home” (Vehicle to Home) programs started being implemented by the car companies and/or other third party suppliers.
5. **Electric buses for backup power:** Buses for schools and public transit stand to benefit from statewide electrification incentives, and San Mateo County’s bus system, SamTrans, expects to electrify its fleet of 300+ buses between 2020-2030. These long-range EVs can potentially serve as mobile power stations that provide backup power during prolonged grid outages.
6. **Solar and storage systems for MUDs:** We will leverage lessons learned in deploying solar and storage at MUDs for medically threatened customers to expand this program to other customer classes. In this program, we will work with vendors who have existing relationships with MUD businesses and affordable housing agencies.

7. Residential solar retrofits: A significant volume of solar energy is already deployed in San Mateo County. However, most of that solar is stand-alone, without an energy storage device to shift the solar output to the evening hours and without the ability to island from the grid in the event of a power outage. Peninsula Clean Energy can incentivize the rollout of battery storage to couple with existing solar installations. This will provide customers the benefit of backup power with a battery and can also help them manage time-of-use (TOU) rates by reducing the amount of electricity they draw from the grid during expensive evening hours.

4. Budget

Peninsula Clean Energy is budgeting up to \$10MM over three years to launch and implement the programs described above. Table 7 below provides a summary of the budget by program area. Table 8 provides a budget summary by cost area.

This is a high-level summary of the expected expenditures. Any actual budget commitments would need to be approved by Peninsula Clean Energy's Board in accordance with our policies. For Fiscal Year 2020 (FY2020), the budget will be allocated from a portion of the Programs budget, which is not expected to be used during the current fiscal year. In future fiscal years, these programs will follow Peninsula Clean Energy's normal budgeting process and are expected to be allocated to the cost areas indicated in Table 8. For some budget areas, such as Power Procurement, the budget does not change, but the technologies utilized for procuring different resources as described in this document, are changed. Similarly, budgets planned for Program Administration and Marketing and Outreach may not change significantly, but rather be allocated to reflect this emphasis on these programs. In all cases, more details for funding for each particular program will be brought to the board for approval as they are launched.

In developing programs to support energy resiliency, Peninsula Clean Energy will leverage third party funding in addition to Peninsula Clean Energy's funds. The Appendix identifies third party funding sources that we have currently identified. As we develop and refine programs, we will continue to work to identify funding sources that can be leveraged for these efforts.

Table 7: Budget Summary by Program

	FY-2020	FY-2021	FY-2022	Totals
Medically Fragile Customers	\$ 500,000	\$ 1,010,000	\$ 1,040,000	\$ 2,550,000
Municipal CRCs	\$ 150,000	\$ 1,150,000	\$ 1,240,000	\$ 2,540,000
Distributed Resource Adequacy	\$ 120,000	\$ 900,000	\$ 800,000	\$ 1,820,000
Critical Infrastructure Programs		\$ 200,000	\$ 300,000	\$ 500,000
Customer Education	\$ 30,000	\$ 50,000	\$ 30,000	\$ 110,000
Future Programs		\$ 860,000	\$ 1,880,000	\$ 2,740,000
FY Totals	\$ 800,000	\$ 4,170,000	\$ 5,290,000	\$ 10,260,000

Table 8: Budget Summary by Cost Type

	FY-2020	FY-2021	FY-2022	Totals
Marketing and Outreach	\$ 380,000	\$ 400,000	\$ 330,000	\$ 1,110,000
Program Administration	\$ 420,000	\$ 750,000	\$ 700,000	\$ 1,870,000
Power Procurement	\$ -	\$ 2,160,000	\$ 2,380,000	\$ 4,540,000
Other	\$ -	\$ 860,000	\$ 1,880,000	\$ 2,740,000
FY Totals	\$ 800,000	\$ 4,170,000	\$ 5,290,000	\$ 10,260,000

V. Implementation

As part of the implementation of these programs, we have developed preliminary plans for outreach and education. Additionally, we are working in the regulatory and legislative areas to identify barriers to deployment of distributed solutions for resiliency and will provide lessons learned through the deployment of the programs identified above to regulators and legislators to facilitate the expansion of these types of systems.

1. Outreach and Education

An important aspect of deploying any program is ensuring that customers are aware of the program and its benefits. A portion of this outreach and communication will be conducted by Peninsula Clean Energy through direct outreach to customers. Additionally, we will partner with community organizations that have strong ties to targeted customer segments.

(a) Potential Outreach and Community Engagement Partners

As part of Peninsula Clean Energy's plans to outfit our customers with resilient energy systems, we recognize that communication with some customers will be more effective coming from established and familiar community partners. With these partners, we can build a coalition of support to engage parts of our customer base that are traditionally more difficult to reach. These customer segments include those the elderly, non-English speakers, those with physical and mental disabilities, and the medically fragile. By working with community partners, we will collect information to help us develop programs that will be most effective and have the most impact on these customers and will communicate to these customers more successfully about the availability of programs.

We have begun the process of identifying some of the stakeholders that Peninsula Clean Energy can work with to reach these populations. Each of the stakeholders can serve as an outreach partner in support of Peninsula Clean Energy's effort to develop resilient energy solutions in San Mateo County.

Table 9 identifies some of these potential partners and the communities they serve.

Table 9: Potential Community Outreach Partners

Outreach Partner	Communities Served
San Mateo County (SMC) Health	Aging and Adult Services, California Children's Services, mental health and substance abuse communities, and emergency medical services
SMC Healthcare Coalition	Hospitals, skilled nursing facilities, home health, hospices, dialysis centers, Red Cross, ombudsman
SMC and City Fire Chiefs	Fire stations, firefighters, medically fragile customers
SMC and City Police Chiefs	Police officers
SMC Sheriff	Law enforcement stakeholders, Latino community through Community Alliance to Revitalize our Neighborhood (CARON) program
Private Healthcare Providers	Patients, medical professionals, insurance providers
Medical Equipment Providers	Healthcare providers, hospitals, patients with medical appliances
Faith Institutions	Faith communities, homeless
Coastside Seniors	Older adults, adults with disabilities, caregivers on the coast
California Foundation for Independent Living Centers	People with disabilities
Red Cross	Donors, volunteers, at-risk communities, communities in a disaster, military
SMC Office of Emergency Services	Managers of critical infrastructure
Center for Independence of Individuals with Disabilities	Residents with disabilities
Center for Accessible Technologies	Residents with disabilities, seniors
Medical Health Operation Area Coordinator (MHOAC)	24/7 point of contact for 17 different foundations; representatives from 13 health divisions and the healthcare coalition (comprised of 60+ healthcare facilities)
Emergency Managers Association (EMA)	City emergency managers, HSA, Red Cross
Community Emergency Response Team (CERT)	Community volunteers, first responders
Medical Advisory Committee	Fire joint powers authorities, Emergency Medical Services (EMS), hospitals, 911 responders

Peninsula Clean Energy may provide support to these partner organizations in various ways including expanding our outreach grant program to target the type of organizations listed above and providing financial resources for outreach. Other options may include providing educational materials, partnering to find third party sources of funding, coordinating on research projects related to these communities, or using partner organizations' communications channels for co-marketing efforts about these programs.

As mentioned above, part of the outreach process will require information collection to develop impactful programs and appropriately target customers. Some mechanisms we can employ in order to gather information on these customers include the following:

- Field surveys for customers with and without backup generation,
- Studies to identify different populations of our customer base,
- Research to identify the impact of grid outages related to PSPS events and / or natural disasters,
- Data collection and sharing, and
- Supporting County efforts to create a database of medically vulnerable customers.

(b) Education

San Mateo County is fortunate to have a community that is interested in and highly motivated to install solutions based in clean energy. However, using clean energy solutions for energy resiliency is a relatively new use case and there are many opportunities for Peninsula Clean Energy to educate our customer base on their options and our programs. We are a central agent capable of disseminating educational resources to our customers, and we plan to leverage that position by facilitating the creation of educational assets for our customers' consumption over the next several years.

These educational materials may include such topics as:

- Clean energy technologies for energy resiliency;
- The importance of being able to “island” during a power outage;
- Duration of power outage that distributed solutions can withstand;
- Impact of distributed resources on electricity bills under different rate schedules;
- Economic feasibility of installing storage with TOU arbitrage and demand charge management;
- Comparison of the economics of clean back up power versus diesel backup;
- Environmental, health and safety issues associated with diesel backup;
- Prioritizing which appliances or equipment should be run on backup power;
- Identifying local installers who can provide for resiliency needs.

Peninsula Clean Energy plans to develop informative material related to energy resiliency generally as well as the programs we deploy. Educational efforts can drive participation in high-touch community events where we can inform the public of our energy resiliency solutions.

2. Policy Considerations

As part of this resiliency strategy, Peninsula Clean Energy will also work to identify regulatory or legislative barriers to deploying DERs for energy resiliency and identify opportunities to educate policy makers or engage in policy processes.

(a) Community-Scale Microgrids

Presently, widescale deployment of microgrids is inhibited by regulatory barriers. The rules and regulations for investor-owned utilities to interconnect systems have not kept up with emerging microgrid technologies to allow deployment of microgrids to occur in a streamlined and cost-effective fashion. Interconnection standards and technical standards to guide utility review of

proposed microgrids leave too much discretion to utility engineers who often request onerous system upgrades based on worst-case scenario analysis. Moreover, business models for microgrids are only now emerging after years of effort at the state level to define microgrids and support their deployment through grant funding.

However, this is starting to change with the passage of SB 1339 (Stern) in 2018, which requires the CPUC to remove barriers to microgrid development and facilitate the deployment of microgrids in the state by December 31, 2020. Peninsula Clean Energy supported this legislation as an avenue to foster innovation in the energy sector consistent with Board policies.

On September 12, 2019, the CPUC launched Rulemaking 19-09-009 to begin implementation of SB 1339. Peninsula Clean Energy has extensive contacts with stakeholders in the microgrid sector. Accordingly, we have taken a lead role in coordinating CCA activity in the docket including through the filing of joint CCA opening and reply comments on the scope and schedule for the docket. Our comments focus on near term efforts to be undertaken in early 2020 to facilitate the deployment of microgrids in advance of the 2020 wildfire season. A workshop was held on December 12, 2019 to identify these near-term activities. Redwood Coast Energy Authority and EBCE presented on CCA microgrid efforts and provided recommendations to stakeholders on rules and regulations that need to change to allow customer-operated microgrids to flourish. PG&E presented a proposal to provide resiliency to communities by identifying “safe circuits” which can remain energized during a PSPS event. We are engaging with PG&E to explore a partnership to develop “circuit-level” programs. Peninsula Clean Energy will continue to lead CCA efforts in this docket to ensure CCAs have a clear and positive role in facilitating deployment of microgrids in their communities.

If this docket stays on track, the programs developed by Peninsula Clean Energy will be able to take advantage of the streamlined processes authorized in the docket to accelerate deployment of microgrids in our service territory.

Additionally, it is anticipated that legislative efforts may occur in the 2020 legislative session to further support the deployment of microgrids including funding support from the state budget, greenhouse gas funds, or bonding authority. However, this is still at the very early stages and Peninsula Clean Energy is actively engaging with the relevant committees and stakeholders in the Capitol to work on the topic during the coming 2020 session by holding in-person meetings with key legislators and their staff and meeting with other stakeholders.

(b) Resource Adequacy

Unlocking new value streams for DERs is a way that CCAs can promote the proliferation of clean, distributed technologies. A potential value stream that Peninsula Clean Energy is helping to better define is RA. RA is a reliability product that Peninsula Clean Energy is required to purchase to maintain grid reliability. DERs are currently eligible to provide RA through the PDR mechanism. However, only a small amount of RA has been provided through this mechanism due to complexities around how RA is measured and how resources can count toward an LSE’s RA obligation.

Over the past two years, Peninsula Clean Energy has been very active in Rulemaking 17-09-020, which addressed various topics concerning resource adequacy. On November 13, 2019, the Commission released its latest rulemaking (R.19-11-009) concerning the resource adequacy program to continue refinement and review of the program. On November 26, 2019, the CPUC issued a proposed decision on how to count hybrid (solar + storage) resources for RA purposes

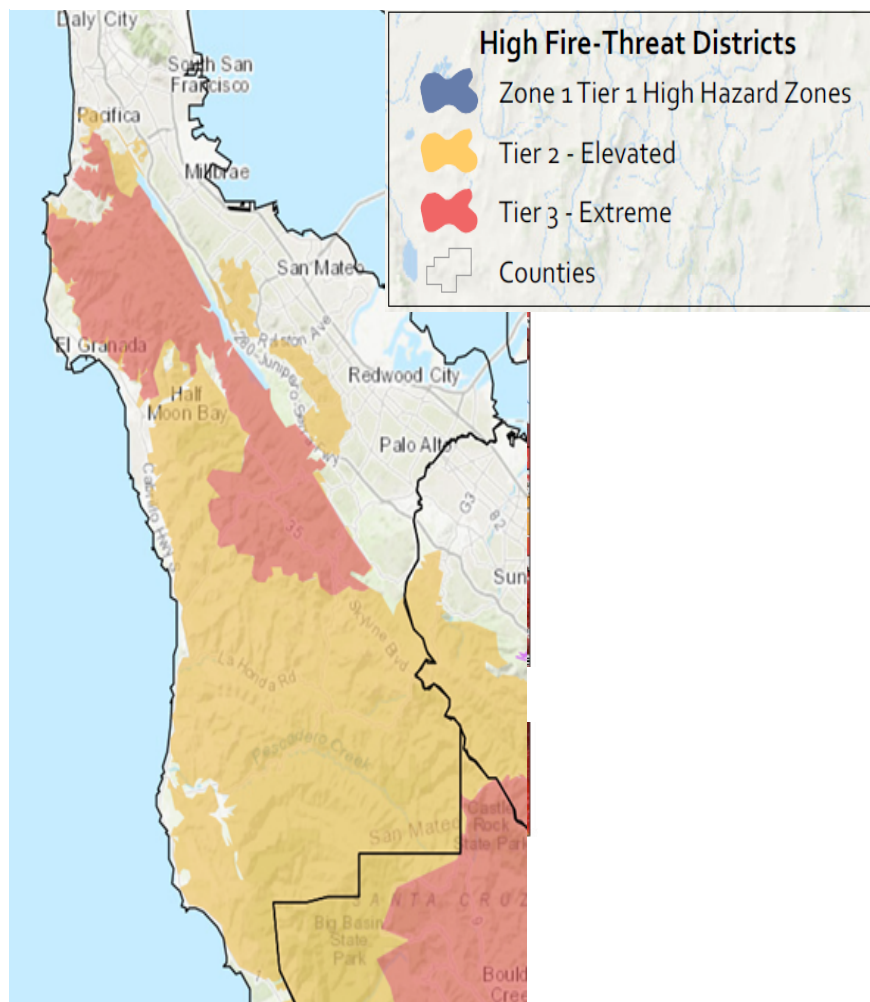
under the R.17-09-020. This decision declined to address the question of counting these types of systems for behind the meter resources and indicated this would be more fully addressed in the successor RA proceeding – R.19-11-009. We will continue to take an active role in this proceeding to ensure the RA rules are designed to allow CCAs to fully count local resources towards RA requirements.

Additionally, in July 2019, the California Independent System Operator (CAISO) issued a white paper regarding how it proposes to account for hybrid resources. Peninsula Clean Energy has been coordinating with other CCAs to engage in this stakeholder process, which is expected to conclude in Q2 2020.

VI. Appendix

1. Hazard Maps¹¹

Figure 10: High Fire Threat Districts



¹¹ Figure 10: <https://www.cpuc.ca.gov/FireThreatMaps/>; Figures 11 and 12: <https://planning.smcgov.org/documents/san-mateo-county-hazards-earthquake-liquefaction-shaking>; Figure 13: <https://seachangesmc.org/vulnerability-assessment/>

Figure 11: Earthquake Liquefaction and Landslide Risk

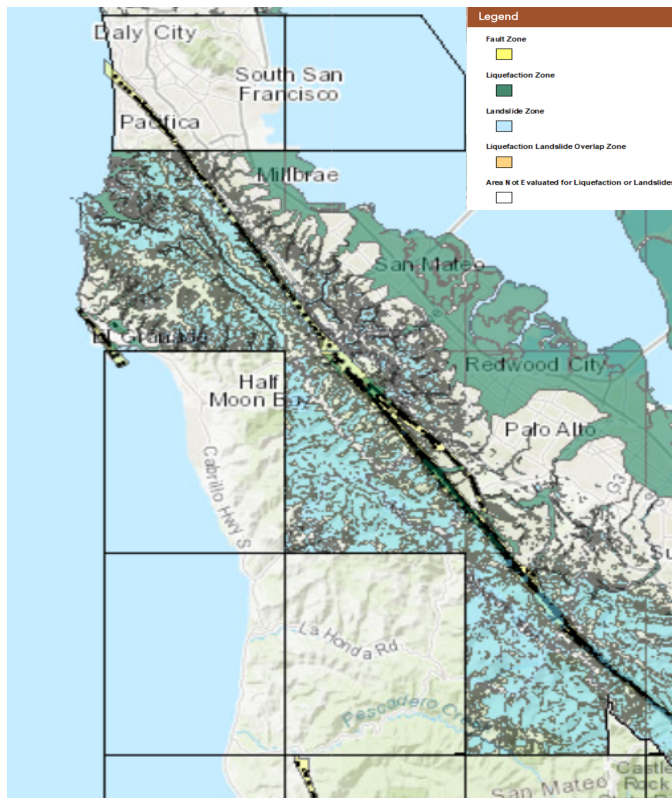


Figure 12: Earthquake Shaking Risk

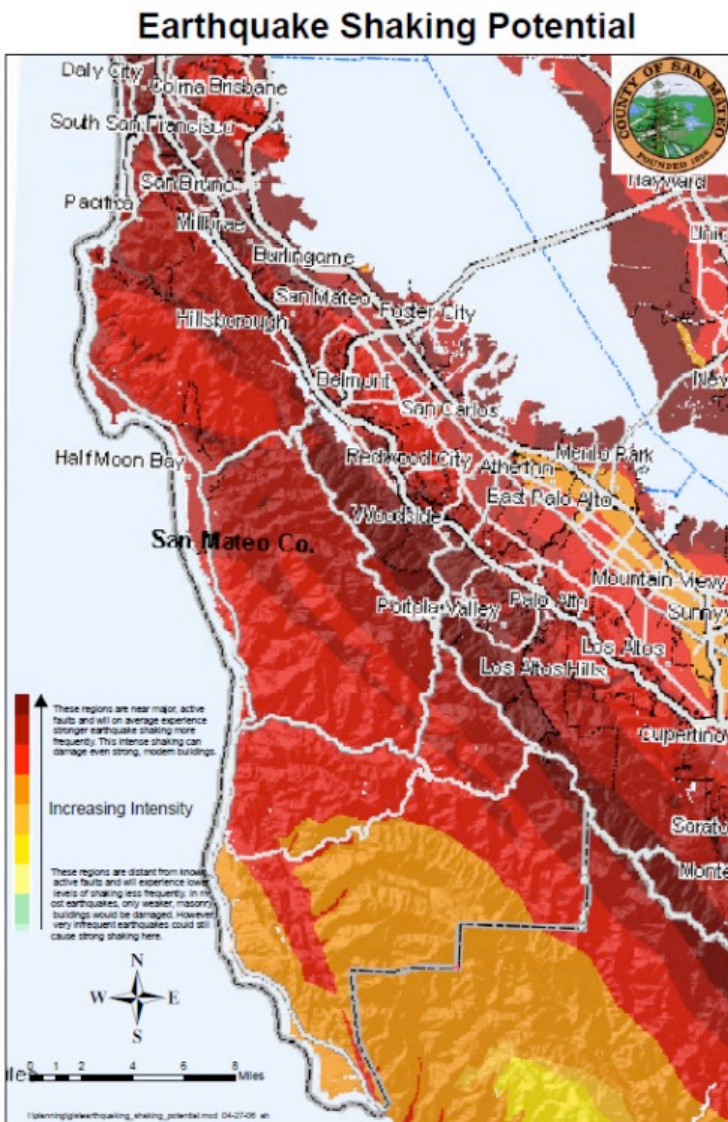
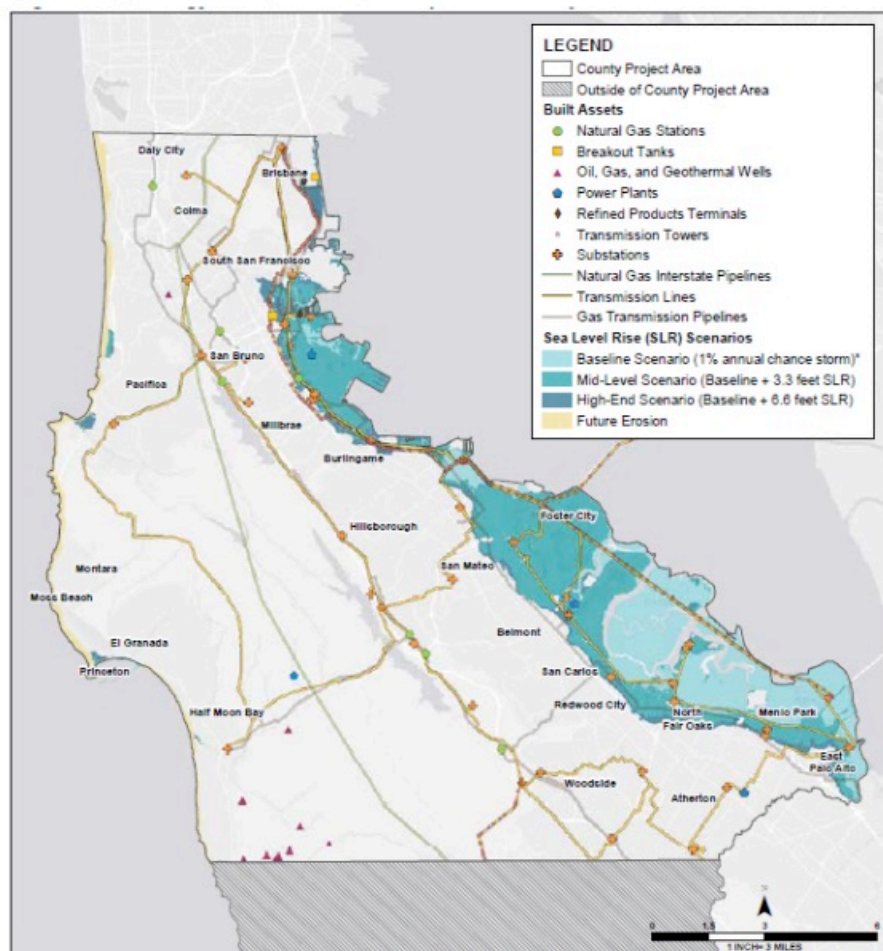


Figure 13: Sea Level Rise Risk and Energy Infrastructure

Figure 38.9 Energy Infrastructure and Pipelines in Project Area



Data source: National Pipeline Mapping System 2015; California Energy Commission 2015; California Energy Commission 2014; County of San Mateo 2015; Federal Communications Commission 2010; Wireless Telecommunications Bureau 2010

This map is intended to improve sea level rise awareness and preparedness by providing a regional-scale illustration of inundation and coastal flooding due to specific sea level rise and storm surge scenarios. This map is not detailed to the parcel-scale and should not be used for navigation, permitting, regulatory, or other legal uses.

*1% annual chance storm is a storm that has a 1 in 100 chance of occurring in any given year, and on the Bayside generally results in about a 42 inch increase of total water levels. On the Coastside, the water level increase could be greater due to wave action.

Note on erosion modeling: Erosion modeling used in this study does not consider shoreline armoring due to a lack of information on the condition and life expectancy of existing structures. The 2009 Philip Williams and Associates study recognizes that future shoreline protection is likely in general but could not predict where and how these would appear. In this case, developing predictive erosional models is impractical and exceedingly difficult.

2. Definition of Metrics

Avoidance of power outage costs to cities: Cities incur cost during power outages due to a range of factors, including additional or overtime personnel, damaged infrastructure, and added stress on medical facilities. By reducing the impact of power outages, our programs can reduce these costs, and we will endeavor to track those reductions.

Avoidance of disruption to critical infrastructure: Critical infrastructure, such as emergency response centers, hospitals, and water pump stations, need to operate even during times of power outages. Their continued operation is a vital need to the function of our society, and our energy resiliency solutions can help to reduce operational disruption.

Cost of deployment to Peninsula Clean Energy: Measure the cost of new programs in comparison to the benefits to Peninsula Clean Energy and our customers.

Number of customers directly impacted: Customers who receive a tangible and direct benefit from program participation, such as new microgrids on their homes.

Number of customers indirectly impacted: Customers who have access to new services, through Peninsula Clean Energy's program, including critical infrastructure remains operable or a Community Resiliency Center within walking distance.

Number of medically threatened customers directly impacted: Medically threatened customers with new energy system deployed at their house.

Number of medically threatened customers indirectly impacted: Medically threatened customers with access to services during a power outage including a Community Resiliency Center within walking distance.

Number of customers in sensitive communities directly impacted: Customers in sensitive communities with new energy system deployed at their house.

Number of customers in sensitive communities indirectly impacted: Customers in sensitive communities with access to services during a power outage including a Community Resiliency Center within walking distance.

Air quality improvements: Track emissions reductions due to replacing diesel generators with cleaner solutions. Emissions from diesel generators includes particulate matter that includes "numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene."¹²

¹² "Overview: Diesel Exhaust & Health":
<https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health>

Impact on goal to be 100% renewable on a time-coincident basis by 2025: New energy clean systems that address customers' backup power needs may be able to help Peninsula Clean Energy reach this goal when they are not used to mitigate the impacts of power outages by producing renewable energy to charge energy storage during the day, and discharging renewable energy from the energy storage in other hours.

Reduction in GHG emissions: Track GHG emissions reductions due to replacing diesel generators with cleaner solutions.

Scale of Deployment (MW or MWh): Volume of new systems deployed.

3. Additional Funding Sources

In developing programs to support energy resiliency, Peninsula Clean Energy will leverage third party funding in addition to Peninsula Clean Energy's funds. Table 10 below identifies funding sources that we have currently identified. As we develop and refine programs, we will continue to work to identify funding sources that can be leveraged for these efforts.

Table 10: Third Party Funding Sources

Governing Body	Source	Funding Amount	Purpose
BAAQMD	Climate Tech Finance Budget	TBD	Direct loans to public agencies or loan guarantees to small businesses for emerging or early stage technologies that reduce GHG emissions – has expressed interest in funding resiliency solutions
California Alternative Energy and Advances Transportation Financing Authority (CAEATFA)	Small Business Financing Program (SBF)	\$10,000 - \$5M per project	Innovative and effective financing solutions to assist in reducing the state's greenhouse gas emissions. SBF program helps small businesses access attractive financing terms for energy efficiency retrofits by extending a credit enhancement to finance companies, which helps them mitigate risk.
CEC	Energy Storage Demonstration Grant	\$20 MM	Demonstrate long-duration (10h+), non-Lithium energy storage technologies
CPUC	SGIP Equity Budget	\$830 MM	Incentives for new energy systems for vulnerable households located in Tier 2 and Tier 3 HFTDs, critical facilities serving those districts, and customers located in those districts that have participated in low-income solar programs. Economic and workforce development to DACs, gas generation reduction in DACs.
CPUC	SGIP Critical Resiliency Needs Budget	\$471 MM	Energy storage for residential customers in T2 / T3 HFTDs who are also eligible for the equity budget, Medical Baseline, or have a life-threatening condition if electricity is disconnected.
PG&E	TBD	TBD	Governor Newsom has called for PG&E to compensate communities affected by PSPS events. Cities are currently undergoing the cost accounting related to these efforts, and as such, PG&E might be required to provide funding for energy resiliency programs in the future.
State of California	CA General Fund appropriation	\$75 MM	Securing equipment, fuel storage, backup energy for critical facilities, communications equipment, developing and conducting plans for PSPS preparation, risk assessment, public access resource centers.

4. Acronyms

Acronym	Definition
BAAQMD	Bay Area Air Quality Management District
CAC	Citizens Advisory Committee
CAISO	California Independent System Operator
CalEnviroScreen (CES)	California Communities Environmental Health Screening Tool
CalEPA	California Environmental Protection Agency
CARE	California Alternate Rates for Energy
CARON	Community Alliance to Revitalize our Neighborhood
CCA	Community Choice Aggregator
CEC	California Energy Commission
CERT	Community Emergency Response Team
CES	California Communities Environmental Health Screening Tool
CPUC	California Public Utilities Commission
CRC	Community Resource Center
CVI	Community Vulnerability Index
DAC	Disadvantaged Community
DCFC	Direct Current Fast Charging
DERs	Distributed Energy Resources
EBCE	East Bay Community Energy
EMA	Emergency Managers Association
EMS	Emergency Management Services
EV	Electric Vehicle
FERA	Family Electric Rate Assistance
FY	Fiscal Year
GHG	Greenhouse Gas
HFTDs	High Fire Threat Districts
HPWH	Heat Pump Water Heater
kW	Kilowatt
kWh	Kilowatt-hour
LSE	Load-Serving Entity
LVADs	Left Ventricular Assist Devices
MHOAC	Medical Health Operation Area Coordinator
MUDs	Multi-Unit Dwellings
MW	Megawatt
MWh	Megawatt-hour
NEM	Net Energy Metering
PDR	Proxy Demand Response
PG&E	Pacific Gas and Electric Company
PPA	Power Purchase Agreement

PSPS	Public Safety Power Shutoff
PV	Photovoltaic
RA	Resource Adequacy
RFI	Request for Information
RFP	Request for Proposals
SGIP	Self-Generator Incentive Program
SMC	San Mateo County
SVCE	Silicon Valley Community Energy
SVP	Silicon Valley Power
T2 / T3 HFTD	Tier 2 / Tier 3 High Fire Threat District
TOU	Time-of-Use



PENINSULA CLEAN ENERGY AUTHORITY

Board Correspondence

DATE: January 13, 2020

BOARD MEETING DATE: January 23, 2020

SPECIAL NOTICE/HEARING: None

VOTE REQUIRED: Majority Present

TO: Honorable Peninsula Clean Energy Authority Board of Directors

FROM: Rafael Reyes, Director of Programs, Peninsula Clean Energy Authority

SUBJECT: Reach Code Assistance Extension and Consumer Awareness Program

RECOMMENDATION:

Approve the proposed three-year program for up to \$650,000 to include the following programs:
a) Extended Reach Code Assistance and Technical Training (\$250,000), and b) New Building Electrification Consumer Awareness Program (\$400,000).

BACKGROUND:

In September 2018, the Board approved the PCE Program Roadmap, which identifies programs for 2019 and beyond to include transportation measures on EV Infrastructure as well as Building Electrification. Building codes for new buildings and major modifications are the most cost-effective points at which to install Electric Vehicle Charging Infrastructure (EVCI) and electric appliances (such as heat pump water heaters) compared to retrofitting existing parking lots and buildings.

In January 2019 the Board approved a contract with TRC Engineers to provide technical assistance to local governments for the development of enhancements to local building codes, known as "reach codes", to deliver increased EV readiness and all-electric buildings. This program is in partnership with Silicon Valley Clean Energy (SVCE) and the San Mateo County Office of Sustainability. SVCE is sharing the costs. The TRC contract covered the period January 25, 2019 to June 30, 2020 and was for a total of \$300,000, of which approximately half has been allocated for work in PCE and SVCE territories respectively.

The ongoing Reach Codes program has delivered:

- a) a public process for development of model reach codes,
- b) model codes for municipalities to consider refining and adopting,
- c) technical assistance for adoption and implementation,
- d) tools and resources for adoption and implementation, and

- e) grants of \$10,000 for municipalities considering reach codes.

When the program was initially designed in late 2018 it was structured so that all cities could participate if desired though it was uncertain what the level of interest would be. Conservative internal estimates were that 6 to 7 municipalities in the County would engage and follow through by the end of 2019. Instead, more than half the municipalities in San Mateo County have engaged seriously (14 with letters of intent) but the process has taken longer than anticipated in most cases. This was in-part a result of one municipality (Menlo Park) taking the initiative to develop its own approach which, due to a number of benefits (greater efficacy and simplicity) became a new model that other agencies opted to emulate in the latter part of 2019. This shift required unanticipated additional research, dialogue with state agencies, adjustment to materials and additional stakeholder education by the project team (PCE, SVCE and consultants). By the end of 2019, four jurisdictions in the San Mateo County adopted reach codes that promote all-electric buildings and/or EV infrastructure (Brisbane, Menlo Park, Pacifica, and San Mateo). Numerous cities in our territory are still exploring reach codes with plans to adopt in 2020.

Throughout this process, Peninsula Clean Energy and our consultants have been heavily engaged with city council members, local government staff and building sector stakeholders, including market rate and affordable housing developers, responding to numerous concerns and providing technical assistance. The technical assistance has covered a range of topics including the specifics of the prospective building codes, options for the codes, technical challenges, options for builders, cost considerations and related factors. These discussions have included dialogue at council meetings, stakeholder roundtables, one-on-one meetings, and interactions through emails and phone calls. With several developers this has included reviewing specific building designs and providing recommendations on all-electric approaches. In most cases, concerns from developers are yielding greater time to refine codes and slower uptake of reach codes than anticipated.

Specific lessons learned from the process include:

1. **Deeper stakeholder engagement:** Approaches by municipalities have varied with some agencies opting for more extensive stakeholder dialogues to iterate on the codes to create greater alignment among stakeholders. This additional dialogue has proven highly beneficial in surfacing specific needs and refinements.
2. **Developers' technical concerns are highly specific:** The concerns, such as issues with multi-family heat pump water heating and EV charging options, required significant technical analysis of specific situations including equipment sizing, space requirements, electrical loads, transformer requirements and related issues. This has resulted in reorienting some technical assistance anticipated to be solely for municipal staff to providing technical analysis for specific projects directly to developers providing design options or validating concerns.
3. **Some issues require developer and contractor education and training:** Many concerns stem from unfamiliarity with the all-electric equipment availability and cost, design options, installation approach, operation and maintenance. Lack of familiarity among designers and contractors especially factors heavily in cost concerns raised especially by affordable housing providers reflecting the need for education and training of these stakeholders.

4. **Desire for gas stoves reflect consumers preference and lack of awareness:** Most builders also stressed that stove choices are driven by market demand. There is a need for consumer education on electrification benefits generally and induction stoves specifically.

Overall, this process has been more intensive than originally anticipated and a number of municipalities have pushed back adoption of reach codes into 2020 to allow additional dialogue with stakeholders and refinement of prospective codes. We anticipate a number of cities to request additional technical assistance for adoption and implementation in 2020 possibly through June. However, our current technical assistance is expected to exhaust its budget by the end of February 2020.

We are not alone. In addition, the technical assistance requests from affordable and market rate developers are leading some agencies such as East Bay Community Energy, Silicon Valley Clean Energy and San Jose Clean Energy to explore additional forms of education and technical assistance to support the implementation of adopted reach codes or support additional adoption. Silicon Valley Clean Energy also has an existing public education effort that it plans to further develop in 2020.

DISCUSSION:

The program outlined here is intended to address the following needs arising from the 2019 reach code effort. The programs are not intended to address the full range of needs associated with existing building electrification. Multiple programs are under development by regional entities and PCE is still assessing specific needs and approaches for existing buildings. Additional programs are anticipated for later this year. The programs discussed here are specific to the following time sensitive needs:

- a) Support cities still intending to adopt reach codes in 2020 and facilitate harmonization of the adopted codes where feasible
- b) Address technical information needs among designers and builders, especially for affordable housing, to both support all-electric design in all jurisdictions and reduce perceived challenges leading to opposition to reach codes
- c) Provide technical training to contractors to reduce costs and create a steady pipeline
- d) Provide more extensive information on the up-front and ongoing costs and benefits of building electrification compared to natural gas for consumers and other decision-makers

PCE staff is proposing to offer support that will target key building sector stakeholders including residents, builders, designers and contractors. The efforts will be two-fold as described below:

1. **Extended Reach Code Assistance and Technical Training:** As noted above, numerous cities and building stakeholders need additional technical support to implement all-electric policies and construction beyond the current available technical assistance contract. To address that gap the proposed Reach Code Assistance and Technical Training program includes the following goals:
 - a) Continue supporting municipalities seeking to adopt, implement or harmonize reach codes,

- b) Ensure contractors, designers and builders, especially for affordable housing, have foundational training to ensure all-electric and EV ready buildings are built throughout the region (whether a reach code is in place).

Staff anticipates at least 7 additional agencies adopting reach codes in 2020 with this support and more importantly, ensuring that designers, builders and contractors – especially affordable housing projects – are able to meet the new requirements.

The program will include the following elements:

- a) **Municipal Code Assistance:** This element will provide support for cities still aiming to adopt reach codes in 2020. There may also be an opportunity to increase uniformity throughout the region. The consultant team will work with the multiple jurisdictions and offer support to advance uniformity, adoption, and implementation.
- b) **Develop Financial and Technical Materials:** The team will develop materials on the various approaches for new all-electric buildings and major remodels. Case studies by building type with details on the design strategies and technologies used, along with more details on the first and lifetime costs will be provided. This material will be available as a resource to all stakeholders to make an informed decision to build all-electric. The technical content will also support the marketing program discussed further below.
- c) **Designer and Builder Guidance:** The consultant team will also offer professional advice and recommend strategies to build all-electric to designers and developers working within the county. The services offered could include a “hotline” phone number or email that developers can use to send in their questions pertaining to the project and the consultant will follow up with specific recommendations and if needed also review construction documents and equipment bids. Developers will be offered a specified number of hours of technical assistance to draw on flexibly. Special emphasis will be given to affordable housing developers in the area by providing them more time and in-depth assistance. Possible areas of assistance would include organizing design charrettes, assisting affordable housing developers with RFPs and RFQs to use so that they can identify project consultants, equipment option analysis for space and water heating and cooling, and developing elements such as building commissioning scope for the developer to implement during operation. The team will partner with municipalities and developer associations to organize developer round tables and trainings to effectively reach a larger audience.
- d) **Contractor Training:** A parallel effort to the offer of technical assistance to developers and designers would include offering technical training to contractors on specific all-electric technology installation, operation and maintenance. This effort will help develop a steady pipeline of trained workforce that will be able to install these technologies in buildings (both new and existing). Topics would include technologies like heat pump water heaters, heat pump space heating and cooling, and panel upgrades. These trainings will be marketed to design consultants and specific trade contractors by partnering with trade organizations like IBEW and Building Industry Association (BIA) Bay Area.

Approach: Peninsula Clean Energy proposes to extend the current reach code assistance contract with TRC Engineers until the end December 2021 and to expand their scope to offer

support to municipalities, developers, designers and contractors. The training and technical assistance will be available for all building types, but we expect the majority of the participants to be affordable and market rate housing developers in the area. Currently 16 affordable housing developers work in our territory and through this effort we aim to be able to support at least 75% of these developers. We also expect to serve at least 16 market rate developers and an additional 10 commercial projects. SVCE has expressed interest in having the TRC Engineers contract extended for these services in their territory and, pending board approval anticipated in February, will share the costs on the contract extension.

2. Building Electrification Consumer Awareness: The reach code initiative also surfaced that consumer education is a major need. The benefits of all-electric buildings and examples of such buildings are not well-known in the community. To address that gap the proposed Building Electrification Consumer Awareness program includes the following goals:

- a) Provide building sector stakeholders (developers, contractors, designers and residents) education on the methods and associated costs and benefits of all-electric homes and appliances
- b) Connect consumers with programs and resources to upgrade to all-electric appliances
- c) Identify and establish partners to advance building electrification within the county

The program will include the following elements:

- a) **Showcasing all-electric buildings and technologies:** To create the awareness that all-electric buildings are “normal”, PCE will showcase all-electric homes and buildings by making them highly visible in the community. Designers and residents will be invited to submit projects in our territory that are either all-electric or have specific technologies like electric heating (space and water) or electric commercial cooking, along with information on its end-use type (single family, multi-family affordable or market rate, commercial kitchen, office, etc.), project size, year of construction, construction and operating costs, and design considerations and strategies. These buildings will be catalogued for reference in an online database. In addition, well designed projects will be selected to showcase electrification benefits through events and PCE’s website to developers, designers and residents and inspire them to build all-electric buildings. On-site walking tours along with virtual tours will also be offered to stakeholders to learn more about the specific strategies and technologies used on-site and provide a real-time experience of the space. These tours will be led by a “building electrification expert” who will be able to promptly address customers’ queries. The tours will be promoted to the general public through green groups, municipal partners and trade associations like the American Institute of Architects (AIA) San Mateo chapter.
- b) **Recognizing designers and builders:** It is important to recognize the leadership of the builders, residents and design teams that chose to build all-electric and minimize their carbon footprint. Selected projects that exhibit outstanding characteristics will be recognized through an annual award ceremony and through online communications. Efforts will be made to partner with existing established award programs like the Sustainable San Mateo County’s Green Building Award to enable us to reach larger audiences.

- c) **Engaging consumers on induction cooking:** Among the main pushbacks for complete building electrification have been from homeowners, renters, and local chefs who prefer gas cooktops and perceive them to be a superior cooking technology that allows better heat control. Builders perceive this as required due to consumer demand. Most people equate electric cooktops to the electric resistance coiled cooktops, and not induction cooktops which are highly efficient, fast, safe, easy to clean and provide much precise heat control. Induction cooking technology is fairly new on the American market and most customers have never used an induction cooktop. Approaches may include showcasing restaurants with induction stoves, temporary test kitchens, and induction cooktop check-outs for customers to cook on induction cooktops and experience its benefits first-hand. We will explore partnerships with manufacturers and suppliers for the events and local Energy Watch programs. Because cooking techniques vary by different cuisines, efforts will be made to organize these test kitchens at specific events that target different cuisines. Some possible events where these test kitchens could be run include local farmers' markets, ethnic foods markets and festivals throughout the County.
- d) **Marketing campaign:** PCE's marketing efforts will focus on promoting PCE's electrification awareness events like the all-electric showcase projects and induction cooking events. This may include online ads, social media and collateral for PCE events and engagement of PCE community outreach partners. The campaign will complement other marketing efforts from the Bay Regional Energy Networks (BayREN), San Mateo County's Energy Watch program and the Building Decarbonization Coalition. It will connect interested residents to available resources to support their switch to all-electric appliances including trained contractors, forthcoming incentive programs from BayREN, and other programs as may be appropriate.

Approach: Peninsula Clean Energy's marketing department is proposed to lead this effort starting in FY 2020 for a 3-yr program budget of \$400,000. It is anticipated that approximately half the funds will support the events. These would include up to 6 all-electric building tours (on-site and virtual) and 6 test kitchens per year and an annual award ceremony for a total of 30 to 40 total events over the 3 year program period with the associated prizes, equipment, collateral and external consulting assistance. External consultants including partnerships with local celebrity chefs may be engaged for support on content development and event support. Finally, an estimated half the budget will be for promotion to our customers through various channels including social media ads, online ads, postcards and other print media. All materials need to be newly created and will require frequent updates based on data we gather through our activities. Consumer surveys will be required and associated data management will also be part of this portion of the budget.

FISCAL IMPACT:

For the Extended Reach Code Assistance and Technical Training, the existing Reach Code Technical Assistance contract would be extended until the end of 2021 for a total shared budget of \$450,000 with SVCE. SVCE is estimated to cover approximately \$200,000 with PCE covering approximately \$250,000. The original budget for TRC Engineers was \$300,000, which was about evenly divided between PCE and SVCE.

The Building Electrification Consumer Awareness campaign would be carried out for three consecutive years starting in FY 2020 for a 3-yr program budget of \$400,000.

The total fiscal impact for Peninsula Clean Energy for the three years is estimated to be \$650,000 for both Extended Reach Code Assistance and Technical Training, and the Building Electrification Consumer Awareness efforts.

RESOLUTION NO. _____

**PENINSULA CLEAN ENERGY AUTHORITY, COUNTY OF SAN MATEO, STATE OF
CALIFORNIA**

* * * * *

**RESOLUTION DELEGATING AUTHORITY TO THE CHIEF EXECUTIVE OFFICER
TO EXTEND AN AGREEMENT WITH TRC ADVANCED ENERGY TO PROVIDE
BUILDING REACH CODE CONSULTING SERVICES, IN AN AMOUNT NOT TO
EXCEED \$450,000 OVER TWO YEARS AND IN A FORM APPROVED BY THE
GENERAL COUNSEL.**

RESOLVED, by the Peninsula Clean Energy Authority of the County of San Mateo, State of California, that

WHEREAS, PCE was formed on February 29, 2016; and

WHEREAS, assisting local governments in adopting and implementing building reach codes to reduce greenhouse gasses is part of PCE's program roadmap approved by the Board; and

WHEREAS, PCE issued an RFP on November 26, 2018, and received six proposals to provide these services; and

WHEREAS, TRC Advanced Energy was selected for their experience with the State of California building codes, building code development, and working with local governments; and

WHEREAS, PCE staff and TRC Advanced Energy executed an agreement on January 25, 2019 whose funding will expire in February 2020; and

WHEREAS, PCE has determined that additional technical assistance for local governments, developers and contractors is required for successful adoption and implementation of reach codes in new construction; and

WHEREAS, PCE has determined that additional technical assistance for local governments, developers and contractors is required for successful adoption and implementation of reach codes in new construction; and

WHEREAS, PCE and Silicon Valley Clean Energy jointly funded the contract with TRC Advanced Energy and Silicon Valley Clean Energy has expressed interest in continuing to fund the extension in the amount of \$200,000; and

WHEREAS, the Board wishes to delegate to the Chief Executive Officer authority to update the scope and execute the aforementioned extension Agreement in an amount not to exceed \$450,000 over two years which includes an estimated \$200,000 funded by Silicon Valley Clean Energy for services in its territory.

NOW, THEREFORE, IT IS HEREBY DETERMINED AND ORDERED that the Board delegates authority to the Chief Executive Officer to: Finalize and execute an extension Agreement with the Contractor in an amount not to exceed \$450,00 over two years and in a form approved by the General Counsel in a form approved by the General Counsel.

* * * * *

RESOLUTION NO. _____

**PENINSULA CLEAN ENERGY AUTHORITY, COUNTY OF SAN MATEO, STATE OF
CALIFORNIA**

* * * * *

**RESOLUTION APPROVING BUILDING ELECTRIFICATION CONSUMER
AWARENESS PROGRAM BUDGET IN THE AMOUNT OF \$400,000 OVER THREE
YEARS**

RESOLVED, by the Peninsula Clean Energy Authority of the County of San Mateo, State of California, that

WHEREAS, PCE was formed on February 29, 2016; and

WHEREAS, swapping natural gas appliances to electric appliances from buildings is an important solution to reducing climate change pollution and improving the local economy; and

WHEREAS, there is a lack of consumer awareness and resources dedicated to building electrification benefits and costs; and

WHEREAS, recognition of community leaders including designers and owners in the all-electric building sector is a strategy to highlight exemplars in our territory; and

WHEREAS, there is a need to educate the market on the benefits of induction cooktops and provide a hands-on experience with a sustained program.

NOW, THEREFORE, IT IS HEREBY DETERMINED AND ORDERED that the Board approves allocation of \$400,000 over three years for a building electrification awareness program on January 23, 2020.

* * * * *



**PENINSULA CLEAN ENERGY
Board Correspondence**

DATE: January 10, 2020
BOARD MEETING DATE: January 23, 2020
SPECIAL NOTICE/HEARING: None
VOTE REQUIRED: Majority Present

TO: Honorable Peninsula Clean Energy Authority Board of Directors
FROM: Jan Pepper, Chief Executive Officer, Peninsula Clean Energy
SUBJECT: Amendment to Policy on Energy Supply Procurement Authority

RECOMMENDATION:

The Executive Committee recommend that the Board approve an amendment to PCE's Policy on Energy Supply Procurement Authority to a) extend CEO's authority to approve energy procurement contracts specific to local resource adequacy with terms up to thirty-six (36) months and b) allow CFO authority to approve energy procurement contracts up to twelve (12) months, when CEO is unavailable and with prior written approval from CEO and c) allow CEO authority, in consultation with the General Counsel, the Board Chair, and other members of the Board as CEO deems necessary to execute amendments to Energy Procurement contracts that had previously been approved by the Board.

BACKGROUND:

Energy procurement, conducted by PCE staff and CEO under the guidance of the Board of Directors, includes analyzing resource needs to meet PCE goals and procuring various energy products at various term lengths. PCE procures the following energy products:

- Resource Adequacy;
- System Energy;
- GHG-Free Energy;
- PCC 1 Eligible Renewable Energy; and
- PCC 2 Eligible Renewable Energy.

In December 2017, the Board passed Policy Number 15 related to Energy Supply Procurement Authority. This policy authorized the Chief Executive Officer to approve agreements with terms of twelve months or less. The CEO is also authorized to approve agreements up to five years in consultation with the General Counsel and Board Chair.

Peninsula Clean Energy has certain obligations to procure Resource Adequacy each year. These obligations are set by the California Public Utilities Commission (CPUC) and we are required to demonstrate compliance with these obligations by October 31 each year. In 2019, the CPUC adopted a decision to modify compliance obligations for local resource adequacy from a one-year forward demonstration to a three-year forward demonstration. The demonstration requirements must be shown in seven (7) local areas as compared to two (2) local areas in prior years. This has resulted in increased competition in the market, longer contract terms, and a higher number of contracts, sometimes for very small volumes.

The market for local resource adequacy is highly competitive and there is a limited supply of resources within each local area. PCE has more than doubled its volume of contracts for resource adequacy from 39 contracts executed in 2018 to 91 contracts executed in 2019. Due to the competitive nature of this product, Staff often needs to react quickly to execute contracts for local resource adequacy to ensure PCE does not lose out on opportunities to further meet its resource adequacy obligations.

DISCUSSION:

The market for local resource adequacy is highly competitive due to the limited supply of resources to procure from in each local area. PCE has more than doubled its volume of contracts for resource adequacy from 39 contracts executed in 2018 to 91 contracts executed in 2019. The increase is attributed to the number of contracts for small volumes of local resource adequacy that were necessary to execute in order to meet PCE's compliance obligations across a larger number of local areas.

Due to the competitive nature of this product, Staff often needs to react quickly to execute contracts for local resource adequacy to ensure PCE does not lose out on an opportunity to further meet its resource adequacy obligations. The current delegation of authority policy limits the ability of PCE to act quickly to take advantage of local resource adequacy energy procurement opportunities that may arise. Staff recommend modifying PCE's current energy supply procurement authority policy related to local resource adequacy to allow PCE to be nimble in energy procurement opportunities for local resource adequacy.

Operating CCA's have a variety of Energy Procurement Authority policies. The following table summarizes the details of their policies. Some CCAs updated their policies in 2019 due to the changes in regulation for local resource adequacy.

CCA	Length Authority Restrictions	Amount Authority Restrictions
Peninsula Clean Energy	<ul style="list-style-type: none"> CEO can procure up to one (1) year or under five (5) years with Board Chair & General Counsel consultation 	<ul style="list-style-type: none"> None
Monterey Bay Community Power	<ul style="list-style-type: none"> CEO authority up to three (3) years Director of Power Resources up to two (2) years 	<ul style="list-style-type: none"> CEO - \$40MM Director of Power Resources – \$30MM
Silicon Valley Clean Energy	<ul style="list-style-type: none"> CEO can procure up to one (1) year and up to five (5) years for Board-approved Master Agreements CEO can procure RA contracts up to five (5) years 	<ul style="list-style-type: none"> None
East Bay Community Energy	<p>In accordance with Risk Mgmt Policy</p> <ul style="list-style-type: none"> CEO no restriction COO up to two (2) years Director of Power Resources up to one (1) year 	<p>In accordance with Risk Mgmt Policy</p> <ul style="list-style-type: none"> CEO - none COO - \$10MM Director of Power Resources - \$2MM With dual signatures, COO, Director of Power Resources have equivalent authority to CEO
MCE Clean Energy	<ul style="list-style-type: none"> CEO can procure up to one (1) year Discussion with Technical Committee or Ad Hoc Committee for contracts up to five (5) years Technical Committee or Board approval required for contracts over five (5) years. 	<ul style="list-style-type: none"> None
Sonoma Clean Power	Board Chair and Vice Chair approval required for contracts over 10 years	<p>No Board approval needed if:</p> <ul style="list-style-type: none"> The contract cost is less than \$5MM with term less than (3) years; or The contract cost is less than \$250MM with term less than ten (10) years

PCE recommends changing the current Energy Supply Procurement Authority to include specific length-based policies for local resource adequacy and delegating certain authority to the CFO to approve resource adequacy contracts. PCE also recommends delegating authority to the CEO to approve amendments to contracts that were previously approved by the Board, as this is not specified in the current policy. These recommendations better align with the policies other CCAs have adopted. It will also allow PCE the mobility to enter into opportune energy contracts, while preserving the Board's oversight authority.

1) Short-Term Agreements:

- a. Chief Executive Officer has authority to approve Energy Procurement contracts with terms of twelve (12) months or less, in addition to contracts for Resource Adequacy that meet the specifications in section (b) and in Table 1 below.
- b. Chief Executive Officer has authority to approve Energy Procurement contracts for Resource Adequacy that meet PCE's three (3) year forward capacity obligations measured in MW, which are set annually by the California Public Utilities Commission and the California Independent System Operator for compliance requirements.

Table 1:

Product	Year-Ahead Compliance Obligation	Term Limit
Local Resource Adequacy	In years 1 & 2, must demonstrate capacity to meet 100% of monthly local obligation for years 1 and 2 and 50% of monthly local obligation for year 3 by October 31 st of the prior year	Up to 36 months
System Resource Adequacy	In year 1, must demonstrate capacity to meet 90% of system obligation for summer months (May – September) by October 31 st of the prior year	Up to 12 months
Flexible Resource Adequacy	In year 1, must demonstrate capacity to meet 90% of monthly flexible obligation by October 31 st of the prior year	Up to 12 months

- c. Chief Financial Officer has authority to approve any contract for Resource Adequacy with a term of twelve (12) months or less if the CEO is unavailable and with prior written approval from the CEO.
- d. The CEO shall report all such agreements to the PCE board monthly.

- 2) Medium-Term Agreements:** Chief Executive Officer, in consultation with the General Counsel, the Board Chair, and other members of the Board as CEO deems necessary, has the authority to approve Energy Procurement contracts with terms greater than twelve (12) months but not more than five (5) years, in addition to Resource Adequacy contracts as specified in Table

1 above . The CEO shall report all such agreements to the PCE board monthly.

- 3) **Intermediate and Long-Term Agreements:** Approval by the PCE Board is required before the CEO enters into any Energy Procurement contract with a term greater than five (5) years.
- 4) **Amendments to Agreements:** Chief Executive Officer, in consultation with the General Counsel and the Board Chair, or Board Vice Chair in the event that the Board Chair is unavailable, has authority to execute amendments to Energy Procurement contracts that were previously approved by the Board.

FISCAL IMPACT:

No fiscal impact

ATTACHMENTS

- A. Redline to Energy Supply Procurement Authority Policy
- B. Clean Energy Supply Procurement Authority Policy

RESOLUTION NO. _____

**PENINSULA CLEAN ENERGY AUTHORITY, COUNTY OF SAN MATEO, STATE OF
CALIFORNIA**

* * * * *

**RESOLUTION GRANTING AUTHORITY TO THE CHIEF EXECUTIVE OFFICER AND
LIMITED AUTHORITY TO THE CHIEF FINANCIAL OFFICER TO ENTER INTO
CERTAIN ENERGY PROCUREMENT CONTRACTS ON BEHALF OF PENINSULA
CLEAN ENERGY AUTHORITY**

RESOLVED, by the Peninsula Clean Energy Authority of the County of San Mateo, State of California, that

WHEREAS, the Peninsula Clean Energy Authority ("PCEA") was formed on February 29, 2016 as a Community Choice Aggregation program ("CCA"); and

WHEREAS, the PCE Board of Directors finds and declares that for shorter-term transactions involving system energy, resource adequacy capacity, and/or renewable and green-house gas free energy, it is appropriate for PCE management to have discretion in contracting, consistent with its responsibilities and expertise in efficiently operating the PCE programs; and

WHEREAS, the PCE Board of Directors finds and declares that time is often of the essence in such transactions, and that such transactions are unlikely to raise policy considerations that require PCE Board input; and

WHEREAS, the PCE Board of Directors finds and declares that for longer-term commitments, it is appropriate for the PCE Board to exercise a greater degree of oversight; and

WHEREAS, the PCE Board of Directors wishes to grant the Chief Executive Officer and in limited circumstances the Chief Financial Officer the authority to execute certain shorter-term PCE contracts that are consistent with PCE's forecasted energy consumption and approved budget.

NOW, THEREFORE, IT IS HEREBY RESOLVED that:

- A. For purposes of this Resolution, "Energy Procurement" shall mean all contracting for energy and energy-related products for PCE, including but not limited to products related to electricity (including system, green-house gas free and renewable), capacity, energy efficiency, distributed energy resources, demand response, and storage.
- B. The Chief Executive Officer and Chief Financial Officer is hereby authorized to enter into contracts on PCE's behalf as follows:
 - 1. **Short-Term Agreements:**
 - a. Chief Executive Officer has authority to approve Energy Procurement contracts with terms of twelve (12) months or less, in addition to contracts for Resource Adequacy that meet the specifications in section (b) and in Table 1 below.
 - b. Chief Executive Officer has authority to approve Energy Procurement contracts for Resource Adequacy that meet PCE's three (3) year forward capacity obligations measured in MW, which are set annually by the California Public Utilities Commission and the California Independent System Operator for compliance requirements.

Table 1:

Product	Year-Ahead Compliance Obligation	Term Limit
Local Resource Adequacy	In years 1 & 2, must demonstrate capacity to meet 100% of monthly local obligation for years 1 and 2 and 50% of monthly local obligation for year 3 by October 31 st of the prior year	Up to 36 months
System Resource Adequacy	In year 1, must demonstrate capacity to meet 90% of system obligation for summer months (May – September) by October 31 st of the prior year	Up to 12 months
Flexible Resource Adequacy	In year 1, must demonstrate capacity to meet 90% of monthly flexible obligation by October 31 st of the prior year	Up to 12 months

- c. Chief Financial Officer has authority to approve any contract for Resource Adequacy with a term of twelve (12) months or less if the CEO is unavailable and with prior written approval from the CEO.
 - d. The CEO shall report all such agreements to the PCE board monthly.
2. **Medium-Term Agreements:** Chief Executive Officer, in consultation with the General Counsel, have authority to approve energy procurement contracts with terms greater than twelve (12) months but not more than five (5) years, in addition to Resource Adequacy contracts as specified in Table 1 above. The CEO shall report all such agreements to the PCE board monthly.
 3. **Intermediate and Long-Term Agreements:** Approval by the PCE Board is required before the CEO enters into energy procurement contracts with terms greater than five (5) years.
 4. **Amendments to Agreements:** Chief Executive Officer, in consultation with the General Counsel and the Board Chair, or Board Vice Chair in the event that the Board Chair is unavailable, has authority to execute amendments to Energy Procurement contracts that were previously approved by the Board.

* * * * *



Policy Number: 15
Original Adoption Date:
December 14, 2017
Revised: January [], 2020

Deleted: <object>

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Subject: Energy Supply Procurement Authority

Policy: "Energy Procurement" shall mean all contracting for energy and energy-related products for PCE, including but not limited to products related to electricity, capacity, energy efficiency, distributed energy resources, demand response, and storage. In Energy Procurement, Peninsula Clean Energy Authority will procure according to the following guidelines:

1) Short-Term Agreements:

- a. Chief Executive Officer has authority to approve Energy Procurement contracts with terms of twelve (12) months or less, in addition to contracts for Resource Adequacy that meet the specifications in section (b) and in Table 1 below.
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<u>Local Resource Adequacy</u>	<u>In years 1 & 2, must demonstrate capacity to meet 100% of monthly local obligation for years 1 and 2, and 50% of monthly local obligation for year 3 by October 31st of the prior year</u>	<u>Up to 36 months</u>
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- 



**REGULAR MEETING of the Board of Directors of the
Peninsula Clean Energy Authority (PCEA)
Thursday, December 19, 2019
MINUTES**

Peninsula Clean Energy
2075 Woodside Road, Redwood City, CA 94061
6:30 p.m.

CALL TO ORDER

Meeting was called to order at 6:36 p.m.

ROLL CALL

Present: Dave Pine, County of San Mateo
Carole Groom, County of San Mateo
Jeff Aalfs, Town of Portola Valley, *Chair*
Rick DeGolia, Town of Atherton, *Vice Chair*
Julia Mates, City of Belmont
Madison Davis, City of Brisbane
Donna Colson, City of Burlingame
Rae P. Gonzalez, Town of Colma
Carlos Romero, City of East Palo Alto
Harvey Rarback, City of Half Moon Bay
Laurence May, Town of Hillsborough
Catherine Carlton, City of Menlo Park
Ann Schneider, City of Millbrae
Deirdre Martin, City of Pacifica
Ian Bain, City of Redwood City
Marty Medina, City of San Bruno
Laura Parmer-Lohan, City of San Carlos
Rick Bonilla, City of San Mateo
Mike Futrell, City of South San Francisco
Daniel Yost, Town of Woodside
Pradeep Gupta, Director Emeritus
John Keener, Director Emeritus

Absent: City of Daly City
City of Foster City

Staff: Jan Pepper, Chief Executive Officer
Andy Stern, Chief Financial Officer
Leslie Brown, Director of Customer Care
Rafael Reyes, Director of Energy Programs
KJ Janowski, Director of Marketing and Community Affairs
Kirsten Andrews-Schwind, Senior Manager of Community Relations
Siobhan Doherty, Director of Power Resources
David Silberman, General Counsel
Shayna Barnes, Administrative Assistant
Anne Bartoletti, Board Clerk/Office Manager/Executive Assistant to the CEO

A quorum was established.

PUBLIC COMMENT:

None

ACTION TO SET THE AGENDA AND APPROVE CONSENT AGENDA ITEMS

Motion Made / Seconded: May / Bonilla

Motion passed unanimously 17-0 (Absent: Daly City, East Palo Alto, Foster City, Redwood City, San Carlos)

REGULAR AGENDA

1. CHAIR REPORT

No report.

2. CEO REPORT

Jan Pepper—Chief Executive Officer—introduced new employees Sapna Dixit, Strategic Accounts Manager, and Gerald Gottheil, Marketing Communications Manager. Jan provided updates on staffing, the strategic planning process, EV incentive program results, and preliminary assessments for resilient solar for critical facilities.

3. CITIZENS ADVISORY COMMITTEE REPORT

Desiree Thayer—Chair—reported that the CAC received an update on legislation and regulatory issues, discussed Peninsula Clean Energy’s strategy for distributed generation and resiliency, and received a presentation on EV (Electric Vehicle) load shaping

4. AUDIT AND FINANCE COMMITTEE REPORT

Donna Colson—Chair—reported that the Committee members reviewed the current reserves policy, and discussed doing an RFP (Request for Proposals) for a second Investment Manager. Andy Stern—Chief Financial Officer—reported that the Committee reviewed financial reporting options and requested more detail in quarterly summary financial reports.

5. APPROVE AMENDMENT TO EXTEND CALPINE AGREEMENT

Leslie Brown—Director of Customer Care—reported that the current agreement with Calpine expires on June 30, 2020. She reviewed highlights of the current agreement, and reviewed highlights of the new amendment including a new pricing structure, buy-out option, and adjusted customer service hours. Leslie reported that the new amendment would provide a five-year extension beginning January 1, 2020.

Motion Made / Seconded: DeGolia / Groom

Motion passed with 1 abstention 19-0 (Absent: Daly City, Foster City. Abstained: Woodside)

6. REVIEW AND ADOPT PROPOSED POLICY PRINCIPLES FOR PG&E REORGANIZATION

Jan Pepper reported that a customer cooperative option for PG&E was discussed at the last Board meeting, and that proposed policy principles were discussed with the Executive Committee and staff. Jan introduced Dan Richard, a former PG&E executive and former head of the California High-Speed Rail Authority, who is working with the City of San Jose and presented perspectives on the potential for PG&E to become a private mutual benefit corporation. Board members reviewed a redline of Customer-Owned Utility (COU) Operating Principles, and made modifications.

PUBLIC COMMENT:

Diane Bailey, Menlo Spark
Ted Howard

Motion Made / Seconded: Groom / Bain

Motion to adopt principles as modified passed unanimously 18-0 (Absent: County of San Mateo, Daly City, Foster City, Menlo Park)

7. CPUC PROCESS FOR SETTING PG&E'S 2020 PCIA (EXIT FEE) RATES

Jeremy Waen—Manager of Regulatory Affairs—reviewed the CPUC (California Public Utilities Commission) process for setting PG&E's 2020 PCIA (Power Charge Indifference Adjustment) (exit fee) rates, including the normal PG&E rate change timeline, PCIA rulemaking, the present and 2020 PG&E rate change timeline, and the projected 2020 PG&E PCIA rate outlook.

8. BOARD MEMBERS' REPORTS

Ann Schneider thanked staff for participating in the City of Millbrae's first Disaster Preparedness Day in November.

John Keener reported that Jeff Aalfs, Jan Pepper, and Deirdre Martin were appointed Mayor of their respective cities. Donna Colson reported that she and Marty Medina were re-elected to the City Council of their cities.

ADJOURNMENT

Meeting was adjourned at 9:19 p.m.



**PENINSULA CLEAN ENERGY AUTHORITY
Board Correspondence**

DATE: January 10, 2020
BOARD MEETING DATE: January 23, 2020
SPECIAL NOTICE/HEARING: None
VOTE REQUIRED: None

TO: Honorable Peninsula Clean Energy Authority Board of Directors

FROM: Karen Janowski, Director of Marketing and Community Affairs &
Leslie Brown, Director of Customer Care

SUBJECT: Update on Marketing, Outreach Activities, and Customer Care

BACKGROUND:

The Marketing and Communications Team manages press coverage, public relations, local programs marketing, community outreach, online and social media presence, and responding to customer requests.

DISCUSSION:

Staffing/Resource Update

- The Marketing and Communications Team is actively recruiting for an open [Digital Marketing Specialist](#) position.

New San Mateo County Office of Education Grant Funding

Peninsula Clean Energy has awarded funding to support an additional two programs offered by the San Mateo County Office of Education (SMCOE): [2020 San Mateo Environmental Learning Collaborative \(SMELC\) Clean Energy Teacher Fellowship](#) (up to \$90,000) and [2020 SMELC Administrator Fellowship](#) (up to \$50,000).

The SMELC Clean Energy Teacher Fellowship is a paid fellowship program that helps teachers build capacity for developing lesson plans aimed at increasing environmental literacy, academic success, and civic engagement for a carbon free energy future.

The SMELC Administrator Fellowship is a yearlong paid fellowship program which supports school administrators to drive environmental transformation across their school community. Fellows attend workshops, and develop and implement an action plan that does one or more of the following:

- Greens one aspect of their school/district's facilities and operations, and utilizes these efforts in the curriculum as a laboratory for learning;
- Develops and implements a strategic plan for integrating environmental literacy into the curriculum and instruction for all students at every grade level;
- Supports a project that prepares the school/district to be Climate Ready in one focus area (high heat, floods, wildfires, trauma-informed practices for climate change, etc).

This funding is in addition to funds already awarded to SMCOE: [2020 Youth Climate Ambassadors Leadership Program](#) (up to \$45,000), [Energy Dashboard Pilot](#) (\$34,500), and the [2019 SMELC Clean Energy Teacher Fellowship](#) (\$25,000). The Youth Climate Ambassadors Leadership program kicked off with an all-day retreat on Saturday January 11, 2020.

Green Power Partnerships and Communities

The EPA will be reaching out to the designated contact from each city and the county around the anniversary date of when they joined the program. This should be happening in January. Once this contact is made by the EPA, Peninsula Clean Energy will submit the updated yearly reports on behalf of the city/county.

State of the City Presentations

The Marketing and Communications team is customizing presentation slides for each city to use in their State of the City address. The slides will highlight each community's benefits received from Peninsula Clean Energy. Kirsten Andrews-Schwind will email slides to each city's sustainability contact.

Recent Media Coverage

Peninsula Clean Energy has been covered by the press in the following recent articles. Full coverage is available at www.peninsulacleanenergy.com/news-media/.

- [“Greening the Grid,”](#) The Almanac, January 8, 2020
- [“San Mateo County will have completely green power by 2025, local agency says,”](#) Peninsula Press, December 2019
- [“San Mateo County agency to buy solar backup batteries for residents with medical needs,”](#) Stanford Journalism (You Tube), November 2019
- [“Opinion: How Silicon Valley is rising to climate challenge,”](#) The Mercury News, November 2019
- [“Leading the way to a greener tomorrow,”](#) San Mateo Daily Journal, November 2019
- [“Inside California Community Energy Providers’ Groundbreaking Solar-Storage Plan,”](#) Greentech Media, November 2019
- [“Calling all California solar and storage developers – 6,000+ systems, 32 MW+ request for proposals,”](#) PV Magazine, November 2019

- [“A Good Trade to Keep the Lights on in San Francisco’s Bay Area”](#), Microgrid Knowledge, November, 2019
- [“Renewable Energy Update – November 2019 #2”](#), JD Supra, November 2019

Community Outreach and Events

Upcoming events include:

15-Jan	Acterra Candidate Forum	Menlo-Atherton High School
15-Jan	Millbrae Chamber Excellence in Business Award	
17-Jan	SAMCEDA - Skyline College Success Summit	Skyline College Building 12 Environmental Sciences
22-Jan	San Mateo State of the City	San Mateo Main Library
23-Jan	Half Moon Bay Chamber - Recognition Awards Dinner	IDES, Half Moon Bay
24-Jan	San Mateo State of the City (Hosted by the Chamber)	San Mateo Marriott
26-Jan	Millbrae Lunar New Year	Downtown Millbrae
31-Jan	Redwood City Chamber Annual Luncheon	Domenico Winery

ECO100 Statistics

Total ECO100 accounts at end of December:	5895 [net increase of 71]
ECO100 accounts added in the month:	92
ECO 100 accounts dropped in the month:	21
Total ECO100 accounts at the end of November:	5824

Enrollment Statistics

Opt-out rates slightly increased in December compared to November, but we are continuing to enjoy a significant decrease in opt-outs overall as compared to 2018. As of December 31st 2019 cumulative opt-outs for the year are 670; at the same point last year the cumulative opt-outs for 2018 were 1371. The opt-out rate adjusted for move-in/move-outs is 2.53% and our overall participation rate is 97.5% of eligible accounts as of the end of December.

Opt-Outs by City

CITY	Eligible Ac	Total	TOTAL OPT OUT
ATHERTON INC	2,709	44	1.62%
BELMONT INC	11,963	313	2.62%
BRISBANE INC	2,548	51	2.00%
BURLINGAME INC	15,406	336	2.18%
COLMA INC	759	11	1.45%
DALY CITY INC	33,933	1155	3.40%
EAST PALO ALTO INC	7,941	288	3.63%
FOSTER CITY INC	14,768	302	2.04%
HALF MOON BAY INC	4,982	148	2.97%
HILLSBOROUGH INC	4,043	90	2.23%
MENLO PARK INC	15,800	241	1.53%
MILLBRAE INC	9,356	285	3.05%
PACIFICA INC	15,450	573	3.71%
PORTOLA VALLEY INC	1,677	111	6.62%
REDWOOD CITY INC	35,137	780	2.22%
SAN BRUNO INC	16,488	670	4.06%
SAN CARLOS INC	14,660	370	2.52%
SAN MATEO INC	44,488	1174	2.64%
SO SAN FRANCISCO INC	25,254	931	3.69%
UNINC SAN MATEO CO	24,562	714	2.91%
WOODSIDE INC	2,284	41	1.80%
Grand Total	304,208	8,628	2.84%

In addition to the County, there are a total of 15 ECO100 cities. The ECO100 towns and cities as of January 9, 2020, include Atherton, Belmont, Brisbane, Burlingame, Colma, Foster City, Half Moon Bay, Hillsborough, Menlo Park, Millbrae, Portola Valley, Redwood City, San Carlos, San Mateo, Woodside, and the County of San Mateo.

The opt-up rates below include municipal accounts, which may noticeably increase the rate in smaller jurisdictions.

Active Accounts by City and ECO100 Opt-Up Rate

City	Active Accounts	ECO100 Opt-Up %
Atherton	2,653	2.04%
Belmont	11,661	1.54%
Brisbane	2,495	3.45%
Burlingame	15,082	2.24%
Colma	749	4.01%
Daly City	32,857	0.25%
East Palo Alto	7,642	0.29%
Foster City	14,475	2.18%

Half Moon Bay	4,808	2.20%
Hillsborough	3,955	1.64%
Menlo Park	15,546	3.04%
Millbrae	9,097	1.12%
Pacifica	14,913	1.04%
Portola Valley	1,577	93.41%
Redwood City	34,409	2.06%
San Bruno	15,849	0.56%
San Carlos	14,309	2.05%
San Mateo	43,383	1.52%
So. San Francisco	24,352	0.41%
Uninc. San Mateo Co	23,686	2.23%
Woodside	2,245	2.41%
Grand Total	295,743	2.00%



**PENINSULA CLEAN ENERGY AUTHORITY
Board Correspondence**

DATE: January 10, 2020
BOARD MEETING DATE: January 23, 2020
SPECIAL NOTICE/HEARING: None
VOTE REQUIRED: None

TO: Honorable Peninsula Clean Energy Authority (PCE) Board of Directors

FROM: Joseph Wiedman, Director of Regulatory and Legislative Affairs
Jeremy Waen, Manager of Regulatory Affairs
Doug Karpa, Senior Regulatory Analyst

SUBJECT: Update on PCE's December and November Regulatory and Legislative Activities

SUMMARY:

Late December and early January were a quiet time for the regulatory and legislative team as the Commission and other agencies continue to digest the large number of filings that occurred in November. As discussed in more detail below, PCE, as part of CalCCA (California Community Choice Association), a coalition of CCAs (Community Choice Aggregators) or on its own behalf, submitted ten pleadings at the California Public Utilities Commission (CPUC or Commission) or before other regulatory bodies in the state. PCE's regulatory and legislative team attended eight other stakeholder meetings, as detailed below.

DEEPER DIVE:

Regulatory Advocacy and Outreach

A.18-12-009 – PG&E 2020 General Rate Case (GRC) – PG&E filed their 2020 GRC on Thursday, December 13, 2018. PCE and several other CCAs (collectively the "Joint CCAs") have been active in the docket over the last year raising a number of concerns with the application including the recovery of certain hydro generation costs as a non-bypassable charge, PG&E's proposed grid modernization plan, categorization of certain costs coming out of the decommissioning of Diablo Canyon Nuclear Power Plant, and treatment of decommissioning reserves. Testimony in the case was filed in July 2019 and hearings were held in October 2019. On November 25, 2019 the ALJ issued an e-mail ruling suspending the remaining schedule for this case in response to a request made by Pacific Gas & Electric Company (PG&E), Public Advocates Office (CalPA), and The Utility Reform Network (TURN) to allow for additional time to negotiate a settlement on certain issues within the case. On December 2, 2019 the ALJ issued a second e-mail ruling updating the remaining schedule

allowing for settlement negotiations to continue through December before resuming the Opening and Reply Brief deadlines in January 2020. On January 6, 2020 the Joint CCAs submitted their Opening Brief in this case pressing the legal case to support the issues raised in testimony by the Joint CCAs technical witnesses. Reply Briefs are due January 27, 2020 and there is also a pending settlement agreement that the Joint CCAs have an opportunity to comment on by January 21, 2020. Based on this schedule PCE staff anticipates the Commission reaching a final decision in this case in April or May 2020.

A.19-11-019 – PG&E 2020 General Rate Case Phase II (GRC) – PG&E filed their 2020 GRC Phase II Application on November 22, 2019. GRC Phase II proceedings predominantly focus on how to assign PG&E's overall revenue requirement (as established in the GRC Phase I) to each customer class, which has implications for how the Power Charge Indifference Adjustment (PCIA) is assigned to each customer class. On January 10, 2020, PCE joined EBCE, MCE, Pioneer, SJCE, SVCE, and SCP in protesting the Application. The Joint CCA's protest focused on the issue of how to present the PCIA on the bills of bundled customers. The issue of presentment of the PCIA on the customers' bills was raised in the Commission's PCIA docket wherein the Commission determined that discussion of bill presentment was reasonable. The Joint CCAs also plan to review the fees charged to CCAs and Direct Access customers for services provided by the PG&E are just and reasonable. The Joint CCAs are still reviewing the application and supporting testimony so other issues may emerge.

R.16-02-007 – Integrated Resource Planning (IRP) – The IRP proceeding is now focused on statewide planning procurement issues. First, CalCCA filed comments on the Reference System Plan on December 27, 2019. Comments addressed a range of technical issues, including the treatment and assumptions about imports for reliability, planning for retirement of natural gas plants, and assumptions about the capabilities and availability of storage resources. On January 6, 2020, CalCCA filed reply comments on the Reference System Plan. CalCCA's comments focused on the need for a schedule that allows for adequate modeling of our portfolios, allowing for flexibility for CCAs to make our own procurement choices, and technical comments on imports and other issues.

R.19-03-009 – Direct Access – On January 8, 2020, the CPUC Energy Division held a workshop to discuss development of a report required by the legislature on recommendations for expanding direct access to all nonresidential customers. Discussion focused on research needed and data available to assess required statutory findings concerning impacts of any expansion of direct access on compliance with the Renewables Portfolio Standard, impacts on established greenhouse gas reduction goals, impacts of expansion on the Commission's evolving Integrated Resource Planning program, assessment of possible cost shifts between bundled and direct access customers (CCA customers were specifically excluded from the statute), and consumer protection concerns regarding any expansion. Representatives of numerous CCAs attended the workshop and presented on these topics. Joseph Wiedman attended the workshop and presented on consumer protection issues that have occurred in restructured markets and advised the staff that careful review of existing rules was needed to ensure any expansion does not result in weakening of consumer protections. Mr. Wiedman discussed the idea that there may need to be limits placed on direct access expansion to certain segments of the nonresidential market as one solution among others.

R.17-09-020 – Resource Adequacy – On December 20, 2019, CalCCA filed comments responding to a Proposed Decision regarding qualifying capacity of hybrid resources (generation resources utilizing storage technologies). The Proposed Decision would adopt an interim methodology which would count only the resource adequacy value of the larger of the

solar or storage resources making up the hybrid resource unless the resource has two CAISO resource IDs. If the resource has two CAISO resource IDs, then resource adequacy would be counted separately for each resource. CalCCA recommended that the methodology in the Proposed Decision not be adopted as it would undercount the value of storage added to existing facilities unless those facilities were initially configured for two resource IDs. Instead, CalCCA supported calculating resource adequacy by adding the value of both components until a final methodology based on more rigorous analysis of true reliability value can be done. A decision by the Commission is expected in coming months.

R.19-09-009 – SB 1339 Implementation (microgrids) – On December 17, 2019, the Commission held a Prehearing Conference in this docket to address the scope and schedule for the docket. Stakeholders discussed ideas for how to identify short term actions that can be taken by March 2020 to facilitate the deployment of facilities to increase resiliency in the face of future PSPSs. Stakeholders also discussed PG&E's proposal to deploy generation resources on circuits PG&E has identified as safe circuits which can remain energized during a PSPS. At present, PG&E has identified ten substations that have circuits in areas that have a high likelihood of experiencing future PSPS events that can remain energized during a larger PSPS. The ten substations are mostly in SCP and MCE's service territories. Joseph Wiedman attended the Prehearing Conference and expressed a desire to work with PG&E on identifying similar circuits in San Mateo County so that PCE and PG&E can work collaboratively to provide continued energy service on safe circuits during a PSPS. PG&E and PCE are in conversations regarding the idea.

R. 17-06-026 PCIA – PCE has been strongly involved as a co-lead in the CPUC's third working group to develop a mechanism to provide for voluntary allocation to PCE of attributes out of IOU portfolio, sales of these attributes, and a process for contract assignment of IOU resources. The final report for this third working group will be submitted to the Commission on January 30, 2020. Items within the first working group (such as PCIA presentment on bundled customers' bills) and the second working group (such as prepayment of customers' PCIA-related costs) also remain pending within this case.

Legislative Advocacy and Outreach

On December 16, 2019, Joseph Wiedman met with various legislative staff in Sacramento to talk generally about energy policy issues facing the state. Mr. Wiedman met with Nidia Bautista, Chief Consultant to the Senate Energy, Utilities and Communications Committee; Kaitlin Curry, Legislative and Communication Assistant for Assemblymember Marc Berman; Beth Vaughn and Sean McNeil, CalCCA Executive Director and Director of Legislative Affairs respectively, and Miles Horton, Legislative Aide to Senator Scott Wiener. Conversations were wide ranging but focused on PCE's development of resiliency programs to reduce the impact of PSPS and grid outages, the status of the Commission's implementation of SB 1339 (Stern) concerning microgrids, and how CCAs can assist the state in planning a more resilient grid.

On December 19, 2019, Jan Pepper, Joseph Wiedman, Shayna Barnes, and Jeff Aalfs met with Assemblymember Marc Berman and his staff. Staff from Silicon Valley Clean Energy also attended the meeting. The group discussed PCE's ongoing effort to develop programs to increase resiliency in San Mateo County, the current status of PG&E's bankruptcy, and concerns that PG&E's inability to upgrade or modify distribution service in a timely manner would undermine building electrification efforts.

FISCAL IMPACT:

Not applicable.



PENINSULA CLEAN ENERGY
JPA Board Correspondence

DATE: Jan. 13, 2020

BOARD MEETING DATE: Jan. 23, 2020

SPECIAL NOTICE/HEARING: None

VOTE REQUIRED: None

TO: Honorable Peninsula Clean Energy Authority Board of Directors

FROM: Jan Pepper, Chief Executive Officer, Peninsula Clean Energy
Rafael Reyes, Director of Energy Programs

SUBJECT: Community Programs Report

SUMMARY

The following programs are in progress, and detailed information is provided below:

1. Electric Vehicle Charging Incentive Program
2. New EV Dealer Incentive Program
3. Low-Income EV Incentive Program (DriveForward Electric)
4. EV Ride and Drives
5. PCE/EBCE Resilient Solar for Critical Facilities
6. MUD Low-Power EV Charging Pilot
7. Community Pilots
8. EV Managed Charging Pilot

DETAIL

1. Electric Vehicle Charging Incentive Program

In December 2018 the Board approved \$16 million over four years for EV charging infrastructure incentives (\$12 million), technical assistance (\$2 million), workforce development (\$1 million), and administrative costs (\$1 million). Subsequent to authorization of funding, PCE successfully applied to the California Energy Commission (CEC) for the CEC to invest an additional \$12 million in San Mateo County for EV charging infrastructure. That application was in conjunction with agencies in Santa Clara County.

Of PCE's \$12 million in incentives, \$8 million will be administered under CALeVIP and \$4 million under a dedicated, complementary PCE program. The dedicated PCE program will address critical market segments not addressed by CALeVIP including Level 1 charging, assigned parking in multi-family dwellings, affordable housing new construction, and charging for resiliency purposes. PCE staff is working on operational readiness for the dedicated program.

The Board delegated execution of contracts with CLEAResult for technical assistance in August and in October with the Center for Sustainable Energy (CSE) for administration support under the CEC's program known as CALeVIP. The contract with CLEAResult was executed at the end of November while contracting is still underway with CSE. Detailed planning for the technical assistance with CLEAResults has begun.

2. New EV Dealer Incentive Program

This program is one of PCE's two core elements for new EV marketing (the other is the Ride & Drive Program) and is intended to provide time-limited discounts and incentives on EVs to address the up-front cost of which is one of the key barriers to EV adoption. In addition, the program provides a "hook" for broad based marketing across the county intended to not only motivate immediate purchases but also increase awareness and interest in EVs to foster future purchases.

The program includes participating dealerships which are selected annually through a competitive process in which dealers were eligible to apply by offering discounts below the Manufacturer's Suggested Retail Price (MSRP) on their EVs. In addition to the discounts offered, PCE provides an added incentive (\$1,000 for battery electric vehicles and \$700 for plug-in hybrids) and a \$250 incentive to participating dealerships per vehicle sold/leased.

In April 2019, the Board approved the continuation of the New EV Dealer Incentive Program over the next three years (2019-2021) following a 2018 pilot in which 120 vehicles were sold or leased.

This year's program began October 1, 2019 and ended December 31, 2019. The program launched with 7 participating dealerships, one per vehicle make, which were: Honda of Serramonte in Colma, Nissan of Burlingame, Peter Pan BMW in San Mateo, Putnam Chevrolet in Burlingame, Serramonte Ford in Colma, Stewart Chrysler in Colma, and Toyota 101 in Redwood City. In mid-November, however, PCE staff added two more Chevrolet dealerships, Boardwalk Chevrolet in Redwood City and Stewart Chevrolet in Colma, due to a limited availability of the Chevrolet Bolt EV.

Discount and incentive amounts varied according to vehicle type, model, make, trim, and year. The program included significant marketing to all San Mateo County residents, including three sets of postcards to residential accounts, emails, Comcast TV commercial ad, and online ads.

Though total vehicle uptake over the promotion period is difficult to project, PCE anticipated higher participation this year and in future years due to a larger number of participating dealers (giving customers more vehicle choices) and higher awareness of the program. Staff's target was to reach 250 vehicles this year.

165 vehicles are confirmed to have been sold/leased through the program this year. However, one dealership has not yet reported its sales, so we anticipate the number to be over 170 vehicles. While this year's program has exceeded last year's number (120), it did not reach the target of 250 vehicles. There are a number of possible factors for that including: Chevrolet Bolt supply issues due to General Motor strikes, significant decrease in the federal tax credit incentive for the Bolt, California rebate being reduced, and overall light duty sales down ~10%. One other factor impacting EV sales is that consumer preference favors SUVs where sales are growing and there are still few electric SUVs, though more will be entering the market in the next couple of years.

Staff will report back with a more detailed debrief on the program when all the data has been compiled. This data includes surveys from all New EV Dealer Incentive Program participants that PCE collected at time of purchase/lease through the dealerships. Survey questions aim to determine the effectiveness of the program in motivating customers to buy an EV, driving and charging habits, and type of residence participant lives in, among other things. Additionally, PCE will conduct a county-wide market survey to assess overall awareness and interest in EV adoption. This survey will be compared against a 2019 baseline survey and is intended to provide indications of the broader community-wide impact of the program.

3. Low-Income EV Incentive Program (DriveForward Electric)

Launched in March 2019, the DriveForward Electric program provides an incentive up to \$4,000 for the purchase of used plug-in hybrid electric vehicles (PHEVs) and full battery electric vehicles (BEVs) to low- and moderate- income San Mateo County residents with access to a standard outlet at home or at work. The incentives may be combined with other programs such as Clean Cars for All from the Bay Area Air Quality Management District. When combined with another program, PCE offers \$2,000 as a follow-on rebate.

PCE offers this incentive through Peninsula Family Service's (PFS) DriveForward program, which is a robust program that provides financial coaching and access to financing to help participants purchase reliable used vehicles. Incentive funds are intended to be administered by PFS and to be paid as a check to the dealership as a vehicle down payment from the participant.

PCE has a program web page available at peninsulacleanenergy.com/driveforwardelectric/. The program has been live for close to a year but with some lessons learned and a dynamic landscape of low income EV incentive programs available, some changes have been implemented to the program.

Key metrics:

- Vehicles sold to-date: 28
- Estimated CO2 emissions avoided over 10 years: 1,000+ tons
- Estimated annual total participant savings: \$34,000+
- 2 more sales have closed but have not been reported and the pipeline includes 11 additional clients that have been approved but have not purchased vehicles

4. EV Ride & Drives

This program is one of PCE's two core elements for new EV marketing (the other is the New EV Dealer Incentive Program). It provides for community and corporate events in which community members can test drive a range of EVs. Five events were held in 2018. In February 2019, the Board approved ramping up the program with a 3-year program intended to yield 10 to 25 events per year and to significantly increase social media visibility. PCE has completed thirteen events, with two more scheduled thus far for 2019. The following tables summarize all events to date, number of EV experiences, and scheduled events.

2019 completed events:

Event	Type	Date	EV experiences*
STEAM Fest	Community	April 27, 2019	125
Genentech	Workplace	April 29, 2019	255
Visa	Workplace	May 8, 2019	261
Colma Community Fair	Community	July 13, 2019	67
Facebook Community Festival	Community	August 17, 2019	287
Burlingame on the Avenue	Community	August 18, 2019	107
Oracle	Workplace	August 21, 2019	172
Foster City Summer Days	Community	August 24, 2019	152
San Mateo County Center /Downtown Redwood City	Workplace/Community	September 10, 2019	83
Burlingame Fall Fest	Community	October 26, 2019	45
Illumina Campus	Workplace	November 5, 2019	165
Millbrae Disaster Preparedness Day	Community	November 16, 2019	96
YouTube	Workplace	December 3, 2019	64
Oracle (2 nd event)	Workplace	December 17, 2019	99
TOTAL			1879

*EV experiences refer to the total number of test drives and passenger rides.

Events include pre-test drive, post-test drive, and six-month trailing surveys to document changes in customer perception towards EVs and actions taken after the EV experience. Key findings from those surveys, from 2018 and 2019 events, are summarized below:

Day-of Survey Results:

Sample pool: 1,419 pre-test drive respondents, 920 post-test drive respondents

Metric	Result
Identified as San Mateo County residents	53%
Had their first EV driving experience at event	65%
Stated their overall opinion of EVs is better or somewhat better after test drive	87%

Six-month trailing survey:

Sample pool: 167 respondents (25% response rate)

Metric	Result
Acquired an EV after the event	22% (30 total: 37 purchases, 6 leases)
Of those who didn't acquire an EV, those who said they would "definitely" or "likely" acquire an EV as their next vehicle	71%

PCE staff has started planning out event for 2020 and has identified about 12 likely host sites, some repeat from previous years and some new. The following table summarizes these sites (only two have had a specific date set yet):

Event	Type	Date
Visa	Workplace	April 23, 2020
STEAM Fest	Community	April/May
Sony Interactive Entertainment	Workplace	TBD
Guidewire Software	Workplace	TBD
Foster City Summer Days	Community	July/August
Facebook Summer Festival	Community	August/September
Oracle	Workplace	TBD
Genentech	Workplace	TBD
Illumina	Workplace	TBD
College of San Mateo	Workplace/Community	TBD
The Next Big Think (SMCo Office of Education STEM Fair)	Community	March 15, 2019
Half Moon Bay Earth Day	Community	TBD

PCE anticipates completing at least 18 events in 2020. Staff's goal is to host events throughout the county and will particularly focus on finding events in cities where we have not had events yet.

5. Resilient Solar for Critical Facilities

In Q3 2018, East Bay Community Energy (EBCE), in partnership with Peninsula Clean Energy (PCE), was awarded a Bay Area Air Quality Management District grant for a scoping study to identify community shelter critical facilities in the counties of Alameda and San Mateo. These counties provide emergency services during natural disasters and do preliminary assessments for solar+storage resilience projects. Solar+storage at critical facilities can provide a cleaner and more reliable power source than diesel generators and reduce operating costs for the facilities.

This a \$300k, 12-month scoping project that will: 1) identify a subset of critical facilities in San Mateo and Alameda counties that serve as community shelters and/or emergency response hubs during disasters (e.g. police and fire depts, recreation centers, libraries, etc); 2) narrow down that list to select priority sites based on some criteria and conduct some assessments at a subset of those sites that are representative of the entire list; 3) develop a financial model (e.g. rate design or financial incentive) that results in affordable and widespread deployment of resilient solar systems; and 4) design and assist in the collective procurement for solar+storage installations at priority critical facilities to reduce costs for interested agencies.

This project has initiated, and PCE has collected sites from 11 municipalities to serve as a preliminary list of prospective facilities. These facilities were studied for their solar potential, to understand their risk of fault as a result of natural disasters, and to evaluate their proximity to customer population. Based on a scoring matrix developed by our partners at Arup, we have established 92 facilities that are potentially viable. Peninsula Clean Energy is in the process of meeting with municipalities to provide an update, review the results of this study, and discuss potential procurement pathways.

The overall scoping study performed will serve as a basis for assessing the full scope of a prospective procurement. EBCE is the lead agency for the project and is planning to release a Request for Information (RFI) in the first quarter of 2020 to collect industry information on potential resiliency solutions and how to organize procurement for municipalities in EBCE and PCE territories .

This project is managed within the Power Resources team.

6. MUD Low-Power EV Charging Pilot

This pilot program will foster new low-power charging technology solutions, pilot them in multi-unit dwellings (MUDs), and assess the technologies and document the results. Energy Solutions was selected as the consultant partner as part of a competitive bid process. The project was kicked off in August. Energy Solutions is currently doing a

needs assessment, including various MUD owners and managers, and assessing the current market of known technologies.

7. Community Pilots

PCE awarded grants of up to \$75,000 each for six innovative local pilot projects to reduce greenhouse gas emissions, support low-income customers, and advance electric transportation. Below is the status of each pilot project:

Pilot	Status
Refrigerator Recycling – ARCA Old refrigerator recycling program to capture high impact GHG sources.	Program live since mid-April. 119 requests have been made as of end of December (103 units collected, 16 pending collection). Program will run until 350 units are recycled. Website: www.peninsulacleanenergy.com/fridge
Peninsula Climate Comfort – Ardenna Pilot for electrification retrofits for up to 5 homes for in-depth technical and financial assessment as development of financing strategy.	Application closed April 7. 62 complete applications received. Ardenna has selected 5 case study participants. Homes are located in San Mateo, Brisbane, East Palo Alto, Redwood City, and Burlingame and have diverse attributes (age, size, etc.). Feasibility assessments have been received by each home. One homeowner is moving forward, two are maybes, and the two others have stated will not take action at the moment. Website: www.climate-comfort.com
Healthy Home Connect – Build It Green (newly acquired by Franklin Energy) Upgrade 10-16 low-income homes that would otherwise be disqualified from existing energy saving assistance programs using PCE gap funding.	Outreach and Hayward Score assessments on 35 homes has been completed. Program aimed to provide healthy home upgrades & remediations to 10-16 homes. Build it Green expects to complete work 14 homes: 6 these have been completed, 5 are under construction, 2 scheduled, and 1 on hold due to homeowner travel.
Community Resiliency at Faith Institutions – Interfaith Power & Light Recruit and develop plans to equip select number of faith institutions to be community hubs with clean energy back up power.	3 sites received solar plus storage bids from local developers, ranging between 20-25 kW PV arrays and ~10-40 kWh storage. 3 emergency preparedness meetings held at local congregations with ~40-55 attendees
Low to Moderate Income Community Car Sharing	Contracting between PCE and Envoy is still underway. Envoy identified promising candidate site in East Palo Alto. Potential to

Deploy a select number of battery electric vehicles (EVs) to be used for car sharing within a low to moderate income community apartment complex.	incorporate CEC funded vehicles via grant received by Envoy.
A Roadmap for Municipal Green Fleets – County Office of Sustainability Develop a clean fuel fleet toolkit for local governments, acquire pilot vehicles and scooters, and provide technical assistance to jurisdictions interested in electrifying their fleets.	San Mateo County Sheriff's office acquired a Fusion Energi PHEV and 8 e-bikes have been purchased for Parks department, replace current diesel vehicles. The team is evaluating a tool for fleet managers to assess duty cycles for applicability of EVs.

8. EV Managed Charging Pilot

PCE has entered into a contract with FlexCharging to test managed charging through vehicle-based telematics. The system utilizes existing Connected Car Apps and allows PCE to manage EV charging via algorithms with a goal of shifting more charging to occur during off-peak hours. PCE staff are currently preparing for initial quality testing and user-experience evaluation, estimated to last about 4-6 months, and then begin testing incentive structures for behavior change impact.



PENINSULA CLEAN ENERGY
JPA Board Correspondence

DATE: January 10, 2020

BOARD MEETING DATE: January 23, 2020

SPECIAL NOTICE/HEARING: None

VOTE REQUIRED: None

TO: Honorable Peninsula Clean Energy Authority Board of Directors

FROM: Jan Pepper, Chief Executive Officer

SUBJECT: Energy Supply Procurement Report – January 2020

BACKGROUND:

This memo summarizes energy procurement agreements entered into by the Chief Executive Officer since the last regular Board meeting in December. This summary is provided to the Board for information purposes only.

DISCUSSION:

The table below summarizes the contracts that have been entered into by the CEO in accordance with the following policy since the last board meeting.

Execution Month	Purpose	Counterparty	Term
December	Purchase of Resource Adequacy	Monterey Bay Community Power	1 month
December	Sale of Resource Adequacy	Monterey Bay Community Power	1 month
December	Purchase of Resource Adequacy	East Bay Community Energy	1 month
December	Sale of Resource Adequacy	East Bay Community Energy	1 month
December	Purchase of Resource Adequacy	Brookfield Renewable Trading and Marketing LP	2 months
December	Purchase of Import Allocation Rights for Resource Adequacy	City of Vernon	2 months

December	Sale of Resource Adequacy	Exelon Generation Company, LLC	2 months
January	Purchase of Carbon Free Energy	Direct Energy Business Marketing	1 year

In December 2017, the Board approved the following Policy Number 15 – Energy Supply Procurement Authority.

Policy: “Energy Procurement” shall mean all contracting for energy and energy-related products for PCE, including but not limited to products related to electricity, capacity, energy efficiency, distributed energy resources, demand response, and storage. In Energy Procurement, Peninsula Clean Energy Authority will procure according to the following guidelines:

1) **Short-Term Agreements:** Chief Executive Officer has authority to approve energy procurement contracts with terms of twelve (12) months or less. The CEO shall report all such agreements to the PCE board monthly.

2) **Medium-Term Agreements:** Chief Executive Officer, in consultation with the General Counsel, has the authority to approve energy procurement contracts with terms greater than twelve (12) months but not more than five (5) years. The CEO shall report all such agreements to the PCE board monthly.

3) **Intermediate and Long-Term Agreements:** Approval by the PCE Board is required before the CEO enters into energy procurement contracts with terms greater than five (5) years.