AGENDA
COMMUNITY ADVISORY COMMITTEE MEETING
THURSDAY, SEPTEMBER 27, 2018
1:00 PM

50 Santa Rosa Avenue, Fifth Floor, Santa Rosa, California

I. CALL TO ORDER

II. PUBLIC COMMENT ON MATTERS NOT LISTED ON THE AGENDA

(Comments are restricted to matters within the Committee jurisdiction. The Committee will hear public comments at this time for up to thirty minutes. Please be brief and limit comments to three minutes.)

III. COMMUNITY ADVISORY COMMITTEE CONSENT CALENDAR

1. Approve minutes from the July 24, 2018 meeting

IV. COMMUNITY ADVISORY COMMITTEE REGULAR CALENDAR

2. Receive operations report and provide input as appropriate

3. Receive legislative and regulatory updates and provide input as appropriate.

4. Receive update on renovation project at 431 E Street

5. Receive report on potential EV Charging Infrastructure program and provide input as appropriate


V. COMMITTEE MEMBER ANNOUNCEMENTS

VI. ADJOURN

DISABLED ACCOMMODATION: If you have a disability which requires an accommodation, an alternative format, or requires another person to assist you while attending this meeting, please contact the Clerk of the Board at (707) 978-3467, as soon as possible to ensure arrangements for accommodation.
**COMMONLY USED ACRONYMS/TERMS TO KNOW**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAC</td>
<td>Community Advisory Committee</td>
</tr>
<tr>
<td>CAISO</td>
<td>California Independent Systems Operator</td>
</tr>
<tr>
<td>CAM</td>
<td>Cost Allocation Mechanism</td>
</tr>
<tr>
<td>CCA</td>
<td>Community Choice Aggregation</td>
</tr>
<tr>
<td>CEC</td>
<td>California Energy Commission</td>
</tr>
<tr>
<td>CleanStart</td>
<td>SCP’s default electric service</td>
</tr>
<tr>
<td>CPUC</td>
<td>California Public Utility Commission</td>
</tr>
<tr>
<td>DER</td>
<td>Distributed Energy Resource</td>
</tr>
<tr>
<td>ERRA</td>
<td>Energy Resource Recovery Account</td>
</tr>
<tr>
<td>EverGreen</td>
<td>SCP's 100% renewable, 100% local energy service</td>
</tr>
<tr>
<td>Geothermal</td>
<td>A locally-available, low-carbon baseload renewable resource</td>
</tr>
<tr>
<td>GHG</td>
<td>Greenhouse gas</td>
</tr>
<tr>
<td>GRC</td>
<td>General Rate Case</td>
</tr>
<tr>
<td>IOU</td>
<td>Investor Owned Utility (e.g., PG&amp;E)</td>
</tr>
<tr>
<td>IRP</td>
<td>Integrated Resource Plan</td>
</tr>
<tr>
<td>JPA</td>
<td>Joint Powers Authority</td>
</tr>
<tr>
<td>MW</td>
<td>Megawatt (Power = how fast energy is being used at one moment)</td>
</tr>
<tr>
<td>MWh</td>
<td>Megawatt-hour (Energy = how much energy is used over time)</td>
</tr>
<tr>
<td>NEM</td>
<td>Net Energy Metering</td>
</tr>
<tr>
<td>NetGreen</td>
<td>SCP’s net energy metering program which gives its customers financial credit for generating electricity.</td>
</tr>
<tr>
<td>PCIA</td>
<td>Power Charge Indifference Adjustment (This fee is intended to ensure that customers who switch to SCP pay for certain costs related to energy commitments made by PG&amp;E prior to their switch.)</td>
</tr>
<tr>
<td>ProFIT</td>
<td>SCP’s “Feed in Tariff” program for larger local renewable energy producers</td>
</tr>
<tr>
<td>PV</td>
<td>Photovoltaics for making electric energy from sunlight</td>
</tr>
<tr>
<td>REC</td>
<td>Renewable Energy Credit - used to track all renewable energy for compliance in California</td>
</tr>
<tr>
<td>SCP</td>
<td>Sonoma Clean Power</td>
</tr>
<tr>
<td>TOU</td>
<td>Time of Use, used to refer to rates that differ by time of day and by season</td>
</tr>
</tbody>
</table>
I. CALL TO ORDER

The meeting was called to order by CM Nicholls at 1:00 P.M.

Committee Members Present: CM Fenichel, CM Baldwin, CM Sizemore, CM Wells, CM Brophy, CM Nicholls, and CM Como

Staff Present: Geof Syphers, Chief Executive Officer, Stephanie Reynolds, Director of Internal Operations, and General Counsel, Jessica Mullan

II. PUBLIC COMMENT ON MATTERS NOT LISTED ON THE AGENDA

Public Comment:

None

III. COMMUNITY ADVISORY COMMITTEE CONSENT CALENDAR

1. Approve minutes from the June 25, 2018 meeting minutes of the Community Advisory Committee

Public Comment:

None

Motion to approve the June 25, 2018 meeting minutes of the Community Advisory Committee by CM Baldwin

Second: CM Como

Motion Approved: 6-0-1 (CM Sizemore abstained)
2. Receive operations report and provide input as appropriate

Stephanie Reynolds, Director of Internal Operations introduced new SCP Legal Counsel Jessica Mullan.

Kate Kelly, Director of Marketing and Public Affairs gave an update on the brand refinement that was presented at the last Board of Directors meeting. She stated the new brand will be released to the public on August 1\textsuperscript{st} which includes a website refresh. The brand now has three pillars, innovative, practical and inclusive.

CM Brophy asked if the slogan is changing

Director Kelly stated that the old slogan Local. Renewable. Ours has been changed to Innovation. Grown Locally.

CEO Syphers stated that the mission statement will also be renewed by an ad hoc committee soon.

Director Reynolds gave an update on the new property, and that it has been cleaned up after a minor break-in.

CEO Syphers stated the student CM Guthrie is advocating for carbon fee and dividend policy with the Citizens Climate Lobby, they gave a presentation at the last Board of Directors Meeting. The Board of Directors asked staff to draft a resolution to support the effort.

Director Reynolds provided updates on Programs: Lavio Solar Ribbon cutting happened last week, Drive EV launches on August 1\textsuperscript{st}, and the final hard copy of CEC grant award has been received. She stated the fire relief donations summary is completed and reviewed the financial statements.

Rachel Kuykendall, Programs Manager stated that there are now 103 total homes in the program including a large multifamily project.

CM Brophy asked where the second ProFIT installation is located and if there is a follow up for the fire relief donations.

Nelson Lomeli, Programs Manager stated it is located at Stage Gulch off Highway 121.

Director Kelly stated there is no follow up but for some of the bigger donations we will be able to see the completed projects.
CEO Syphers gave an additional update on financials, at the end of the fiscal year we will be at about 67% of our goal for operating reserves; after only four years it is great progress.

Public Comment:
None

3. Receive legislative and regulatory updates and provide input as appropriate.

CEO Syphers gave legislative updates on AB 813, SB 100, AB 33, and SB 1088.

Neal Reardon, Director of Regulatory Affairs gave an update on PCIA, a proposed decision is expected within a month and a decision by the end of the year.

CEO Syphers read Chair Dowd’s written statement that he is pleased with PCIA work and thanked staff for work on SB 1088.

Public Comment:
None

4. Review and recommend contract with EHDD for Architectural and Engineering services.

CEO Syphers stated staff has been reviewing the 11 submittals for 431 E St RFQ. He stated the request for the renovation is beyond “net zero.” Also, legally as a public agency we have to select a firm based on qualifications and then negotiate the final scope and budget. He reviewed the contract, expected process and budget. He stated that the schematic design should be done first and then a new cost estimate should be completed before proceeding to Design Development stage. Director Stillman and Advisor Ann Ludwig agree with this process.

CM Nicholls noted Chair Dowd’s written statement, in which he was disappointed that a local firm was not selected as the lead architect, but glad some the sub-contractors are local. He also feels that the price of contract is expensive.

CEO Syphers stated that a local firm was short-listed but they did not emerge as the top firm following interviews. He stated a comparison of hourly rates, overall team skills in managing to budget, and the
overall quality of team qualifications put EHDD on top. In addition, construction costs have dramatically increased.

CM Nicholls asked if we are going beyond net zero, what will happen if there is a power outage.

CEO Syphers stated it is a good question that can be planned for. No decision is proposed yet for whether the building should be capable of “islanding” from the grid.

CM Brophy asked if it is legal to select candidates based on locality and if we are tied to the firm after the first phase is done.

Jessica Mullan, General Counsel stated that it is legal if you do it in certain ways such as award additional points.

CEO Syphers stated we are able to cancel the contract at any phase, but the intent is to stay with the same team all the way through.

CM Baldwin asked GC Mullan’s opinion on the firm and process
GC Mullan stated that expectations were clearly looked at and that opinions are being taken into account.

Public Comment:
None

Motion to approve the recommendation to the SCP Board of Directors for the contract with EHDD for Architectural and Engineering services by CM Baldwin.

Second: CM Sizemore

Motion Approved: (7-0-0)

5. Review and recommend lease agreement between SCP and Kushins & Langendorf for office space for The Energy Marketplace

Chad Asay, Programs Manager, presented lease and gave background. Lease will start September 1st and run for three years, it is currently under legal review by GC. The owner has offered to waive the first eleven months of base rent to help with renovations and has offered three different three year extensions.

CM Sizemore asked if the improvements will be similar to the new headquarters and be a net zero building.
Manager Asay responded that it will mostly likely be.

CM Wells asked if customers will be able to walk out of the store with items.

Manager Asay responded the objective of the storefront is to connect the technology and items from the manufacturers with a certified contractor that can install it through a web tool. There will be minimal storage at the location because it will be mostly displays.

CM Baldwin asked what the projected opening date will be.

Manager Asay stated it should be around April 2019

CM Como asked if it was possible to negotiate interest on the security deposit.

CM Nicholls read Chair Dowds written statement that price seems high.

Manager Asay stated that rent is approximately 86 cents per sq. feet, other places are over a dollar. He stated the owner appreciates our mission and what the space will be used for.

CM Sizemore asked if GC Mullan will rewrite the contract.

GC Mullan stated that there will be more clarification and specific terms in the addendum.

Public Comment

Mike Turgeon, EverGreen Customer, asked if in the meanwhile there is any similar virtual energy market available.

Manager Kuykendall stated that there will be a GridSavvy webstore that will have technology available that is demand response capable very soon.

Motion to approve recommendation to the SCP Board of Directors for the lease agreement between SCP and Kushins & Langendorf for office space for The Energy Marketplace by CM Sizemore

Second: CM Brophy

Motion Approved: (7-0-0)
6. Review and recommend contract between SCP and the Sonoma County Water Agency for energy education programs.

Manager Kuykendall presented results of previous year of program and gave examples of the educational activities, classes and teacher training. She stated changes include giving guarantee to the Water Agency for funding but the contracts will still be presented to the CAC and BOD. Programs has already budgeted for the education program.

CEO Syphers asked if the amount of the contract is already part of the already adopted Programs Budget.

Manager Kuykendall stated that it is part of the budget already, it would not change programs budget.

CM Nicholls stated that he would like more schools to participate in West County.

Trisha Meisler, a Sonoma Water employee, stated that she feels that the program will continue to grow primarily through word of mouth. There has not been any presentation directly to teachers but they can look into doing that. She stated she did met with Mendocino County Office of Education.

CM Sizemore stated that it would be helpful to address school boards of various small areas in Mendocino County because MCOE tends to cater to bigger school districts

CM Fenichel asked if there is any coordination with SCP staff on the energy portion of the education.

Manager Kuykendall stated that it was a collaborative effort but left all education program to the expert educators.

CM Wells asked if there has been changes made based on the feedback.

Trisha Meisler stated that they did make changes, such as they will give options in terms of length of classes to teachers.

Public Comment:

None
Motion to approve recommendation to the SCP Board of Directors on the contract between SCP and the Sonoma County Water Agency for energy education programs by CM Brophy

Second: CM Wells

Motioned Approved: (7-0-0)


CB Hall Compliance Analyst, Rachel Kuykendall, Programs Manager and Rebecca Simonson, Power Services Manager, all joined to present the draft IRP. CB Hall gave background and stated takeaways such as load changes, projections, and internal GHG targets.

CM Nicholls stated he had difficulty understanding some parts of the IRP but trust staff on some of the more technical aspects.

CEO Syphers reviewed and clarified certain points of the IRP.

CM Fenichel asked if the order of the bullets in the Executive Summary has a certain prioritization and for clarification on number four.

CEO Syphers stated number four is in regards to credit ratings for CCAs.

CM Nicholls asked if there is a plan for adding service territory.

Rebecca Simonson, Power Services Manager stated the process used to prepare for Mendocino County.

CM Como stated appreciation for the Executive Summary and commented on support for trying to get the PUC to adopt this outline.

CM Brophy asked the schedule of submission and stated that it is one of the best reports he has seen.

CM Wells stated number five in the Executive Summary might not be distinguishing compared to IOUs and should be rewritten.

CEO Syphers stated reasoning and will address reframing, also edits are welcomed. He reminded committee members to not copy the rest of the committee in emails to staff to comply with Brown Act.
IV. COMMITTEE MEMBER ANNOUNCEMENTS

CM Nicholls stated Thursday night is the Bohemian Show in Monte Rio.

V. ADJOURN

CM Nicholls adjourned the meeting at 3:24 P.M.
Staff Report – Item 02

To: Sonoma Clean Power Authority Community Advisory Committee
From: Stephanie Reynolds, Director of Internal Operations
       Geof Syphers, CEO
Issue: Receive Operations Report and provide input as appropriate
Date: September 27, 2018

TEAM MEMBER UPDATE

We have formally welcomed new Administrative Services Officer, Beau Anderson. Beau joined the SCP team from the County of Sonoma on September 17th. He will be assigned Clerk of the Board duties, assisting with human resources and benefits administration and other duties. Welcome Beau!

CURRENT PARTICIPATION RATES

As of September 11, 2018, SCP continues to have an 87% participation rate of our eligible accounts, approximately 224,000 in both counties. To continue to grow our numbers and share our message, staff continues to regularly attend local events, provides sponsorships and markets our programs and progress.

ANNUAL POWER CONTENT LABEL

Since our last meeting, the SCP annual Power Content Label was produced and mailed to our current customers, as well as any customers that took service from SCP in 2017 (see copy, attached). The mailer is a requirement by the California Energy Commission (CEC). SCP’s CleanStart and EverGreen products are compared to the 2017 CA Power Mix, which is an annual
estimate by the CEC based on electricity sold to CA consumers during the specified year. SCP also took the opportunity to present our successes for the year and add information about our Drive EV program to the card.

CALCCA ANNUAL MEETING

The CalCCA Annual Meeting was held the first week in September in Monterey. A number of SCP staff were in attendance with CEO Syphers moderating a panel on affordable reliability and policy setting, Neal Reardon sat on a panel discussing the PCIA and Cordel Stillman sat on a panel discussing partnerships driving innovation. It was a great opportunity to network with fellow CCA staff and work towards solutions to joint challenges.

PROGRAM UPDATES

Drive EV in full swing

Drive EV began on August 1, 2018, and will run until November 16, 2018. As of Sept. 17, 2018, SCP has provided incentives on 260 vehicles. Participating dealerships include Chevrolet, Nissan, Kia, BMW and Chrysler. Staff has attended 11 community events, like farmer markets and golf tournaments, with four more scheduled throughout October.

The Drive EV campaign is underway, and is being communicated (in both English and Spanish) via a variety of media including: TV, radio, print, digital, and outdoor ads, email, social media, direct mail, streaming radio and by engaging our influencers’ personal/trust networks to spread the word.

Drive EV 2.0 program participants cited direct mail and word of mouth among the top ways they heard about the program, and we need your help to get the word out. Tell your neighbors, friends, and colleagues, as well posting about it on your various social media networks.

Energy Education Program

The highly successful Energy Education Program continues. A contract for continuation of the Energy Ed program in Sonoma and Mendocino Counties was approved by the Board at the August 2018 meeting. Teachers prepared the various curriculums throughout the summer and are prepared for the new school year.
Do-It-Yourself Energy and Water Saving Toolkits

The Do-It-Yourself Energy and Water Saving Toolkits continue to be available to library patrons. As of August 22, 2018, the kits have been checked out a total of 380 times from Sonoma County libraries since the program started in late-2016 and 13 total checkouts so far in Mendocino County libraries. Rebranding has been completed in Mendocino County, with rebranding underway in Sonoma County.

GridSavvy

GridSavvy allows SCP to run automated demand response programs with customer-owned devices (like EV chargers) to provide grid reliability services. The program is in full testing mode now, with approximately 500 participants, and staff are excited about the recent progress on this innovative program.

Advanced Energy Rebuild

The program is up and running, and 112 applications have been received so far. Many more are reportedly being prepared. Based on the success of the first sessions, a second series of classes will be taught in the fall at the North Coast Builder’s Exchange. SCP will also be helping to facilitate the Rebuild Green Expo in Santa Rosa in February.

Lead Locally (CEC Grant)

The Lead Locally grant team issued a Request for Qualifications for design teams to provide architectural and engineering design services for a renovation of the Energy Marketplace due Monday, September 24, 2018.

The grant team is also developing a site screening matrix to recruit 16 homes and 3 commercial properties to participate in the applied research experiments for advance technologies including: heat pump water heaters, radiant ceiling heating and cooling panels, residential attic phase change materials, air to water heat pumps, and commercial daylighting retrofits. Pre-monitoring instrumentation to be installed by December 2018.
MONTHLY COMPiled FINANCIAL STATEMENTS

The preliminary monthly Budgetary Comparison Schedule for the last fiscal year is attached. Staff is currently working with Maher Accountancy and the firm performing our outside audit, Pisenti & Brinker, to prepare the FY 17/18 audited financial statements. These statements will be presented to the CAC in October or November with a request to recommend approval by the Board at a subsequent meeting. We anticipate reporting out on the July and August financial statements at the next CAC meeting.

UPCOMING MEETINGS:

SCPA Board Meeting - October 4, 2018
SCPA Community Advisory Committee Meeting – October 24, 2018
SCPA Board Meeting – November 1, 2018
Ditch your gas guzzler.
SCP can help.

New look. Same great deals on electric vehicles.

The Drive EV program is back. Visit DriveEV.org to view eligible vehicles, incentives, dealer offers, and to apply.

Don’t miss your last chance to save thousands on an EV!

SCP incentive valid for only one vehicle, limited to one certificate per individual, two per SCP electric account. This additional incentive is limited to eligible vehicle makes/models and only available on a first-come, first-served basis. Must obtain a Verified SCP Customer Certificate to be eligible for maximum savings. Valid through November 16, 2018, or until SCP program funds are depleted. Visit DriveEV.org for full Terms and Conditions. Customers are solely responsible for the negotiation of final purchase or lease terms. Questions? 1 (855) 202-2139.

Contains recycled materials, printed with soy-based ink.
Power Content Label reflects 2017 actual electric resources for Sonoma Clean Power. This information is required by the California Energy Commission to be mailed to any customer that took service from SCP in 2017 and active SCP customers.

The generation data represents 2017 and is provided in the “Annual Report to the California Energy Commission: Power Source Disclosure Program.”

A significant portion of SCP’s energy comes from clean, large hydroelectric power stations. Under California law, large hydroelectric power stations do not qualify as eligible renewable resources.

Percentages may not total 100% due to rounding.

---

### 2017 POWER CONTENT LABEL

<table>
<thead>
<tr>
<th>ENERGY RESOURCES</th>
<th>SCP CleanStart</th>
<th>SCP EverGreen</th>
<th>2017 CA Power Mix**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible Renewable</td>
<td>45%</td>
<td>100%</td>
<td>29%</td>
</tr>
<tr>
<td>Biomass &amp; Bio waste</td>
<td>0%</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Geothermal</td>
<td>11%</td>
<td>100%</td>
<td>3%</td>
</tr>
<tr>
<td>Eligible Hydroelectric</td>
<td>0%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Solar</td>
<td>11%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Wind</td>
<td>23%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Coal</td>
<td>0%</td>
<td>9%</td>
<td>4%</td>
</tr>
<tr>
<td>Large Hydroelectric</td>
<td>42%</td>
<td>6%</td>
<td>15%</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>0%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Nuclear</td>
<td>0%</td>
<td>5%</td>
<td>9%</td>
</tr>
<tr>
<td>Other</td>
<td>0%</td>
<td>9%</td>
<td>1%</td>
</tr>
<tr>
<td>Unspecified sources of power*</td>
<td>13%</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

* "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.

** Percentages are estimated annually by the California Energy Commission based on the electricity sold to California consumers during the identified year.

For specific information about this electricity product, contact: Sonoma Clean Power Authority 855-202-2139

For general information about the Power Content Label, please visit: http://www.energy.ca.gov/pcl/

For additional questions, please contact the California Energy Commission at: 844-454-2906

---

For additional questions, please contact the California Energy Commission at:

---

738 Level 2 EV chargers provided to customers

$1M Fire recovery donations

30 THOUSAND Numbers reflect 2017 results

New Mendocino County accounts

46 MW of CA wind

Powering Success
## REVENUE AND OTHER SOURCES:

<table>
<thead>
<tr>
<th>Source</th>
<th>2017/18 YTD Amended Budget</th>
<th>2017/18 YTD Actual</th>
<th>Variance</th>
<th>Budget Variance</th>
<th>2017/18 Budget</th>
<th>2017/18 Budget Remaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue - Electricity (net of allowance) *</td>
<td>$173,796,000</td>
<td>$171,105,818</td>
<td>$ (2,690,182)</td>
<td>98%</td>
<td>$173,796,000</td>
<td>$2,690,182</td>
</tr>
<tr>
<td>Revenue - Evergreen Premium (net of allowance)</td>
<td>392,000</td>
<td>429,525</td>
<td>37,525</td>
<td>110%</td>
<td>392,000</td>
<td>(37,525)</td>
</tr>
<tr>
<td>Revenue - Electricity sales for resale **</td>
<td>-</td>
<td>590,963</td>
<td>590,963</td>
<td>-</td>
<td>(590,963)</td>
<td></td>
</tr>
<tr>
<td>Revenue - Interest income</td>
<td>475,000</td>
<td>562,637</td>
<td>87,637</td>
<td>118%</td>
<td>475,000</td>
<td>(87,637)</td>
</tr>
<tr>
<td>Total revenue and other sources</td>
<td>174,663,000</td>
<td>173,111,383</td>
<td>(1,551,617)</td>
<td>99%</td>
<td>174,663,000</td>
<td>1,551,617</td>
</tr>
</tbody>
</table>

## EXPENDITURES AND OTHER USES:

### CURRENT EXPENDITURES

<table>
<thead>
<tr>
<th>Category</th>
<th>2017/18 YTD Amended Budget</th>
<th>2017/18 YTD Actual</th>
<th>Variance</th>
<th>Budget Variance</th>
<th>2017/18 Budget</th>
<th>2017/18 Budget Remaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of energy and scheduling</td>
<td>142,643,000</td>
<td>141,874,572</td>
<td>(768,428)</td>
<td>99%</td>
<td>142,643,000</td>
<td>768,428</td>
</tr>
<tr>
<td>Data management</td>
<td>3,226,000</td>
<td>3,138,228</td>
<td>(87,772)</td>
<td>97%</td>
<td>3,226,000</td>
<td>87,772</td>
</tr>
<tr>
<td>Service fees - PG&amp;E</td>
<td>1,234,000</td>
<td>1,134,099</td>
<td>(100,901)</td>
<td>90%</td>
<td>1,234,000</td>
<td>120,901</td>
</tr>
<tr>
<td>Personnel</td>
<td>3,330,000</td>
<td>3,034,920</td>
<td>(295,080)</td>
<td>91%</td>
<td>3,330,000</td>
<td>295,080</td>
</tr>
<tr>
<td>Outreach and communications</td>
<td>951,000</td>
<td>941,449</td>
<td>(9,551)</td>
<td>99%</td>
<td>951,000</td>
<td>9,551</td>
</tr>
<tr>
<td>Customer service</td>
<td>474,000</td>
<td>467,449</td>
<td>97,551</td>
<td>99%</td>
<td>474,000</td>
<td>97,551</td>
</tr>
<tr>
<td>Legal</td>
<td>370,000</td>
<td>298,244</td>
<td>(71,756)</td>
<td>81%</td>
<td>370,000</td>
<td>71,756</td>
</tr>
<tr>
<td>Accounting and auditing</td>
<td>194,000</td>
<td>144,380</td>
<td>(49,620)</td>
<td>74%</td>
<td>144,380</td>
<td>49,620</td>
</tr>
<tr>
<td>Technical consultants</td>
<td>375,000</td>
<td>335,519</td>
<td>(39,481)</td>
<td>89%</td>
<td>335,519</td>
<td>39,481</td>
</tr>
<tr>
<td>Legislative consultants</td>
<td>165,000</td>
<td>85,149</td>
<td>(79,851)</td>
<td>52%</td>
<td>85,149</td>
<td>79,851</td>
</tr>
<tr>
<td>Other consultants</td>
<td>65,000</td>
<td>52,770</td>
<td>(12,230)</td>
<td>81%</td>
<td>52,770</td>
<td>12,230</td>
</tr>
<tr>
<td>Program implementation and development</td>
<td>6,000,000</td>
<td>3,128,898</td>
<td>(2,871,102)</td>
<td>52%</td>
<td>6,000,000</td>
<td>2,871,102</td>
</tr>
<tr>
<td>General and administration</td>
<td>780,000</td>
<td>763,010</td>
<td>(16,990)</td>
<td>98%</td>
<td>763,010</td>
<td>16,990</td>
</tr>
<tr>
<td>Fire relief donations</td>
<td>1,000,000</td>
<td>997,200</td>
<td>(2,800)</td>
<td>100%</td>
<td>1,000,000</td>
<td>2,800</td>
</tr>
<tr>
<td>Total current expenditures</td>
<td>160,807,000</td>
<td>156,194,785</td>
<td>(4,612,215)</td>
<td>97%</td>
<td>160,807,000</td>
<td>4,612,215</td>
</tr>
</tbody>
</table>

### OTHER USES

<table>
<thead>
<tr>
<th>Category</th>
<th>2017/18 YTD Amended Budget</th>
<th>2017/18 YTD Actual</th>
<th>Variance</th>
<th>Budget Variance</th>
<th>2017/18 Budget</th>
<th>2017/18 Budget Remaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collateral deposit payments</td>
<td>2,000,000</td>
<td>620,867</td>
<td>(1,379,133)</td>
<td>31%</td>
<td>2,000,000</td>
<td>1,379,133</td>
</tr>
<tr>
<td>Capital outlay</td>
<td>3,364,000</td>
<td>3,179,196</td>
<td>(184,804)</td>
<td>95%</td>
<td>3,364,000</td>
<td>184,804</td>
</tr>
<tr>
<td>Total expenditures and Other Uses</td>
<td>166,171,000</td>
<td>159,994,848</td>
<td>(6,176,152)</td>
<td>96%</td>
<td>166,171,000</td>
<td>6,176,152</td>
</tr>
<tr>
<td>Net increase (decrease) in available fund balance</td>
<td>$8,492,000</td>
<td>$13,116,535</td>
<td>$4,624,535</td>
<td>154%</td>
<td>$8,492,000</td>
<td>$4,624,535</td>
</tr>
</tbody>
</table>

* Represents sales of approximately 2,374,000 MWh for 2017/18 YTD actual.

** Electricity sales for resale represents sales to other utilities.

## RESERVES

<table>
<thead>
<tr>
<th>Category</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Cash Reserve</td>
<td>$42,391,161</td>
</tr>
<tr>
<td>Program Cash Reserve</td>
<td>7,480,793</td>
</tr>
<tr>
<td>Total</td>
<td>$49,871,954</td>
</tr>
</tbody>
</table>
LEGISLATIVE REPORT

California’s 2017-18 legislative session came to an end at midnight on August 31st. During the two-year session, 2,637 bills were introduced. As of the report drafting date, Governor Brown has signed 680 pieces of legislation this year, vetoed 19, and has until September 30th to act on an additional 864 bills.

SCP kept a close watch over 160 pieces of legislation and actively lobbied or monitored 20 pieces of legislation in 2018. The last month of session created a whirlwind of amendments concerning the legislation SCP marked as a priority. Thus, SCP was very active in the discussions at the Capitol.

Fire Related Legislation

SB 1088 (Dodd) was the original legislation pertaining to safety, reliability, and resiliency planning to deal with emergencies such as wildfires, and was replaced with a Conference Report (SB 901) in the last few days of session. SCP narrowly fought for a language change in SB 1088 that would have stripped CCAs of the ability to run GridSavvy and other large-scale demand response programs. That effort was ultimately successful, since the language was not reintroduced to SB 901 when that bill replaced it. In the final hours, SB 901 passed both houses.
SB 901 sets aside $200 million for forest health – thinning trees and other projects to make the state’s forests less fire-prone. It also allows utility companies, which are liable for the costs of any fires sparked by their power lines, to pass some of the costs of the 2017 fires onto their customers after a review determining how much the utilities shareholders can afford. The bill further stated that for fires that began this year and beyond, a new commission would decide whether utilities would be able to pass costs onto customers and suggest broader changes to liability laws. In the end, PG&E, labor unions, fire victims, loggers, firefighting groups, and cities supported SB 901 and stated that there is more good than bad in the bill. Ratepayer advocates (residential as well as industrial energy users) opposed the passage of SB 901 stating that it is a bailout for the utilities that failed to properly maintain equipment to prevent fires. SB 901 is on the Governor’s Desk.

Even though SB 901 became the main focus for fire related legislation, over 40 pieces of legislation related to fire and emergency response have been sent to the Governor’s Desk and are awaiting his action.

AB 2267 (Wood). The City of Santa Rosa’s priority legislation on making downtown housing easier to build following the fires ultimately did not make it out of the Senate. AB 2267 was supported by SCP because it would have made energy efficient apartments and condominiums easier to permit in downtown, transit-friendly locations. The bill was also supported by the County of Sonoma and the City of Santa Rosa because it would have provided a limited CEQA exemption for residential projects within the denser downtown areas of Santa Rosa. AB 2267 was one of four high-profile pieces of legislation providing CEQA exemptions for large projects. The remaining three CEQA bills were sent to the Governor’s Desk, including full CEQA exemptions for the Oakland Athletics new stadium, the Los Angeles Clippers new arena, and an exemption to the State of California in order to build a new office annex for the Legislature’s employees adjacent to the Capitol.

AB 2267 was not alone in trying to provide much needed residential housing to the residents of the State of California. During the two-year session, over 140 pieces of legislation were introduced to help relieve California’s housing crisis and the majority of the bills did not pass.

Energy Related Legislation

As dignitaries descended on San Francisco for the Global Climate Summit spearheaded by Governor Brown, he signed SB 100 (de Leon) on September
10th. SB 100 (de Leon) requires the state’s utilities to acquire 100 percent of their power from clean energy sources by 2045. Governor Brown used this signing ceremony to also sign an executive order calling for the state to achieve carbon neutrality by 2045 and net negative greenhouse gas emissions in 2046. This has been one of the Governor’s goals since he took office eight years ago. SCP supported SB 100.

SCP also supported AB 813 (Holden) that would have reduced risks associated with building renewable energy plants in California by creating stronger export markets for excess energy and ensuring better multi-state coordination of the grid. However, the Legislature ultimately decided against grid regionalization this year. Proponents argued it could increase the amount of renewable energy California produces, while alleviating a problematic spike and drop-off of solar energy as the sun rises and sets. Governor Brown stated that “without a regional grid, renewable energy cannot expand in an integrated and efficient manner, nor can California continue its climate leadership.”

AB 893 (E. Garcia) would have required each retail seller of electricity and each local publicly owned electric utility to procure a proportionate share of electricity products from a statewide total of 4,250 megawatts of renewable resources. The main purpose of AB 893 was to create a mandate for the procurement of geothermal power from the Salton Sea. SCP opposed on the grounds that it would have mandated SCP to purchase more geothermal than it could use, and would be required to buy it in an uncompetitive manner at high prices. Since 2014, three additional pieces of legislation have been introduced on this subject and have all failed. AB 893 failed to pass out of the Senate.

SB 237 (Hertzberg) would require the California Public Utilities Commission (CPUC) to increase direct access by 4,000 gigawatt-hours (about 20%) on or before June 1, 2019. SCP recruited CalCCA to lead a large coalition in opposition to SB 237 because the expansion of direct access would increase greenhouse gas emissions and sharply cut construction of new renewable sources in California. Direct access providers openly state in their Integrated Resource Plans that they maximize use of unbundled RECs and unspecified source energy to minimize costs and compete with utilities and CCAs purely on price. SB 237 passed the Legislature and is on the Governor’s Desk. SCP has asked the Governor to veto. See the attached letter from TURN, Sierra Club, NRDC, and many other coalition partners.
Electric Vehicles

While Governor Brown was in San Francisco at the Climate Summit he signed a comprehensive package of bills aimed at dramatically reducing carbon emissions by boosting the number of zero-emission vehicles and charging stations in California. SCP actively supported AB 2127 (Ting) and SB 1014 (Skinner). They are two of the eight bills Governor Brown signed that will build on the state’s efforts to boost zero-emission vehicles in California.

AB 2127 (Ting) supports the state’s goal of achieving 5 million ZEVs on the road by 2030 by affirming the California Energy Commission’s authority to assess the need for charging infrastructure to support adoption of zero-emission vehicles, including freight and off-road vehicles.

SB 1014 (Skinner) directs the state to develop emissions reduction targets for ride-hailing services (i.e. UBER and Lyft), which represent a growing element of California’s transportation sector. Governor Brown stated that SB 1014 will help ensure that work he has set into motion to increase adoption of zero-emission vehicles in public and private fleets throughout the state continues.

REGULATORY REPORT

Power Charge Indifference Adjustment (PCIA)

On September 27th, the Commission will vote on the future framework of PCIA and corresponding rate changes. There are two proposals under consideration.

The first Proposed Decision (“PD”) was issued on August 1st by ALJ Roscow, the assigned judge who presided over the proceeding over the last year. While that PD fails to recognize the inherent mismatch in valuing long-term assets by spot-market sales, it strikes a balance and limits the amount of utility-owned resources (which PG&E shareholders earn a profit from) which CCA customers would be held liable for. Overall, it would result in a reduction of the PCIA and the number of assets which PG&E shareholders would continue to earn profits on.

The second or Alternate Proposed Decision (“APD”) was issued by Commissioner Carla Peterman on August 14th. It differs from the PD in several substantial ways and would significantly increase the PCIA. The increase is due to two main factors. First, it would hold CCA customers liable for utility
costs which were not included in AB 117, the legislation which allowed for community choice. Second, it would remove the existing ten-year limit in which IOUs can recover costs and generate profits on assets they own. The result of these two changes is that the PCIA would increase from 2019 onwards, and would be collected from customers for an unlimited amount of time.

Board Members sent a letter to Commissioners admonishing them to reject the APD and adopt the PD to ensure a fair and balanced market. SCP staff have held multiple meetings with Commissioners to discuss the merits of these proposals and caution against considering the APD. In addition, staff from SCP and multiple other CCAs have submitted written comments on this issue.

It is still possible that changes to the PD or APD will be made. These two proposals most likely represent the two “book ends” the Commission is considering in revising the PCIA. Changes to the PCIA are planned to go into effect beginning January of 2019.

PG&E 2019 Forecast Energy Resource Recovery Account (ERRA)

Sonoma Clean Power, joined by other Northern California CCAs, submitted a protest to PG&E’s 2019 ERRA Application. This is the process wherein electric rates, including the PCIA, are set for the following year. SCP continues to advocate that prudent management of contracts must be evaluated in this proceeding. The IOUs are required by the CPUC’s Standards of Procurement and Policy Manual to manage their portfolio to the benefit of all ratepayers. This manual explicitly states that, in performing this duty, IOUs may need to dispose of unneeded resources and/or purchase short-term resources instead.

Sonoma Clean Power and other CCAs have requested that PG&E provide all the underlying workpapers and testimony supporting these rate changes. As some of this information is confidential, the CCA parties will use an external consultant under NDA – Richard McCann – to ensure that PG&E’s confidential calculations were done accurately and only include unavoidable costs.

On September 20th, the CPUC held a hearing on the ERRA Proceeding to discuss whether their rate calculations were accurate and done in compliance with existing directives.

After an update to ERRA figures is released in November, changes to bundled and CCA customer rates are planned to go into effect on January 1st, 2019.
August 3, 2018

The Honorable Lorena Gonzalez Fletcher
Chair, Assembly Appropriations Committee
State Capitol, Suite 2114
Sacramento, CA 95814

Re: SB 237 (Hertzberg)-- OPPOSE

Dear Assembly Member Gonzalez Fletcher,

We must respectfully convey our strong opposition to SB 237, which would eliminate the cap on direct access for non-residential electric customers by July 1, 2019, allowing all nonresidential electricity consumers to migrate away from investor-owned utilities (IOUs) and community choice aggregators (CCAs) to contract for the cheapest power they can obtain.

California last authorized unlimited direct access in AB 1890 (Brulte, 1996). When spot market electricity prices spiked in 2000, costs for utility customers increased, certain direct access
providers reaped excess profits, and direct access customers were dumped back to utility service *en masse*. Direct access providers cut and ran when their customers, and the state, needed stability most.

Today, expanding direct access creates even greater risks. Even though direct access providers are subject to the RPS and other laws, they do not develop their own resources. They seek out short-term procurement contracts for excess capacity and energy from projects built under long-term contracts with other service providers. That procurement strategy is based on the fact that ESPs serve their customers under short-term contracts that range from month-to-month agreements up to three years, with customers able to switch back-and-forth between ESPs and to IOU service when the economics are favorable.

The transient nature of both ESPs’ procurement practices and customer base is at odds with California’s commitment to clean energy and equity. Without a consistent, long-term foundation, the ESP business model fails to foster the type of lasting commitments that resource planners and renewable energy developers need to obtain financing, drive new resource development, and recover costs.

SB 237 also lacks any commitment to California’s communities, including our most disadvantaged populations. While IOUs and CCAs serve all customers in their communities, including low-income residential customers, ESPs serve only commercial and industrial customers. Moreover, utilities and CCAs serve their communities with programs that extend beyond clean energy to support a range of local priorities including programs that accelerate electric vehicle adoption, incentives that support rebuilding in fire ravaged areas, expanded energy efficiency programs, local solar programs and robust job training programs. These efforts are all put at risk by this proposed legislation.

The expansion of direct access would also remove critical information from public view and prevent meaningful public oversight. The procurement transactions executed by ESPs are not subject to CPUC approval or local government approval. ESPs routinely assert claims of confidentiality with respect to basic information that is publicly disclosed by IOUs, publicly-owned utilities, and CCAs. SB 237 would result in less transparency in energy markets and more information being deemed confidential trade secrets that cannot be shared with the public or the Legislature.

Increasing direct access pushes the State towards a Texas-like environment where promotional electricity marketing, poor energy efficiency records, and resistance to climate policy prevail. California has not chosen that path. It has chosen to lead on climate and clean energy and to support its most vulnerable communities. Continuing on such a path requires the rejection of SB 237.

Sincerely,

Matthew Freedman, The Utility Reform Network (TURN)
Eddie Moreno, Sierra Club California
Erica Martinez, Earthjustice
Ralph Cavanagh, Natural Resources Defense Council (NRDC)
Mayor Jesse Arreguin, City of Berkeley
Nicole Capretz, Climate Action Campaign
Hanna Grene, Center for Sustainable Energy
Beth Vaughan, California Community Choice Association (CalCCA)
Al Weinrub, California Alliance for Community Energy
Dan Brotman, SoCal 350 Climate Action
Ken Jones, 350 Bay Area Action
Sebastian Sarra, San Diego Community Choice Alliance
Kathy Callaway, Mainstreet Moms Organize or Bust (MMOB)
Roger Gloss, Orange County for Climate Action
Shoshana Wechsler, Sunflower Alliance
Bruce Naegel, Sustainable Silicon Valley
Gopal Shankar, Recôlте Energy
Ed Mainland, Sustainable Marin and Sustainable Novato
Ann V. Edminster, Design Avenues

c: The Honorable Frank Bigelow
The Honorable Richard Bloom
The Honorable Rob Bonta
The Honorable William P. Brough
The Honorable Ian C. Calderon
The Honorable Wendy Carrillo
The Honorable Ed Chau
The Honorable Susan Talamantes Eggman
The Honorable Vince Fong
The Honorable Laura Friedman
The Honorable James Gallagher
The Honorable Eduardo Garcia
The Honorable Adrin Nazarian
The Honorable Jay Obernolte
The Honorable Bill Quirk
The Honorable Eloise Gomez Reyes
Jay Dickenson, Assembly Appropriations Committee
The Honorable Bob Hertzberg
Staff Report – Item 04

To: Sonoma Clean Power Community Advisory Committee

From: Cordel Stillman, Director of Programs

Issue: Update on 431 E. Street

Date: September 27, 2018

Requested Committee Action

Receive an update from staff regarding progress on the renovation of 431 E Street.

Background

Project Goal – To provide a headquarters for Sonoma Clean Power that maintains a healthy workplace while showcasing energy efficiency and fuel switching in the built environment.

Earlier this year, SCP purchased an office building located at 431 E Street in downtown Santa Rosa to serve as a headquarters for SCP. The building will require significant renovation before it is ready to occupy.

Following a competitive selection process for the full scope of design through construction for the project, SCP selected a team lead by EHDD, an architectural firm based in San Francisco to perform design and other services for the full duration of the renovation project of the building SCP has purchased for its new headquarters.

The selection process began with a Request for Qualifications ("RFQ") covering schematic design through the end of construction administration. The RFQ was sent to a large number of architectural firms as well as advertised on the SCP website.
teams responded to the RFQ. After an initial screening of Statements of Qualification, three firms were selected to interview with SCP staff. Interviews were held the week of June 25th and EHDD was selected based on their broad experience in retrofitting existing buildings to a high level of energy efficiency, their experience with local government contracting and their project management experience.

SCP selected EHDD to complete the entire design beginning with schematic design through the end of construction administration. Under contract with SCP, EHDD has started preliminary schematic design work. SCP intends to bring an amended and restated professional services agreement to the Community Advisory Committee and the Board of Directors to clarify and memorialize SCP’s overall intent to engage EHDD for the full scope of the engagement.

EHDD has begun preliminary work on the schematic design. Initial work included meetings with SCP staff to confirm the program (how many offices, conference rooms, etc.) as well as ways to group staff that work together. EHDD provided three initial layouts as examples based on early input from SCP staff. SCP staff reviewed the layouts and provided additional comment to EHDD.

A topographic survey of the property was performed on August 29th and the results forwarded to EHDD on September 10th.

SCP staff will continue to communicate with the CAC and the BOD through a monthly newsletter that will document progress made and next steps.

Next Steps:

1) Secure Board Approval of Amended and Restated Agreement for Professional Services with EHDD clarifying and memorializing full scope engagement for design services.

2) Finalize Schematic Design

3) Prepare a Construction Budget based on the Schematic Design

4) Issue a Request for Qualifications for a firm to perform Construction Management.
Staff Report – Item 05

To: Sonoma Clean Power Community Advisory Committee
From: Cordel Stillman, Director of Programs
Issue: Electric Vehicle Charging Infrastructure Program
Date: September 27, 2018

Requested Board Action:
Provide input on proposed SCP programs involving electric vehicle infrastructure

Background

The largest source of greenhouse gas emissions in SCP’s service territory comes from the transportation sector. For the past three years, SCP has concentrated efforts in this arena towards the adoption of electric vehicles by our customers. Our three Drive EV efforts have raised the awareness EV’s available in our territory. Having been successful in promoting the adoption of EV’s, in the next fiscal year, SCP will now switch its focus to the promotion of Electric Vehicle Service Equipment (EVSE) also commonly called chargers.

SCP has several EVSE programs that have been running for some time. Our residential EVSE program has been responsible for placing over 2100 EVSE’s in residences and small businesses in our territory. Our workplace charging program has been working with several large entities to place EVSE’s at large employers, with limited success.

SCP has been working with the Regional Climate Protection Authority to identify likely locations for EVSE and to identify issues and constraints around the placement of EVSE’s. Some of the issues identified include the following:
1) Americans with Disabilities Act – All new EVSE’s must comply with the latest ADA standards

2) Grid Compatibility – New EVSE’s should be placed in areas that do not require distribution grid upgrades

3) Multi-Unit Dwellings – Multiple issues in this arena including; ADA, siting, owner engagement, etc.

SCP staff have identified two programs around EVSE that we would like to describe and get input from the Committee.

1) Level 3 EVSE Program – Level 3 (or DC fast charging) is not widely available in SCP territory. This type of charging is designed to top off electric cars in a short period of time. They are generally located in shopping centers (where people can charge quickly while shopping) or along transportation corridors for people to re-charge while on longer trips. Our program idea is to offer to subsidize the location of at least one Level 3 charger in each jurisdiction represented by SCP. Locating EVSE’s on City and County owned property will streamline the site selection process.

2) On-Street EVSE – An idea that we are borrowing from Lancaster Choice Energy is the use of existing streetlighting to facilitate on-street car charging. The City of Lancaster owns their street lighting system and, after converting to LED lighting, they have retrofitted some of their light standards with EVSEs. This might be a good solution for some of the issues listed above. Some of our jurisdictions own their street lighting systems and could possibly qualify for grants. SCP could act as a facilitator and potentially subsidize the cost of conversion.

Staff are also working with all three air pollution control districts in our territory to identify additional funding opportunities.
To: Sonoma Clean Power Authority Community Advisory Committee

From: Rebecca Simonson, Power Services Manager
CB Hall, Compliance Analyst

Issue: Recommendation for SCP Board to Approve SCP's 2018 IRP

Date: September 27, 2018

**Requested Committee Action**

Recommend SCP Board Approval of SCP’s 2018 Integrated Resource Plan.

**Background**

This IRP is the next evolution of SCP’s resource planning process, following work between 2015 and early 2018 by staff with the Business Operations Committee and later with an ad hoc committee of the Community Advisory Committee. Its content builds on that earlier work and includes more description of how SCP can support statewide planning processes.

This IRP identifies the necessary resources to serve customer needs through 2030. It differs from the CPUC's requested IRP under D.18-02-018 in that it contains SCP’s best available information on actual load and generation, and important information about SCP’s goals and vision. A draft version of this IRP was presented at the Community Advisory Committee meeting held on Tuesday, July 24, 2018. This proposed final version incorporates feedback, edits, and comments from Community Advisory Committee members. SCP staff plans to request approval of this proposed final version from SCP’s Board of Directors on October 4th, before posting this document on its website.

SCP staff greatly appreciates the time spent by the Community Advisory Committee to review and provide edits to earlier versions.
PROPOSED FINAL
2018 Integrated Resource Plan

September 19, 2018
## Contents

1. Introduction to Sonoma Clean Power ................................................................. 5  
   A. Purpose .............................................................................................................. 5  
   B. Service ............................................................................................................... 5  
   C. Governance ....................................................................................................... 7  
   D. Territory ............................................................................................................. 8  

2. Rethinking Integrated Resource Planning ............................................................. 9  
   A. Responsibility Beyond Supply and Demand ....................................................... 9  
   B. How This IRP Differs from the CPUC’s IRP ..................................................... 10  
   C. SCP’s Role in Creating Needed Energy Market Changes ............................. 12  
   D. Preparing for an Upside-Down Grid .................................................................. 14  

3. Portfolio Regulatory Requirements ...................................................................... 16  
   A. Regulatory Deliverables .................................................................................. 16  
   B. Resource Adequacy .......................................................................................... 18  
   C. Renewable Portfolio Standard ......................................................................... 21  
   D. Energy Storage .................................................................................................. 22  
   E. Greenhouse Gas Reporting ............................................................................. 23  
   F. Power Source Disclosure ............................................................................... 24  

4. Customer Load ..................................................................................................... 26  
   A. Historical Number of Enrolled Customers ....................................................... 26  
   B. Historical Load (MWh) .................................................................................... 27  
   C. Historical Peak (MW) ...................................................................................... 30  
   D. Forecast Customer Load .................................................................................. 31  

5. Resource Plan ...................................................................................................... 35  
   A. Strategy .............................................................................................................. 35  
   B. Resource Plan Overview .................................................................................. 36  

6. Integrated Procurement of Supply and Demand Resources ................................. 43  
   A. Procurement ..................................................................................................... 43  
   B. Demand Resources .......................................................................................... 43  
   C. Managing Risks ................................................................................................. 46  

7. Exhibit A: CPUC IRP Compliance Filing .............................................................. 48  

8. Exhibit B: SCP Programs Strategic Action Plan .................................................... 49
Executive Summary

Sonoma Clean Power Authority (SCP) is a public power provider operating as a community choice aggregator (CCA) and the default electricity provider for Sonoma and Mendocino Counties. SCP exists to provide broad public benefits relating to affordability, reliability, climate change and sustainability, coordination with local agencies, customer programs, and to support the local economy.

This Integrated Resource Plan (IRP) identifies the necessary resources to serve customer needs through 2030. It differs from the IRP requested by the California Public Utilities Commission (CPUC) under D.18-02-018 in that it contains SCP’s best available information on actual load and generation, and important information about SCP’s goals and vision. SCP’s Board of Directors has directed staff to file the CPUC’s mandated compliance IRP (see Exhibit A), however the Board requests that all statewide planning be based on the more accurate information contained in this IRP. More detail on the differences can be found in Exhibit A. Many thanks to SCP’s Community Advisory Committee and its ad hoc group for working with staff on early versions of the IRP.

Important conclusions from SCP’s planning process include:

1. While a low-carbon mix of power sources is essential, the use of electricity to displace gasoline in cars and natural gas in buildings (sometimes called “electrification” or “fuel shifting”) should be prioritized at an even higher level in California. SCP is working to facilitate the reduction of total greenhouse gas (GHG) emissions across all sectors, for example with programs to rebuild burned homes with 24/7 renewable sources and no natural gas, bulk discounts on electric vehicles, and construction of an “Energy Store” where customers can purchase zero carbon technologies.

2. Near-term grid reliability will require multi-year local resource adequacy (RA) obligations and upfront procurement of resources with local market power.

3. Energy affordability through 2030 will require deep customer engagement to reduce expensive and high-GHG evening energy usage, and to use smart-grid devices to avoid costly utility investments.

4. Concerns over the financial ability of CCAs to contract for new resources appears to be unfounded, and in any case, hasn’t impacted SCP’s ability to procure resources.

5. CCAs working with their local public agencies have the potential to add low-cost and high-value electric vehicle charging infrastructure to supplement Investor-Owned Utility (IOU) activities. Local agencies have detailed maps of locational needs, including disadvantaged community access sites, and some have developed maps of excess grid capacity that have the potential to avoid significant grid upgrade costs.

6. Solutions to system reliability will accelerate dramatically when actual smart meter data is used for all customers and public access is provided to all real-time distribution grid data.

7. As illustrated by the following chart, SCP’s load is expected to remain relatively stable through the planning horizon with a 0.13% decrease in load. Moving from left to right, the 2019 “Base” year forecast load increases by 2.49% from population and rebuilding and by 6.03% from electric vehicles. This increase in forecast load is offset by a projected decrease in load of 2.78% from energy efficiency and 5.88% from Behind-the-Meter (BTM) solar. The total net decrease in load from the “Base” year to 2030 is 0.13%.
8. SCP’s peak load is expected in September and is forecast to decline slightly from 580 MW in 2017 to 558 MW in 2030 and is forecasted to shift further into the evening, as electric vehicles are returning to residences to be charged.

9. SCP is on track to reach its own ambitious greenhouse gas emissions intensity target of 75 lbs CO₂/MWh (0.034 MT CO₂/MWh) by 2030. SCP is also on track to reach its own target of 50% qualifying renewable sources by 2020, approximately six years ahead of California’s new requirements (per SB 100, approved 9/10/2018). In 2017, SCP’s estimated emissions (not yet third-party verified) totaled 128 lbs CO₂/MWh (0.06 MT CO₂/MWh), and SCP’s qualifying renewable sources totaled 45%. The chart below shows SCP’s current resources (i.e., resources under contract or in active negotiation) as well as SCP’s planned resources (i.e., additional resources that SCP plans to procure through 2030).
CCAs are rapidly establishing themselves as renewable energy providers, sources for cutting edge programs in carbon reduction and sustainability, and trusted local community partners across California. SCP plays an important role in the governance of the statewide CCA association, CalCCA. SCP’s CEO currently serves as the Legislative Liaison and Vice President of the organization, and SCP’s regulatory, compliance, marketing, customer service and power services staff serve on key committees. CalCCA is playing a key role in sharing best practices, educating lawmakers about this new form of public power and encouraging new CCAs to better manage risks and evolve quickly.
1. Introduction to Sonoma Clean Power

A. Purpose

The Sonoma Clean Power Authority (SCP) is a public agency created in 2012 to provide broad public benefits in energy, climate and the economy. As a Community Choice Aggregator or “CCA,” it provides public benefit investments and programs, and is the default electricity provider to customers in Sonoma and Mendocino Counties in California. SCP was created to provide customers with stable, affordable rates while working to solve the climate crisis. SCP’s goals are defined in its Joint Powers Agreement (JPA) and include:

1. **Rate stability and affordability.** SCP seeks to reduce the volatility of customer electric bills through conservative contracting (i.e., managed risk), diverse portfolios of sources and suppliers, and rate-setting practices to reduce the frequency and magnitude of large swings in customer costs. SCP seeks improved affordability through competitive supply negotiations, accurate load forecasting and scheduling, low overhead costs, and through advocacy at California’s regulatory agencies.

2. **Accelerate Climate Solutions.** SCP seeks to use its staff, finances, Board and Community Advisory Committee, and its close relationships with local public agencies to create rapid solutions to climate change in all sectors. This means that while SCP is not primarily responsible for greenhouse gas emissions in transportation and land use, for example, it still has an obligation to aid those sectors whenever it has the capacity to do so.

3. **Coordination with Local Agencies.** SCP coordinates its work on climate change with the Regional Climate Protection Authority, local transportation agencies, water agencies, open space districts and each of our member cities, town and counties. It is unreasonable to expect an Investor-Owned Utility (IOU) to interact so closely with every local public agency, but such coordination of the energy impacts of land use planning or the locational value of electric vehicle charging for low-income customers is critical.

4. **Customer Programs.** SCP seeks to support and supplement the existing customer programs offered by local agencies and Pacific Gas & Electric (PG&E) by delivering forward-thinking programs that are not allowed under California Public Utilities Commission (CPUC) rules (e.g., fuel substitution) or are not appropriate for an IOU to deliver (e.g., short duration, experimental, fast-paced, or targeted to specific neighborhoods or industry).

5. **Local Investment.** SCP seeks to invest in local electric sources and reliability services, use local professional services, donate to local charities and generally seeks to invest its reserves in local funds and banks.

B. Service

SCP began serving customers in May 2014 and in September 2018 serves a population of about 525,000 people with 224,000 electric accounts across Sonoma and Mendocino counties. In aggregate, 86% of SCP’s accounts are residential, accounting for approximately 50% of its load.
Community Programs

As part of its mission to reduce greenhouse gas (GHG) emissions across all sectors and supply electricity to Sonoma and Mendocino counties, SCP offers programs related to clean transportation and energy efficiency. Near-term, short-term and long-term program goals are defined in a Strategic Action Plan that is regularly updated, and is included in this document as Exhibit B. Load impacts and accomplishments of these customer programs are described in Chapter 7.

Community Engagement

The creation of SCP was spearheaded by local community groups, local government, environmental activists, local labor and businesses. As a result, SCP is closely connected with its community. SCP participates in more than 100 public events in its territory each year, sponsors numerous non-profits, and many SCP employees serve on local boards and committees. SCP also engages in a leadership role in the community where appropriate, such as responding to local needs following the 2017 firestorm.

Immediately following the October 2017 fires, SCP lent staff to the County of Sonoma to manage the protection of creeks and watersheds and committed $1 million to relief efforts. More importantly, however, SCP began hosting a conversation among fire survivors, developers, city and county staff, and other stakeholders about how to rebuild homes to be more energy efficient, more affordable, and climate smart. Out of that dialog, the Advanced Energy Rebuild program was born.

For the Advanced Energy Rebuild, SCP recruited PG&E and Bay Area Air Quality Management District (BAAQMD) to partner on a joint program to incentivize rebuilding homes with deep energy efficiency, EV charging, onsite renewable energy with storage, and bonuses for building all-electric with no natural gas connection. A rebuilt home that doesn’t use any natural gas can earn up to $17,500 in incentives.

SCP is also demonstrating how the “community solar” option in the 2020 Title 24 code could be expanded for the 2022 Title 24 update. The proposed code improvement will be tested in the Advanced Energy Rebuild and will allow two refinements: (1) a clarification that the intent was to promote local RPS-eligible renewables and not solar alone; and (2) a recognition of the growing importance of connecting real-time supply and real-time load with storage or baseload renewable supply from local sources, such as SCP’s EverGreen option. Customers are able to pre-purchase a 20-year commitment to local, renewable 24/7 energy.

Customer Supply Options

SCP offers its customers two supply options. The default service is CleanStart, which provided customers in 2017 with 45% renewable power and an additional 42% from large hydro. SCP’s 100% renewable option is EverGreen, currently priced at a premium of 2.5 cents per kWh, coming from qualifying renewable sources located entirely inside SCP’s territory and designed to closely match the real-time profile of customer demand. SCP also offers NetGreen, a net energy metering program which allows customers to offset their consumption of SCP-supplied power (whether CleanStart or EverGreen) with customer-owned renewable energy.

SCP customers have the choice to opt out of SCP’s default service and buy energy from PG&E. As of June 30, 2018, SCP serves 87% of eligible customers. All SCP customers remain PG&E transmission and distribution customers. While SCP provides energy generation, customer programs and customer service, it does not deliver or meter the physical power, nor does it distribute customer bills. PG&E is the
only option for delivery and metering, and SCP partners with PG&E for billing services. All of SCP’s customers receive one consolidated bill from PG&E that includes both the SCP generation charges and PG&E’s delivery charges. PG&E also charges SCP customers for their share of the above-market procurement costs incurred by PG&E while such customers were bundled PG&E customers. This charge, called the “Power Charge Indifference Adjustment,” is required by California law to ensure that neither bundled utility customers nor CCA customers are financially harmed by the existence of community choice programs.

Customer Service

SCP has a Customer Service team devoted to helping its customers, which include residential, commercial, industrial and agricultural accounts. The Customer Service team’s primary operational capabilities are:

- Navigating and interpreting billing issues with both in-house and through a local third-party call center
- Industry-specific engagements, such as the Economic Development Board, Farm Bureau, Winegrape Commission, etc.
- Facilitating SCP program participation: DriveEV, Demand Charge Reduction Program, Technical Assistance and Auditing Program, DIY Toolkits, etc.
- Interfacing directly with the California Public Utilities Commission (CPUC) and PG&E on a range of co-ventures (Time-of-Use Pilot Program, Residential Rate Reform, CCA/PG&E Joint Rate Mailers, etc.).

C. Governance

SCP is a joint powers authority governed by an eleven-member Board of Directors consisting of officials appointed by its members from the Counties Mendocino and Sonoma, the Cities of Cloverdale, Cotati, Fort Bragg, Petaluma, Point Arena, Rohnert Park, Santa Rosa, Sebastopol, Sonoma, Willits, and the Town of Windsor. The Board of Directors oversees a Community Advisory Committee to review important decisions and provide advice to the Board.

CCAs are variously referred to as a “Community Choice Aggregator,” a “Retail Electric Provider,” and a “Load Serving Entity (LSE)” under California law. CCAs were made possible by the adoption in 2002 of Assembly Bill 117, as one of the State’s efforts to insert more public oversight over energy markets and reduce risk following the energy crisis.

The purpose, structure and rules of SCP were initially developed between 2010 and 2013 by a Stakeholder Committee of representatives from local governments, labor, environmental groups, businesses and taxpayer and ratepayer advocates, and which were ultimately codified in the Joint Powers Agreement (JPA) that formed SCP. Since formation, the Board of Directors has updated the JPA and adopted policies to manage risk, increase transparency, provide for customer rights, adopt personnel rules, set internal procurement authorities and govern other business matters.
D. Territory

SCP provides service to nearly all of Sonoma and Mendocino Counties, excluding only the incorporated cities of Healdsburg and Ukiah, which are served by municipal utility districts.

Sonoma County is known for its wine, dairy products, hops, apples and beautiful coastline and countryside. Major industries include tourism, agriculture, ranching, healthcare and medical devices, technology and education. SCP began serving Sonoma County in 2014.

Mendocino County is known for its rugged coastline and redwood forests. Economic activity is driven by agricultural products, forest products, fishing and tourism. SCP began serving Mendocino County in June 2017.
2. Rethinking Integrated Resource Planning

In February 2018 (D.18-02-018), the CPUC directed LSEs to share (by August 1, 2018) “Integrated Resource Plans,” consisting of specific data and based on CPUC-required templates. To comply with this requirement, SCP staff completed the CPUC-required templates, obtained approval from SCP’s Board of Directors on July 12, 2018 and submitted the IRP compliance filing in July 2018 (see Exhibit A for a full copy of the submission). However, in addition to complying with CPUC requirements, SCP has developed its own internal Integrated Resource Plan, which is believed to better reflect SCP’s actual projected load and resources, and includes important information about SCP’s vision and values (see Exhibit A, Table 3 for more detail). As a result, this IRP serves two purposes:

- Provides SCP’s most accurate information to be used in statewide planning; and
- Identifies additional IRP responsibilities necessary to maintain energy affordability and reliability while meeting the State’s climate goals.

A. Responsibility Beyond Supply and Demand

Historically, integrated resource planning has been based on forecasting customer demand as modified by assumed efficiency program impacts and then ensuring sufficient supply resources to meet that demand. More recently, integrated resource planning has incorporated efforts to increase the use of renewable sources and decrease GHG emissions. In the last few years, an effort has begun to plan for “renewable integration,” the work necessary to ensure grid reliability as more of California’s energy comes from solar and wind resources.

While these planning steps are necessary, they fail to ensure that California’s climate goals are met. California’s current planning process seeks to provide affordable, reliable, low-carbon electricity, but it doesn’t go far enough in examining the responsibility of the electric power sector to maintain affordability while also displacing other energy sources like gasoline. It also largely ignores the importance of customer participation in grid reliability measures. The result is that most projections of our energy future fall short of the necessary goals, as articulated in Senate Bill (SB) 350 (De León 2015) and Assembly Bill (AB) 32 (Núñez/Pavley 2006):

- By 2030, reduce GHG emissions to 40 percent below 1990 levels
- By 2050, reduce GHG emissions to 80 percent below 1990 levels

Electric providers have so far made good progress in decarbonizing each megawatt-hour of electric energy produced. But focusing solely on decarbonization of electricity resources ignores an essential component for achieving California’s climate goal: using clean electricity to displace other fuels, particularly petroleum for on-road transportation and natural gas for building heating and water heating. According to Sonoma County’s July 2016 Climate Action 2020 report, these two sources make up nearly 80% of Sonoma County’s greenhouse gas emissions and are replaceable with clean electricity.
B. How This IRP Differs from the CPUC’s IRP

As an LSE, SCP has core responsibilities for planning supply and demand, maintaining affordability and reliability, and for planning ahead to ensure California’s climate goals can be met.

One of SCP’s core responsibilities is to forecast its customer load and develop a plan to serve such load in alignment with its Board of Directors’ vision and values and in accordance with regulatory requirements. In 2015, California codified this responsibility with the passage of SB 350, which requires the CPUC to establish and oversee an Integrated Resource Planning process. Across the United States, Integrated Resource Plans (IRPs) are often 10 to 20 year plans that map out both the supply-side and demand-side resources required for meeting customer needs. Given the complexity of the grid and the time required
to plan and build generating facilities, IRPs are a critical part of planning for affordable and reliable clean power.

In California, Senate Bill 350 (2015) has driven integrated resource planning towards a more specific goal: helping the State meet its ambitious near-term GHG-reduction targets of 40% below 1990 levels by 2030. Accordingly, the CPUC has developed a capacity expansion model (called Resolve) that limits GHG emissions from California’s electric sector and—while meeting reliability, regulatory and other requirements—intends to produce a cost-effective portfolio of resources. The CPUC calls this portfolio its Reference System Plan and has produced a scenario assuming 42 MMT\(^1\) of electric sector GHG emissions per year in 2030.

While SCP must meet the criteria of SB 350 and show its compliance to the CPUC for certification, State law allows and requires SCP’s governing board to determine how to achieve those goals, whether to use CPUC models as part of SCP’s planning process, and to approve SCP’s IRP.

Since this is SCP’s first complete IRP, SCP’s process will necessarily be refined in subsequent plans. In addition to seeking to improve the CPUC’s internal process for sharing IRP data, SCP has also invited the CAISO to meet late in 2018 to discuss what additional data it needs to more accurately identify necessary reliability resources in the year-ahead RA process, particularly for sub-local areas.

The following chapters will discuss SCP’s customer load, the resources required to meet such load and SCP’s procurement processes. In addition, this IRP illustrates how SCP’s planned activities fulfill SCP’s governing board’s vision, values and regulatory requirements.

SCP’s efforts to go beyond traditional resource planning include:

1. **GridSavvy.** A grid reliability platform being built to provide the capability of automatically dispatching electric vehicle chargers, heat pumps, thermostats and stationary batteries to both increase and decrease load on a fast signal. The goal of GridSavvy is to achieve Proxy Demand Response participation in 2020, Non-Generating Resource participation in 2024 and qualified System Resource Adequacy in 2030. By 2030, SCP aims to provide a minimum of 5% of RA from GridSavvy. The technical potential of GridSavvy appears to be sufficient to supply a small majority of real-time and hourly load shaping by 2050, but none of the reliability needs of the *Dunkelflaute.*\(^2\)

2. **Portfolio.** SCP purchases long-term PPAs of renewable sources with a goal of matching real-time customer load as closely as practical before utilizing shaping or other strategies. The intent of this strategy is to minimize our reliance on system power and reduce the corresponding financial risk to our customers. Specifically, we:

   - Buy geothermal, wind, solar, hydro, biomass and other non- and very low-GHG sources in an effort to best match hourly and seasonal customer demand, while purchasing high-value RA from these same sources and negotiating for curtailment rights on solar and wind; then

---

\(^1\) “MMT” means millions of metric tons of carbon dioxide equivalent emissions.

\(^2\) “Dunkelflaute” is a German word that describes when it is both dark and calm, a time during which neither solar nor wind resources can produce a sufficient amount of power.
o Plan to utilize GridSavvy, targeted customer programs (e.g., residential evening-hour efficiency), and energy storage to shape the real-time demand profile to better match the available supply; then

o Purchase natural gas energy (often as an open position or “unspecified source”) to meet the remaining need; while

o Utilizing natural gas Resource Adequacy sources to ensure system reliability for those portions not already met by renewable Power Purchase Agreements (PPAs).

3. Programs. SCP specifically operates its customer programs to deliver the greatest reduction in total regional greenhouse gas emissions across all sectors and does not view its electric portfolio emissions factor itself as the primary goal, but rather as a means to achieving a societal reduction in emissions. This means:

o Transportation Fuel Shift. Electrification of transportation is SCP’s number one environmental objective as this is where the bulk of Sonoma and Mendocino county greenhouse gas emissions originate. SCP currently operates a bulk discount electric vehicle program, offers customers free charging stations for their homes, and partners with local non-profits to deploy electric vehicles in our community.

o Building Fuel Shift. Reducing and eliminating natural gas from buildings is SCP’s number two environmental objective. SCP is actively rolling out programs in heat pumps, induction cooking, and building decarbonization education.

o Time of Efficiency. Efficiency during evening hours – when grid prices and grid GHG intensities are both high – is extremely important, while efficiency during mid-day hours, when the grid is cheap and very low-GHG, is relatively unimportant. Through programs like GridSavvy, Sonoma Clean Power can begin to pair fuel-shifting and energy efficiency programs with aggregated customer load shaping strategies.

4. Engagement. SCP regularly meets with our regional transportation, water, land use, and planning agencies to coordinate and jointly prioritize climate action. We now have joint mapping, policies and legislative action, and coordinate electric vehicle charging station deployment, for example.

Fundamentally, SCP views its obligation as utilizing affordable and reliable clean sources of electricity to replace other sources of energy.

C. SCP’s Role in Creating Needed Energy Market Changes

It is worth celebrating that solar and wind power are now frequently the lowest cost new energy resource. This is good news, but producing renewable energy is now the easy part. Ensuring reliability with a growing fraction of variable (solar) and intermittent (wind) sources is harder.
Our IRP thus begins with certain principles, summarized here:

**Measure Actual Climate Impacts, Not Proximate Ones**

California climate policy should move away from simply promoting the construction of new renewable sources (e.g., percent RPS or megawatts of new RPS sources) and toward metrics that will support a reliable near-zero carbon grid (e.g., total tons of CO2 emitted per geographic territory, from all sources, with credit to electric providers for contributing to reductions regardless of the sector).

SCP’s Role: SCP no longer considers the addition of new renewable sources equivalent to a reduction in emissions, for example, and instead focuses on total tons of emissions in its service territory. The reason is that the addition of new sources can expand total energy use, and may not reduce absolute emissions at all, or at least not in proportion to the new construction. Construction-oriented policies also tend to overlook less expensive options, such as conservation, controls and efficiency.

**Improve Market Stability for Natural Gas Turbines While Planning Ahead to Reduce Reliance on Them**

There is an urgent need to shore up the market for natural gas units to sell reliability through and beyond the closure of the Diablo Canyon nuclear power plant. A multi-year compliance obligation to purchase Resource Adequacy will stabilize the market and help avoid the risk of early plant closures. Moving toward California’s climate goal requires both a clear plan to reduce reliance on natural gas units for shaping and reliability over the next twenty years, and multi-year RA obligations to ensure that gas units needed for reliability can remain operational.

SCP’s Role: Advocate for multi-year RA obligations, implement GridSavvy, and continue to improve the match between real-time supply and demand.

**Make a Plan for Dunkelflaute**

Ensuring reliability when it is both dark and without wind (Germans call this “Dunkelflaute”) will likely require all of the following: (a) increased energy storage at scale and duration, (b) retention of significant gas plant resources for reliability for the next thirty years, (c) improved segmentation of circuits and back-up power to ensure reliability to critical services, while (d) we reconsider our current reliability standards for non-critical loads. Today’s IOUs plan for a specific up-time. But that standard was set when nearly all resources were dispatchable. As California press forward with plans to decarbonize, ratepayers should be informed about the cost of that reliability standard and provided with alternative standards which may greatly lower costs.

SCP’s Role: convene conversations about affordable reliability that other market actors cannot or should not (e.g., the CAISO should not be expected to initiate a conversation about changing California’s reliability standards).

**Open Access to Data for Innovation**

California needs detailed open public data on distribution grid infrastructure and competitive markets for providing distribution grid reliability. Such data can be provided in a manner that continues to protect customer privacy. As more of our energy comes from renewable sources, our options for dispatching supply sources will continue to diminish and our need to manage load and distributed energy resources
will increase. These pressures demand more creativity from customers, technology companies and community choice aggregators, and that requires open access to real-time circuit information and improved use of smart meter data.

SCP’s Role: Identify specific data needed and advocate for those data to be provided in GIS, APIs and other usable formats. Advocate for actual load profiles to be used for settlements for residential and small business customers, so that customers can be fully compensated for their participation in demand response.

**Improve Affordability with Better Distribution Reliability Markets**

The CPUC, CAISO and other stakeholders need to define better markets for reliability services from customer-owned and third-party-owned resources. Today, only very limited markets exist for customers, CCAs and third parties to provide reliability services (e.g., the DRAM), stifling creativity and meaning that near-zero-cost solutions (e.g., behavioral changes driven by smart phone apps) are undervalued. Nearly all reliability investments today are still focused on utility-owned equipment. However, affordability can be significantly improved when customers can utilize readily-available technology, such as smart inverters, smart EV chargers and even phone apps to provide large-scale reliability. Concerns about the dependability of customer-provided reliability can be addressed through large-scale programs with broad statistical diversity and a credit-worthy aggregator.

SCP’s Role: Provide more details to the California Public Utilities Commission (CPUC), California Independent System Operator (CAISO) and the California Energy Commission (CEC) on GridSavvy and SCP’s attempts to fully value customer-owned, CCA-owned and third-party-owned reliability resources. Advocate for improved reliability markets and improved procedures to ensure adequate notice of reliability needs and ability to propose lower cost non-wires alternatives.

**Create a Plan to Avoid Building New Natural Gas Plants**

Even if there is no buyer for the energy, gas turbines used for electric reliability must still run at their minimum settings (typically between 20% and 30%) and therefore would create sufficient emissions to make reaching California’s 2050 climate goals challenging if nearly all reliability is still provided by natural gas turbines in 32 years. SCP expects that a significant fraction of reliability services will still be met by natural gas turbines in 2050, but seeks a statewide dialog now to ensure that California’s climate goals can still be met.

SCP’s Role: Participate in long-term reliability planning, advocate for an extremely high bar to approve any new construction of natural gas power facilities and better noticing and market signals for alternatives to be developed whenever possible.

**D. Preparing for an Upside-Down Grid**

As part of SCP’s efforts to achieve California’s climate goal, we have identified a number of problems that we seek broad industry collaboration to solve.

One set of problems comes from the fact that the transition to an extremely low-carbon society is flipping the grid “upside-down.” Historically, California’s grid has used dispatchable resources to meet forecast demand. A low-carbon grid will rely much more on forecast supply (e.g., solar and wind) and
therefore will require much greater amounts of dispatchable load. Existing demand response programs are insufficient because they are too low value, too slow to react, and too complex for most businesses and residential customers to implement.

Most conversations about solutions to this problem are too narrow in scope, focusing on one solution, such as batteries. But SCP’s analysis finds it is more likely that affordable solutions to this problem will involve a number of elements, including:

1. Very close collaboration with customers, who will be increasingly paid to provide reliability services.
2. Improved access to smart meter and distribution grid data, and improved markets for distribution grid reliability to allow innovation.
3. Increased use of stationary batteries at high-value locations informed by real-time distribution grid data.
4. Broad use of automated demand response, including both up- and down-regulation of loads and distributed energy resources.
5. Increased curtailment of renewables, but with improved clarity from CAISO on curtailment risks associated with new projects.
6. Changes to the CAISO market to facilitate easier exporting and importing of power, reducing the risks associated with solar and wind curtailment, and increasing access to cheaper clean generation during times of high net demand (e.g., during CAISO evening ramps).
7. Changes to building codes to ensure heating and water heating with heat pumps having dispatch capability.
8. Time-of-Use rates to encourage mid-day EV charging and other rate restructuring to better reflect wholesale costs.

No doubt this is a partial list, and there are additional actions that will be needed for addressing the “upside-down grid.” SCP therefore seeks to create a forum for analyzing and discussing the appropriate balance of approaches to ensure affordability and reliability in a decarbonized future. What other strategies should California be planning now to facilitate the transition to a near-zero-carbon grid?

SCP seeks partners to regularly discuss this topic, update our processes and regulations and collaborate.
3. Portfolio Regulatory Requirements

A. Regulatory Deliverables

As a California load serving entity, SCP must comply with numerous regulations, many of which deal with ensuring grid reliability and limiting greenhouse gas emissions. The tables below list SCP’s regulatory deliverables (required and voluntary) as well as the frequency and regulatory jurisdiction for each deliverable. Each table represents a specific regulatory topic, and key topics are explained in greater detail in subsequent sections of this chapter.

**Resource Adequacy (RA)**

<table>
<thead>
<tr>
<th>Frequency/Timing</th>
<th>Regulatory Deliverable</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual: January</td>
<td>Flexible Capacity Needs Assessment</td>
<td>CAISO</td>
</tr>
<tr>
<td>Annual: February</td>
<td>Historical Capacity Price Data Request</td>
<td>CPUC</td>
</tr>
<tr>
<td>Annual: March</td>
<td>Historical Load Used for Year-Ahead RA Process</td>
<td>CPUC/CEC</td>
</tr>
<tr>
<td>Annual: April</td>
<td>Going Forward Capacity Volumes Data Request</td>
<td>CPUC</td>
</tr>
<tr>
<td>Annual: April</td>
<td>Year-Ahead Load Forecast Used for Year-Ahead RA Process</td>
<td>CPUC/CEC</td>
</tr>
<tr>
<td>Annual: June</td>
<td>Import Capability &amp; Path 26 Allocation Processes Begin</td>
<td>CAISO</td>
</tr>
<tr>
<td>Annual: August</td>
<td>Revised Year-Ahead Load Forecast Used for Year-Ahead RA Process</td>
<td>CPUC/CEC</td>
</tr>
<tr>
<td>Annual: September</td>
<td>Review Draft Posted Net Qualifying Capacities (NQCs) and Effective Flexible Capacities (EFCs)</td>
<td>CAISO</td>
</tr>
<tr>
<td>Annual: October</td>
<td>Year-Ahead RA Demonstration</td>
<td>CAISO</td>
</tr>
<tr>
<td>Annual: October</td>
<td>Year-Ahead RA Demonstration</td>
<td>CPUC/CEC</td>
</tr>
<tr>
<td>Monthly</td>
<td>2.5 Months Ahead Load Migration Forecast</td>
<td>CEC/CPUC</td>
</tr>
<tr>
<td>Monthly</td>
<td>45 Days Ahead RA Demonstration</td>
<td>CPUC/CEC</td>
</tr>
<tr>
<td>Monthly</td>
<td>45 Days Ahead RA Demonstration (cure period ends T-30 Days)</td>
<td>CAISO</td>
</tr>
</tbody>
</table>

**Renewables Portfolio Standard (RPS)**

<table>
<thead>
<tr>
<th>Frequency/Timing</th>
<th>Regulatory Deliverable</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual: Q2</td>
<td>Retire RECs and Prepare WREGIS Reports for Suppliers</td>
<td>N/A</td>
</tr>
<tr>
<td>Annual: July</td>
<td>WREGIS: Compliance Report, e-Tag Report, Attestation</td>
<td>CPUC/CEC</td>
</tr>
<tr>
<td>Annual: July</td>
<td>RPS Procurement Plan</td>
<td>CPUC</td>
</tr>
<tr>
<td>Annual: July</td>
<td>RPS Data Request related to Workforce Development &amp; Diversity</td>
<td>CPUC</td>
</tr>
<tr>
<td>Annual: August</td>
<td>RPS Compliance Report</td>
<td>CPUC</td>
</tr>
</tbody>
</table>

**Energy Storage Procurement**

<table>
<thead>
<tr>
<th>Frequency/Timing</th>
<th>Regulatory Deliverable</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biennial: January</td>
<td>Energy Storage Procurement Tier 2 Advice Letter</td>
<td>CPUC</td>
</tr>
</tbody>
</table>
**Greenhouse Gas (GHG) Reporting**

<table>
<thead>
<tr>
<th>Frequency/Timing</th>
<th>Regulatory Deliverable</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual: February</td>
<td>Emission Performance Standard Advice Letter</td>
<td>CPUC</td>
</tr>
<tr>
<td>Annual: June</td>
<td>Retail Load Reporting for MRR</td>
<td>CARB</td>
</tr>
<tr>
<td>Annual: December</td>
<td>GHG Reports due to The Climate Registry</td>
<td>Voluntary</td>
</tr>
<tr>
<td>Annual: December</td>
<td>GHG Report Published by The Climate Registry</td>
<td>Voluntary</td>
</tr>
</tbody>
</table>

**Power Source Disclosure (PSD)**

<table>
<thead>
<tr>
<th>Frequency/Timing</th>
<th>Regulatory Deliverable</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual: April</td>
<td>Third party verification of retail sales by product</td>
<td>N/A</td>
</tr>
<tr>
<td>Annual: June</td>
<td>PSD Report submitted to CEC</td>
<td>CEC</td>
</tr>
<tr>
<td>Annual: June</td>
<td>SCP-PG&amp;E rate comparison mailed to customers</td>
<td>CPUC</td>
</tr>
<tr>
<td>Annual: August</td>
<td>Power Content Label mailed to Customers and CEC</td>
<td>CEC</td>
</tr>
<tr>
<td>Annual: October</td>
<td>Independent audit of PSD Report, Power Content Label</td>
<td>CEC</td>
</tr>
</tbody>
</table>

**Integrated Resource Planning (IRP)**

<table>
<thead>
<tr>
<th>Frequency/Timing</th>
<th>Regulatory Deliverable</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biennial: June*</td>
<td>CPUC Templates Submitted to CPUC for Verification</td>
<td>CPUC</td>
</tr>
<tr>
<td>Biennial: TBD</td>
<td>SCP’s IRP (including CPUC templates) posted to SCP website</td>
<td>Voluntary</td>
</tr>
</tbody>
</table>

*The CPUC extended the 2018 IRP deadline to August 1, 2018*

**Energy Information Administration (EIA) Reporting and Quarterly Fuel and Energy Report (QFER)**

<table>
<thead>
<tr>
<th>Frequency/Timing</th>
<th>Regulatory Deliverable</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual: April</td>
<td>Annual 861 Filing</td>
<td>EIA</td>
</tr>
<tr>
<td>Quarterly</td>
<td>Quarter Behind QFER (1306B Filing)</td>
<td>CEC</td>
</tr>
<tr>
<td>Monthly</td>
<td>Month Behind 861 Filing</td>
<td>EIA</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Frequency/Timing</th>
<th>Regulatory Deliverable</th>
<th>Jurisdiction</th>
</tr>
</thead>
</table>

**Wind Power Procurement**

<table>
<thead>
<tr>
<th>Frequency/Timing</th>
<th>Regulatory Deliverable</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarterly</td>
<td>Quarter Behind CA Wind Power Procurement (1386 Filing)</td>
<td>CEC</td>
</tr>
</tbody>
</table>
**Congestion Revenue Rights (CRRs)**

<table>
<thead>
<tr>
<th>Frequency/Timing</th>
<th>Regulatory Deliverable</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual: August</td>
<td>Annual CRR Allocation Process Begins</td>
<td>CAISO</td>
</tr>
<tr>
<td>Monthly</td>
<td>1.5 Month Ahead Load Forecast for CRR Allocations</td>
<td>CAISO</td>
</tr>
</tbody>
</table>

**PG&E Energy Resource Recovery Account (ERRA)**

<table>
<thead>
<tr>
<th>Frequency/Timing</th>
<th>Regulatory Deliverable</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual: February</td>
<td>Year-Ahead Load Forecast Used for PG&amp;E ERRA</td>
<td>CPUC</td>
</tr>
<tr>
<td>Annual: September</td>
<td>Revised Year-Ahead Load Forecast Used for PG&amp;E ERRA</td>
<td>CPUC</td>
</tr>
</tbody>
</table>

**Advanced Metering Initiative (AMI) Data**

<table>
<thead>
<tr>
<th>Frequency/Timing</th>
<th>Regulatory Deliverable</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triennial</td>
<td>AMI Data Privacy Audit</td>
<td>CPUC</td>
</tr>
<tr>
<td>Annual: April</td>
<td>AMI Data Privacy Annual Report</td>
<td>CPUC</td>
</tr>
</tbody>
</table>

**Officer Certification**

<table>
<thead>
<tr>
<th>Frequency/Timing</th>
<th>Regulatory Deliverable</th>
<th>Jurisdiction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual: April</td>
<td>Annual Officer Certification Form</td>
<td>CAISO</td>
</tr>
</tbody>
</table>

**B. Resource Adequacy**

In the aftermath of California’s electricity crisis (2000-2001), the California Public Utilities Commission (CPUC) introduced a new requirement in 2004 to better ensure grid reliability. More specifically, the CPUC required load-serving entities to secure adequate capacity well in advance of the real-time need and make such capacity available to the California Independent System Operator (CAISO), which is the balancing authority (i.e., grid operator) for the majority of California. This requirement, called “Resource Adequacy,” has evolved over the years since 2004, and today’s program (jointly administered by the CPUC, CAISO and California Energy Commission) is comprised of three products: (1) System RA, (2) Flexible RA, and (3) Local RA.

**System RA**

In order to meet its CPUC-jurisdictional System RA requirements, SCP must demonstrate that it has secured capacity equal to 115% of its expected peak load for each month of the year. However, instead of making such a demonstration all at once, SCP is instead required to make a year-ahead filing as well as twelve individual month-ahead filings. For the year-ahead filing (October 31st of the preceding year), SCP must demonstrate 90% of the 115% requirement for the coming year’s five summer months: May through September. For the 12 monthly filings (each submitted 45 days in advance of the month), SCP must demonstrate 100% of the 115% requirement. For reference, the 115% requirement is often referred to as the expected peak load plus a 15% “planning reserve margin.” Also, to be more precise, the CPUC makes several adjustments to SCP’s expected monthly peak loads; one of these adjustments is to account for the fact that SCP’s peaks do not perfectly coincide with CAISO’s peaks.
When demonstrating System capacity, SCP must count only the “Net Qualifying Capacity” of each resource it includes in its filings. At a high level, the Net Qualifying Capacity (NQC) of a resource, published by the CAISO, is the capacity (one number for each month of the year) that can be relied upon to meet that month’s peak load system conditions. For wind and solar resources, the NQC calculations must take into account the intermittent and seasonal nature of such resources and are based on an Effective Load Carrying Capacity (ELCC) methodology. For example, solar resources receive no capacity value in December and January.

When demonstrating System capacity, SCP must also consider three other factors. First, due to limited capacity on Path 26 (a cluster of critical transmission lines that allow power to flow between northern and southern California), SCP must secure the bulk of its system resources from north of Path 26 (thereby reducing the need to use the path). In order to comply with CPUC rules, SCP is only allowed to procure a certain amount of capacity from south of Path 26, with the specific number being provided each year by the CAISO through the CPUC. Second, due to limited capacity on the interties that connect the CAISO grid with other western grids, SCP must secure the bulk of its system resources from within the CAISO grid. Again, SCP is only allowed to procure a certain amount of capacity from outside of the CAISO grid, with the specific number being provided each year by the CAISO and CPUC. Third, each year SCP is allocated a certain amount of capacity that was procured by the CAISO for reliability purposes or by PG&E due to policy mandates. These allocations are known as Reliability Must Run (RMR) and Cost Allocation Mechanism (CAM) allocations, and SCP is given this capacity because its customers are charged for it. The CPUC notifies SCP of its RMR and CAM allocations on a quarterly basis (approximately two months in advance of each quarter).

**Flexible RA**

In order to meet its Flexible RA requirements, SCP must demonstrate that it has secured Flexible capacity equal to its assigned share of the CAISO’s flexibility need (based in part on the largest expected three-hour ramp of system load) for each month of the year. However, instead of making such a demonstration all at once, SCP is instead required to make a year-ahead filing as well as twelve monthly filings. For the year-ahead filing (October 31st of the preceding year), SCP must demonstrate 90% of its assigned flexible capacity requirement for each month of the coming year. For the twelve individual monthly filings (each submitted 45 days in advance of the month), SCP must demonstrate 100% of its assigned flexible capacity requirement.

When demonstrating Flexible capacity, SCP must count only the “Effective Flexible Capacity” of each resource it includes in its filings. At a high level, the Effective Flexible Capacity (EFC) of a resource, published each year by the CAISO, is the capacity (one number for each month of the year) that can be relied upon to help meet that month’s system ramping needs. For this reason, only resources that can ramp and sustain energy output for at least three hours are eligible to receive an EFC value.

When procuring Flexible capacity, SCP must choose among three categories: (1) Base Flexibility; (2) Peak Flexibility; (3) Super-Peak Flexibility. Each category of capacity must be economically bid into the California ISO’s markets (i.e., each category is subject to “must-offer obligations”), but the exact requirements differ by category. In addition, load serving entities must procure flexible capacity in accordance with the following rules: (A) For the summer months (May through September), SCP must procure at least 55% of its Flexible Capacity portfolio with Category 1 (Base Flexibility) capacity; (B) For the non-summer months, SCP must procure at least 38% of its Flexible Capacity portfolio with Category 1 capacity; (C) SCP may only procure up to 5% of its Flexible Capacity portfolio with Category 3 (Super-Peak Flexibility). Since the inception of Flexible Capacity, SCP has procured only Category 1.
Local RA

In order to meet its Local RA requirements, SCP must demonstrate that it has secured capacity in specific transmission-constrained (i.e., “Local”) areas equal to its assigned share of the CAISO’s need for each month of the year. For the year-ahead filing (October 31\textsuperscript{st} of the preceding year), SCP must demonstrate 100% of its assigned local capacity requirements for each month of the coming year. To be clear, the assigned requirement for each local area is one number for the entire year, but SCP must show that it has secured enough capacity in each month to meet this number. Also, the CAISO has established a list of seven local areas in PG&E’s transmission area: (1) Humboldt; (2) North Coast/North Bay; (3) Sierra; (4) Stockton; (5) Greater Bay; (6) Greater Fresno; (7) Kern. However, the CPUC has established a less granular list of only two local areas in PG&E’s transmission area: (1) Bay Area; (2) Other PG&E Areas. As a result, SCP has two separate local RA compliance obligations: a CPUC-defined obligation and a CAISO-defined obligation.

When demonstrating capacity to meet CPUC Local RA requirements, SCP must use the August Net Qualifying Capacity (NQC) of each resource. This means that if SCP has a solar resource in a local area, and that resource has a March NQC of 5 MW and an August NQC of 20 MW, then for purposes of Local RA compliance, SCP can and must list 20 MW across the year for that specific resource (even though this would seem to overstate the capacity in March by a factor of 4).

SCP’s System, Flexible and Local RA requirements are all based in part on SCP’s load data. The first step in SCP’s RA compliance cycle is to submit historical load data to the CPUC and CEC in March of the preceding year. The following month (in April of the preceding year), SCP is required to submit an initial year-ahead load forecast. Based in part on this data, the CPUC then provides SCP with draft year-ahead RA obligations; these are provided in late July or early August of the preceding year. The following month (in August of the preceding year), SCP is required to submit a revised year-ahead load forecast. Accordingly, the CPUC then provides SCP with revised year-ahead RA obligations; these are provided in September of the preceding year. Based on these obligations and as discussed in the section above, SCP then must make its year-ahead filing on October 31\textsuperscript{st} of the preceding year.

Once the year-ahead process is completed on October 31\textsuperscript{st} of the preceding year, the month-ahead process begins. As explained in the section above, SCP is required to make RA submissions 45 days in advance of each month. In addition to making such RA submissions, SCP is also required to submit load forecasts 2.5 months in advance of each month. In fact, it is these load forecasts that are used to modify SCP’s 45 day-ahead System requirements, in order to capture load migration. For example, in mid-January SCP is not only required to submit its March RA plan, but it is also required to submit an April load forecast. It is this April load forecast that is used the following month (in mid-February) to determine SCP’s remaining April System RA need.
C. Renewable Portfolio Standard

Established in 2002 under Senate Bill 1078, accelerated in 2006 under Senate Bill 107, expanded in 2011 under Senate Bill 2, expanded again in 2015 under Senate Bill 350, and expanded once more in 2018 under Senate Bill 100, California's Renewables Portfolio Standard (RPS) requires California load serving entities to supply their retail sales with minimum portions of eligible renewable energy. As shown in the table below, the RPS requirements have increased over the years, and such requirements (expressed as percentages of retail sales) are enforced within compliance periods. For each compliance period, load-serving entities (LSE) like SCP and PG&E, are required to meet the weighted average of the RPS requirements for that period, with retail sales providing the weights. For example, in compliance period #3, LSEs are required to supply their retail sales with at least the following portion of renewable energy: \[
\frac{[(2017 \text{ sales } \times 27\%) + (2018 \text{ sales } \times 29\%) + (2019 \text{ sales } \times 31\%) + (2020 \text{ sales } \times 33\%)]}{2017 \text{ through } 2020 \text{ sales}}.
\]

<table>
<thead>
<tr>
<th>Year</th>
<th>Compliance Period</th>
<th>RPS Requirement (% of Retail Sales)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>1</td>
<td>20.0</td>
</tr>
<tr>
<td>2012</td>
<td>1</td>
<td>20.0</td>
</tr>
<tr>
<td>2013</td>
<td>1</td>
<td>20.0</td>
</tr>
<tr>
<td>2014</td>
<td>2</td>
<td>21.7</td>
</tr>
<tr>
<td>2015</td>
<td>2</td>
<td>23.3</td>
</tr>
<tr>
<td>2016</td>
<td>2</td>
<td>25.0</td>
</tr>
<tr>
<td>2017</td>
<td>3</td>
<td>27.0</td>
</tr>
<tr>
<td>2018</td>
<td>3</td>
<td>29.0</td>
</tr>
<tr>
<td>2019</td>
<td>3</td>
<td>31.0</td>
</tr>
<tr>
<td>2020</td>
<td>3</td>
<td>33.0</td>
</tr>
<tr>
<td>2021</td>
<td>4</td>
<td>35.8</td>
</tr>
<tr>
<td>2022</td>
<td>4</td>
<td>38.5</td>
</tr>
<tr>
<td>2023</td>
<td>4</td>
<td>41.3</td>
</tr>
<tr>
<td>2024</td>
<td>4</td>
<td>44.0</td>
</tr>
<tr>
<td>2025</td>
<td>5</td>
<td>46.7</td>
</tr>
<tr>
<td>2026</td>
<td>5</td>
<td>49.3</td>
</tr>
<tr>
<td>2027</td>
<td>5</td>
<td>52.0</td>
</tr>
<tr>
<td>2028</td>
<td>6</td>
<td>54.7</td>
</tr>
<tr>
<td>2029</td>
<td>6</td>
<td>57.3</td>
</tr>
<tr>
<td>2030</td>
<td>6</td>
<td>60.0</td>
</tr>
</tbody>
</table>

In order to supply their retail sales with minimum portions of renewable energy, load serving entities must acquire and retire renewable energy credits (RECs). Each REC represents the environmental/renewable attributes associated with 1 MWh of eligible renewable energy and is created at the moment the electricity is generated; accordingly, each REC is assigned a vintage year and month. RECs are created in a database known as the “Western Renewable Energy Generation Information System (WREGIS), which is used across the Western Interconnection to track the environmental/renewable attributes of wholesale electricity.

When acquiring and retiring RECs to meet its RPS requirements, SCP must also comply with additional requirements related to three Portfolio Content Categories (PCCs), defined as follows:
- **PCC 1**: Bundled RECs from facilities with a first point of interconnection within a California Balancing Authority (CBA), or RECs from facilities that schedule electricity into a CBA, and without substitute energy. In other words, these are RECs that are bundled with electricity – all coming from the renewable energy facility. If that facility is outside a CBA, the electricity must be scheduled into the CBA, and only the fraction of the schedule actually generated by the renewable facility may count (i.e., any Ancillary Services needed to support the schedule are not counted).

- **PCC 2**: Bundled RECs – using substitute energy delivered within the same calendar year – from facilities that are outside of a California Balancing Authority (CBA). In other words, these are RECs that are bundled with electricity, but the electricity scheduled into the CBA does not have to come from the renewable energy facility in real time. Instead, the electricity is provided by a substitute facility, as long as the electricity is scheduled into the CBA within the same calendar year.

- **PCC 3**: Unbundled RECs originally associated with generation from an RPS-facility (but where no energy is actually procured) or unbundled RECs that do not qualify for PCC 1 or PCC 2. SCP’s Board chose to never use PCC3 resources to reduce greenhouse gas emissions, and has avoided purchasing PCC3 altogether since the end of 2014.

In accordance with its RPS requirements, SCP must acquire and retire RECs in line with the following PCC-related restrictions:

<table>
<thead>
<tr>
<th>Year</th>
<th>Compliance Period</th>
<th>RPS Requirement (% of Retail Sales)</th>
<th>PCC 1 Minimum (% of RPS)</th>
<th>PCC 3 Maximum (% of RPS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>1</td>
<td>20.0</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td>2012</td>
<td>1</td>
<td>20.0</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td>2013</td>
<td>1</td>
<td>20.0</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td>2014</td>
<td>2</td>
<td>21.7</td>
<td>65</td>
<td>15</td>
</tr>
<tr>
<td>2015</td>
<td>2</td>
<td>23.3</td>
<td>65</td>
<td>15</td>
</tr>
<tr>
<td>2016</td>
<td>2</td>
<td>25.0</td>
<td>65</td>
<td>15</td>
</tr>
<tr>
<td>2017</td>
<td>3</td>
<td>27.0</td>
<td>75</td>
<td>10</td>
</tr>
<tr>
<td>2018</td>
<td>3</td>
<td>29.0</td>
<td>75</td>
<td>10</td>
</tr>
<tr>
<td>2019</td>
<td>3</td>
<td>31.0</td>
<td>75</td>
<td>10</td>
</tr>
<tr>
<td>2020</td>
<td>3</td>
<td>33.0</td>
<td>75</td>
<td>10</td>
</tr>
</tbody>
</table>

*Long-Term Contracting Obligation*

Starting with Compliance Period 4 (which begins 1/1/2021), at least 65% of the RECs retired for the purpose of meeting the Procurement Quantity Requirement (PQR) must come from contracts that are 10 or more years in duration.

**D. Energy Storage**

In December 2013, the CPUC issued Decision 13-10-040 and adopted the Energy Storage Procurement Framework and Design Program for Investor Owned Utilities (“IOUs”), Electric Service Providers (“ESPs”),
and CCA programs. In this decision, the CPUC established a goal for CCAs to procure energy storage equal to 1% of their 2020 annual peak load. To count toward the 2020 goal, energy storage projects must meet the following eligibility requirements:

- Energy storage systems must be installed and operational after January 1, 2010
- Energy storage systems must be online and delivering by the end of 2024
- Distributed storage (i.e., customer-sited or customer-owned storage) qualifies
- Electric vehicle programs qualify
- Energy storage projects must further a relevant purpose (i.e., demonstrate their ability to provide grid optimization, integration of renewable energy, or reduction of GHG emissions)
- Government funded projects may be included
- Energy storage procurement must be cost-effective

E. Greenhouse Gas Reporting

California law requires the state to reduce its greenhouse gas (GHG) emissions to 1990 levels by 2020, and to 40% below 1990 levels by 2030. The first goal was recently reached, with 1990 levels of GHG emissions reached in mid-2018. To help achieve the reductions needed by 2030, the California Air Resources Board (CARB) – which is a department within the state’s Environmental Protection Agency – enforces an emissions Cap & Trade program. This program, which covers electricity generators, electricity importers, industrial facility operators and fuel distributors, requires covered entities to obtain emissions allowances, the total supply of which is ramped down over time. As part of the Cap & Trade program, CARB also requires covered entities to report their emissions on an annual basis. One important note: CARB allows covered entities to exclude (for compliance purposes) the emissions associated with Category 2 RPS (i.e., the emissions associated with electricity used to firm and shape renewables from non-California balancing authorities). This compliance exception is known as the “RPS Adjustment.”

SCP has contracts with electricity generators and electricity importers, but SCP is not itself a generator or importer. As a result, SCP is not a covered entity under California’s Cap & Trade program. However, SCP is an “Electric Power Entity” as defined in the California Code of Regulations (CCR) and is therefore required to report its retail sales to CARB on an annual basis (17 CCR 95111). In addition, SCP voluntarily has its GHG emissions audited and reported by The Climate Registry (TCR), a non-profit organization that the investor-owned utilities have used for many years as their means to measure and communicate the impacts of their GHGs from retail sales. Through its Electric Power Sector Protocol, TCR audits SCP’s emission factors, allowing SCP to have published utility-specific GHG emission factors that its customers can use to quantify their own emissions.\(^3\) The use of TCR was long the only option for reporting emissions from retail sales because CARB’s Mandatory Reporting Requirements were expressly developed for producers and importers and could not be used to measure impacts associated with purchased energy to serve retail customer load.

\(^3\) Available online at: [https://www.theclimateregistry.org/our-members/cris-public-reports/](https://www.theclimateregistry.org/our-members/cris-public-reports/)
The practice of relying on The Climate Registry for GHG reporting for retail sales will eventually be replaced by the CEC’s rules under AB 1110 (see “Power Source Disclosure” section directly below), however that methodology is not yet finalized.

F. Power Source Disclosure

California law requires load-serving entities (LSEs) to disclose the types of power resources used to serve customers. This mandate, known as the Power Source Disclosure (PSD) program, is a consumer information program enforced by the California Energy Commission (CEC) on an annual basis. More specifically, LSEs are required to submit detailed reports to the CEC and mail simplified one-pagers to customers each summer. With respect to the one-pager, the CEC requires that LSEs use the exact same template, called the “Power Content Label,” which allows customers to easily compare a specific LSE’s resource mix to the California average. SCP’s final 2017 Power Content Label is below and was mailed to customers in August 2018.

![Power Content Label](image-url)
California Assembly Bill 1110, which was passed in 2016, directs the CEC to modify the Power Source Disclosure program as follows: the CEC must require LSEs to disclose (in addition to the power sources that they already disclose) the GHG emissions intensities associated with the portfolios they offer to their customers, beginning in 2020 for the 2019 reporting year. In order to implement this new law, the CEC began engaging stakeholders in 2017 and has shared pre-rulemaking staff proposals for modifying the Power Source Disclosure program. A final rulemaking is expected in late 2018 or early 2019.
4. Customer Load

A. Historical Number of Enrolled Customers

As previously stated, SCP is the default electricity provider for Sonoma and Mendocino counties, while customers have the right to opt-out and remain with PG&E. The current participation rate for SCP is 87%, meaning that 13% of eligible customers have opted out.

SCP began serving customers in May 2014 and has served Sonoma and Mendocino counties in the following phases:

- Phase 1- May 1, 2014 began serving commercial and industrial customers and a random selection of 5,000 residential customers in Unincorporated Sonoma County, Cotati, Santa Rosa, Sebastopol, Sonoma, and Windsor
- Phase 2- Dec 1, 2014 added the remaining residential customers in the jurisdictions listed above
- Phase 3- Jun 1, 2015 added all customers in Cloverdale, Petaluma, and Rohnert Park
- Phase 4- Jun 1, 2017 added all customers in Unincorporated Mendocino County, Fort Bragg, Point Arena, and Willits

The figure below shows the number of customer accounts through each phase. Note that in October 2017, the Wine Country fires destroyed thousands of structures which resulted in a loss of approximately 4,800 accounts (noting that the actual closing of these accounts occurred over several months). The number of customer accounts as of Dec 31, 2017 was 221,309 which was comprised of almost 86% residential accounts.
The number of EverGreen accounts (SCP’s 100% local renewable option) has steadily increased through each of the phases as shown in the following figure. The number of EverGreen customers as of Dec 31, 2017 was 1,587 (0.72% of SCP’s total customers).

![EverGreen Number of Customer Accounts](image)

**B. Historical Load (MWh)**

The table below shows the historical annual load (MWh) for 2015-2017. Year 2014 is not included because it does not represent a full year and the phasing in of customers was not representative of SCP’s typical customer base.

Load is given in Loss Adjusted Load (LAL) MWh and retail sales MWh. LAL is the amount of energy that is procured on behalf of SCP’s customers at the sources of generation, retail sales is the amount of energy measured and invoiced at the customer meter as follows:

\[
\text{LAL MWh} = \text{line losses MWh} - \text{unaccounted for energy MWh} = \text{retail sales MWh}.
\]

| CleanStart | 1,980,353 | 2,178,195 | 2,366,381 |
| EverGreen  | 6,648     | 8,531     | 13,493    |
| 2015        | 2,126,623 | 2,336,362 | 2,541,056 |
| 2016        | 1,987,001 | 2,186,726 | 2,379,874 |
| 2017        |           |           |           |
The graphs below present the historical MWh LAL across each month from 2015-2017. The first graph is total MWh and the second graph is kWh/meter (Note 1,000 kWh = 1 MWh). Energy load on a kWh/meter basis is significant for forecasting purposes when the number of customers changes between periods. For example, the historical load in May 2017 does not include Mendocino customers, so this will not account for the Mendocino customers for forecasting May into the future. To accommodate this, the historical kWh/meter can be used and then applied to the increased number of accounts.

Both 2015 and 2017 historical MWh loads included phasing in new customers in June. In 2015, SCP enrolled Cloverdale, Petaluma and Rohnert Park, and in 2017 SCP enrolled in Mendocino County. Year 2016 is the only full calendar year that did not phase in new service territory. The load is relatively flat throughout the year with higher loads in January, December, and the summer months. The higher load in January and December is likely due to increased lighting and space heating needs and the higher load in summer months is likely due to increased air conditioning needs. Note that the load significantly decreased in October 2017 due to the wildfire power outages and destroyed accounts.
On an annual basis, SCP’s load is comprised of about 50% residential energy use. See the figure below for the load breakdown for 2017.

The following graph represents the average daily profile for the months of Mar, Jun, Sep, and Dec of 2017. These are representative of seasonal variations in load across the year. Note that since these are averages across every day of the month, they do not represent the peak hourly load in any given month. The graph shows load at the customer meter, so it already accounts for reductions in load due to behind-the-meter solar installations. This graph does not reflect any supply resources, which will be covered in subsequent sections of this report.

June and September follow similar average daily profiles with the most usage in the afternoon hours likely due to increased air conditioning needs. March is similar to June and September from 8 pm to 10 am. The middle of the day in March shows lower loads than June and September likely due to the milder temperatures decreasing the need for air conditioning. March and December usage spikes in the early evening likely due to residential lighting needs due to shorter days. The average hourly load for hours in December nighttime hours is higher than the other seasons likely due to holiday lights and space heating needs. Similarly, December usage is higher than March during the daytime hours likely due to increased space heating needs.
C. Historical Peak (MW)

SCP’s annual peak load for 2015-2017 is shown in the following table. SCP’s peak load has consistently occurred in September in the afternoon.

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak MW</td>
<td>489</td>
<td>454</td>
<td>580</td>
</tr>
<tr>
<td>Day of Peak</td>
<td>Thu, Sep 10</td>
<td>Mon, Sep 26</td>
<td>Fri, Sep 1</td>
</tr>
<tr>
<td>Hour of Peak</td>
<td>3 pm</td>
<td>3 pm</td>
<td>4 pm</td>
</tr>
</tbody>
</table>

The graphs below present the historical peak across each month from 2015-2017. The first graph is total peak MW and the second graph is the peak kW/meter (Note 1,000 kW = 1 MW). Peak kW/meter is significant for forecasting purposes because the number of customers and meters change over time. Peak kW/meter serves as a better forecast indicator than total historic peak KW.

It is interesting to note that while January and December have increased load (MWh) as shown previously, both months’ peak hourly MW is less than the peak hourly MW in the summer.
D. Forecast Customer Load

The historical data previously presented is essential to forecasting load (MWh) and peak (MW) into the future. Load forecasting is critical to support SCP’s procurement activities. The financial exposure to real-time markets when the forecasted load does not match the actual load, along with procurement requirements of supply resources to meet that load, drive the need to forecast future loads with as much certainty as possible.

Reliable load forecasting enables resource procurement that seeks to minimize imbalances and provide predictable costs that in turn support stable and competitive pricing. SCP load forecasting uncertainty is most affected by the following factors:

1. The number of customers taking service from SCP, including population changes in Sonoma and Mendocino Counties and customers switching their electric service between SCP and PG&E;
2. Under- or over-performance of SCP programs that impact load (such as NetGreen net energy metering, electric vehicle programs, energy efficiency and fuel switching);
3. Load changes from external factors such as economic business cycles or new emerging industries; and,
4. Weather patterns or events, which can unexpectedly impact customer electric consumption.

**Forecasting methodology**

SCP’s load forecast uses actual recorded historical data in order to forecast forward. For the purpose of this IRP, SCP has forecast through 2030 and has used the following process:

1. Forecast number of customer meters
   - Establish historical steady-state opt-out and participation rates (excluding the first couple months following a phase-in) for each customer type.
   - Use U.S. Census Bureau historical population and housing unit increases for Sonoma and Mendocino counties.
   - Develop fire rebuild estimates to forecast the number of returning customer meters.
2. Forecast kWh/meter profile:
   - Establish historical (2015-2017) kWh/meter profiles using actual recorded kWh and the quantity of meters for each customer type for each hour.
   - Choose a representative kWh/meter profile for each month based on historical kWh/meter averages, weather, extreme natural events, economic and behavioral shifts.
3. Calculate kWh profile
   - Multiply the total forecasted quantity of meters (#1 above) by the kWh/meter profile (#2 above) to arrive at a base kWh profile for each customer type.
   - Incorporate additional factors that impact load over the planning horizon.
Current efficiency and building electrification trends were forecast forward through 2030. These numbers will be refined in future planning processes as more data is available on SCP program uptake.

Behind-the-meter solar capacity forecast was determined using yearly capacity increase trends reported for Sonoma and Mendocino counties from California Distributed Generation Statistics http://www.californiadgstats.ca.gov/charts/.

Electric vehicle goals of SCP’s programs were used to forecast transportation electrification.

**Forecast Load (MWh)**

The following chart shows the 2030 forecasted load due to each factor described above. It illustrates that SCP’s load over the planning horizon is projected to decrease slightly. Moving from left to right, the 2019 “Base” year forecast load increases by 2.49% from population and rebuilding and by 6.03% from electric vehicles. This increase in forecast load is offset by a projected decrease in load of 2.78% from energy efficiency and 5.88% from Behind-the-Meter (BTM) solar. The total net decrease in load from the “Base” year to 2030 is 0.13%.

The table below shows the forecasted annual load (MWh) for 2020, 2025, and 2030.

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total MWH LAL</td>
<td>2,720,980</td>
<td>2,717,657</td>
<td>2,717,746</td>
</tr>
<tr>
<td>TOTAL MWh retail sales</td>
<td>2,547,735</td>
<td>2,544,621</td>
<td>2,544,706</td>
</tr>
<tr>
<td>CleanStart</td>
<td>2,522,258</td>
<td>2,506,452</td>
<td>2,493,812</td>
</tr>
<tr>
<td>EverGreen</td>
<td>25,477</td>
<td>38,169</td>
<td>50,894</td>
</tr>
</tbody>
</table>
The graph below presents the actual 2015-2017 monthly load (MWh LAL) compared to the forecast for 2030. The forecast load shows a shift toward more pronounced lower usage in the summer months compared to winter months due to the increased behind-the-meter solar in summer months and forecast electrification of space heating in winter months.

The following graph represents the forecast average daily profile for the months of Mar, Jun, Sep, and Dec for 2030. These are representative of seasonal variations in load across the year. Note that since these are averages across every day of the month, they do not represent the peak hourly load in any given month. As more efficiency and behind the meter solar installations occur, the average daily load in 2030 is expected to increase into the evening as electric vehicles are returning to residences to be charged. The load is expected to drop off again as people go to sleep and lights and appliances are turned off. The impacts of building electrification, behind the meter storage, and GridSavvy will be assessed each year and as data becomes available, SCP peak forecast may be adjusted.
Forecast Peak (MW)

SCP’s forecast annual peak MW load for 2020, 2025, and 2030 is shown in the following table. SCP’s peak load is forecast to continue to occur in September, however as continued efficiency and behind the meter solar installations occur, the afternoon peak is expected to shift more and more into the evening as electric vehicles are returning to residences to be charged. The impacts of building electrification, behind the meter storage, and GridSavvy will be assessed each year and as data becomes available, the peak forecast may be adjusted.

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak MW</td>
<td>571</td>
<td>561</td>
<td>558</td>
</tr>
<tr>
<td>Day of Peak</td>
<td>Fri, Sep 4</td>
<td>Fri, Sep 3</td>
<td>Thurs, Sep 12</td>
</tr>
<tr>
<td>Hour of Peak</td>
<td>4 pm</td>
<td>5 pm</td>
<td>7 pm</td>
</tr>
</tbody>
</table>

The graphs below present the actual 2015-2017 historical peak for each month compared to the forecasted peak for 2030.
5. Resource Plan

A. Strategy

SCP employs a number of wholesale procurement strategies to secure low-cost, and low cost-volatility power. For example, SCP procures a diverse mix of generation types through contracts that are primarily long-term. In addition, SCP has structured a hedging plan and uses congestion revenue rights to reduce its exposure to basis risk. SCP also maintains a low overhead cost structure with a small staff.

SCP also takes a strategic influential approach to matters beyond its direct control that have an impact on its community. SCP has the influence, and therefore the responsibility, to actively work on a number of important areas, including:

- Land use policies that promote development in transit-friendly, energy efficient and lower-cost-of-service locations
- Customer-owned distributed energy resources to support an affordable, reliable, low-carbon grid
- Universal access to electric vehicles and charging infrastructure
- Efficient and zero carbon buildings that rely less on “netting” and more on meeting real-time energy needs
- Low energy intensity agriculture
- Non-wires alternatives to both transmission and distribution reliability
- Advocating for lower cost energy policy and regulations

Ability to Contract

While the newness of CCAs means that conversations around credit are a part of every supply contract negotiation, SCP has been able to successfully execute all of its intended transactions. It is SCP’s understanding this experience is common to all of the 18 operating CCAs, suggesting that concerns about credit by new CCAs do not appear to be well founded—at least so far.

SCP has prepared to obtain even stronger credit positioning through careful and conservative financial management. SCP incurred debt for set-up costs prior to launch, however in the four years since SCP launched service, it has gone from a peak of $7.5 million in bank debt plus $1.7 million in debt to Sonoma Water to a net position of $75 million (May 2018) with no debt. SCP currently holds reserves equal to four months of expenses and its Board has adopted a financial policy to continue building reserves until six months of expenses are held.

Reliability Planning

In addition to providing system reliability, SCP has roles in integrating renewable sources and helping avoid some IOU investments. With respect to providing reliable power, SCP takes great pride in moving rapidly toward providing over 90% of all energy from zero and near-zero GHG sources in a manner that
all electric providers could afford to copy. It requires significant effort to support a reliable grid while using variable (wind and solar) resources in growing amounts. SCP has accomplished this by:

- Procuring a diverse portfolio of renewable and hydropower sources designed to match real-time customer load to the greatest extent practical.
- Negotiating for curtailment rights and flexibility from solar and wind resources, and plan to begin integrating storage into future solar and wind facilities.
- Being prepared to aggregate large amounts of customer load through automated demand response to provide hourly load shaping with both up and down regulation. Include stationary storage in this resource.

SCP also recognizes the significant potential ratepayer savings from using customer-owned resources to provide distribution system reliability, and advocates for the ability to provide non-wires alternatives.

B. Resource Plan Overview

SCP has a policy to plan ahead to ensure its sources for default service are a minimum of 30% lower in GHG intensity than PG&E’s default service. SCP’s long-term goal is to nearly-eliminate its portfolio emissions and has set ambitious targets of:

- 75 lb CO₂/MWh (0.034 MT CO₂/MWh) by 2030
- 50% RPS-eligible energy by 2020, approximately 6 years ahead of its new CPUC requirement (per SB 100, passed on 9/10/2018)

SCP is on track to achieve these goals. The Figure below shows the third party verified emission factors from The Climate Registry for PG&E and SCP since SCP’s inception along with PG&E’s forecast and SCP’s targets.
Current Power Supply

SCP works to power Sonoma and Mendocino Counties with clean electricity, while keeping customer rates low and stable. In 2017, SCP provided 13,487 MWh of geothermal energy to its retail EverGreen customers. Its retail CleanStart customers with 2,367,075 MWh of electricity, 87% of which was sourced from renewables and large hydro, as illustrated in the chart below. The remaining 13% of SCP’s retail CleanStart load was sourced from CAISO system power.

To produce the 2017 CleanStart power portfolio illustrated above, SCP had the following contracts:

- 50 MW (249,313 MWh) of local baseload geothermal from the Geysers facility in Sonoma County (13,487 MWh also went to the EverGreen portfolio).
- 100 MW (264,832 MWh) of utility-scale solar from 3 solar projects in Lemoore, CA (30 MW of this solar will discontinue after 2017, so SCP will only have 70 MW beyond 2017).

- 46 MW (6,805 MWh) of utility-scale wind (which went commercial in November 2017) from a repowered wind facility in Livermore, CA.

- Energy contracts for large hydro (997,015 MWh) from out-of-state delivered to the CAISO.

- Energy contracts for PCC 2 (542,067 MWh). This is renewable power that is generated within the Western Interconnection and delivered (using substitute power) to the CAISO within the calendar year. Such contracts are known as Portfolio Content Category 2 (PCC 2) and qualify as renewable contracts under California’s Renewable Portfolio Standard (RPS) regulations.

- CAISO System Power (307,043 MWh). SCP bids/schedules all of its load and contracted supply into the markets run by the CAISO. From a net settlements perspective, this means that SCP buys CAISO system power when its load is greater than its contracted supply, and SCP sells power to the CAISO when its contracted supply is greater than its load.

In 2017, SCP’s estimated emissions factor (not yet third party verified) for its CleanStart default service totaled 128 lbs CO₂/MWh (0.06 metric tons CO₂/MWh).

In 2017, SCP provided 13,487 MWh of 100% geothermal energy to its retail EverGreen customers with an estimated emissions factor of 53 lbs CO₂/MWh (0.02 metric tons CO₂/MWh).

**Planned Future Power Supply**

SCP plans to continue local renewable development and contracting for increased renewable and carbon-free resources. SCP specifically highlights the investment in local renewable development within Sonoma and Mendocino Counties. By 2030, SCP plans to have 56 MW of local renewable sources (50 MW geothermal, 6 MW solar) to specifically serve EverGreen customers and supplement the default CleanStart service.

Across all of its contracts—local and otherwise—SCP plans to have the following sources through 2030:

- **Geothermal (RPS Portfolio Content Category 1)** - In addition to the existing 50 MW of geothermal resources under contract from the Geysers facility in Sonoma County through 2026, SCP plans to procure comparable resources under long-term contract after 2026.

- **Solar (RPS Portfolio Content Category 1)** - In addition to the 70 MW of utility-scale solar in Lemoore, CA, SCP has 2 MW of Feed-In-Tariff solar in Sonoma County that came online in April 2018. SCP has another 3 MW of Feed-in-Tariff solar under contract in Sonoma County and 1 MW of Feed-in-Tariff solar under contract in Mendocino County. The Feed-in-Tariff projects are expected to come online in late 2018 and mid-2019. SCP is actively working on additional solar contracts to increase the total solar portfolio to 146 MW before 2030.

- **Wind (RPS Portfolio Content Category 1)** - In addition to the 46 MW of utility-scale wind built and operating in Livermore, CA, SCP recently executed a contract for another 80 MW of utility-scale wind in Northern California. It is expected to come online by January 1, 2021, for a total of 126 MW of wind in 2030.

- **Large Hydro** - SCP currently has several energy contracts for large hydro both in-state and out of state. Currently, SCP does not contract for shaped hydro.
- Additional short term RPS - SCP currently has PCC2 energy contracts for renewable power that is generated within the Western Interconnection and delivered (using substitute power) to CAISO within the calendar year. SCP plans to utilize short term RPS contracting for either PCC1 or PCC2 resources to true up any needs due to load forecasting variable resource forecasting adjustments through the planning horizon.

- Storage - In accordance with CPUC Decision 13-10-040, SCP must demonstrate storage equal to at least 1% of its 2020 annual peak load with such systems online and delivering by the end of 2024. Accordingly, SCP is actively working on a contract for 5 MW of storage starting in 2023. SCP is also allowed to count portions of customer-installed storage projects towards its 1% requirement, and such portions totaled 0.77 MW as of June 1, 2018. This totals 5.77 MW of currently planned storage in 2030. As more data becomes available on the operation of SCP’s 5 MW storage project, SCP will revisit potential additional storage capacity targets.

- CAISO System Power- SCP plans on steadily decreasing its reliance on system power each year to comprise less than 10% of total power purchases by 2030.

- Resource Adequacy (RA)-Only- SCP currently has numerous RA-only contracts that it uses to supplement the long-term RA provided by its RPS PCC 1 contracts to comply with California’s RA program. The RA program requires LSEs to demonstrate specific quantities of system, local and flexible capacity in the year-ahead and month-ahead time frames. SCP will continue to fully comply with all RA requirements, and SCP will continue its practice of procuring long-term, multi-year, year-ahead and month-ahead RA.

The following graphs show the current and planned resource generation for each year 2019-2030 as outlined above. The ‘Current Procurement’ graph shows resources under contract or in active negotiation. The ‘Current + Planned Procurement’ graph shows the additional resources that SCP plans to procure through 2030. Since storage only shifts the time generation is put on the grid and doesn’t actually generate its own energy, it does not appear on the graph.
The following chart shows the SCP planned percent power mix for 2030.

**Hourly Load and Supply Matching**

In addition to realizing annual targets, the SCP procurement strategy is to work toward aligning the hourly resource supply with the hourly customer load demand. First, SCP procures resources to closely follow the typical demand profile, next SCP endeavors to adjust the load profile through customer programs that will closer align with and react to the real-time profile of the generation sources. This is described further in Chapter 7 Integrated Procurement of Supply and Demand Resources.

The 2030 forecasted hourly profile of SCP’s renewable resources is matched with the forecasted load to obtain the hourly net open position as shown in the following graph. The graph shows the amount of energy needed to procure to meet our load without utilizing hydropower or system power. SCP plans to
procure hydropower through 2030, however SCP does not have insight into the dispatch profile of future hydropower contracts. This graphs highlights the importance of hydropower in a portfolio to balance variable and seasonal renewable supply. This graph also helps SCP determine periods within the year that hydropower would be most beneficial (for example, the winter and fall months when solar and wind power is not as abundant). The graph shows a few hours of the year where SCP’s forecasted renewable supply is greater than the forecasted load. Note that SCP also has the ability to curtail resources when desired and is actively working on contracts that allow for an agreed amount of curtailment hours without penalty or payment.

The following graph shows the average daily net open position for March, June, September, and December 2030. This level of forecasting shows seasonal variations in hourly open position that inform what hours are needed to fill with a potential future shaped hydropower contract.

The following graphs show another view of the graph presented above, however instead of just net open position, they explicitly show the 2030 forecasted average daily customer load and average daily resource supply. The difference between the load line and the supply area is the net open position.
6. Integrated Procurement of Supply and Demand Resources

A. Procurement

SCP procures both supply and demand resources to meet its customer needs. The integration of this effort, and the reliance on customer-owned resources, has growing importance as California continues to increase its use of solar and wind.

Supply Resources

SCP’s procurement activities are structured to meet compliance obligations and agency goals. The exact portfolio characteristics selected must constantly adapt to legislative and policy changes, technological improvements, and new information about markets and risk. To manage this future uncertainty, SCP continuously examines and estimates supply and customer demand, including demand trends as they relate to population of customers served, climate, energy efficiency, distributed generation, electrification of vehicles and buildings, and emerging industries. SCP structures its procurement efforts to balance customer demand with resource commitments. SCP also considers the deliverability characteristics of its resources and reviews the respective risks associated with short and long-term purchases as part of its forecasting and procurement processes. These efforts have led to a diverse resource mix that addresses grid integration issues, closely matches our electrical supply to our customers’ demand and reduces ratepayer risk. SCP examines the need to procure new resources when significant change in load is expected to occur (e.g. phasing in new territories). If further procurement is deemed necessary, bilateral transactions as well as Requests for Offers (RFOs) to fill these needs are issued to the market and offers are assessed to determine the best outcome for SCP’s portfolio.

SCP also operates ProFIT, a feed in tariff program designed to promote medium-sized solar installations in Sonoma and Mendocino counties that has resulted in six contracts to build approximately 6 MW, 2 MW of which came on line in April 2018.

B. Demand Resources

SCP currently operates 17 customer programs, all of which are designed to keep energy affordable while reducing greenhouse gas emissions and supporting grid reliability. SCP does not currently see value in duplicating or competing with PG&E’s customer programs, but instead advertises them to customers or thinks of creative ways to layer additional offerings on those programs. SCP’s programs can be categorized to have the following impact on SCP loads: renewable integration/system reliability, load reducing, load shifting, and minimal load impact. For more comprehensive information on SCP’s customer programs, see the Programs Group Strategic Action Plan (Exhibit B).

Programs that Support Renewable Integration and System Reliability

While SCP doesn’t focus specifically on programs that build load, goals such as the displacement of petroleum in on-road transportation and natural gas in building heating and water heating have a natural effect of increasing customer electrical usage while reducing greenhouse gas emissions. Programs that
build load are paired with strategies to shift this increased load to minimize additional need for supply resource procurement or costly grid infrastructure upgrades.

Through its Drive EV Program, SCP has negotiated bulk discounts averaging more than $11,000 per car for the purchase or lease of electric vehicles. Since the fall of 2016, 773 electric vehicles have been sold or leased through the program. Based on a post-program evaluation, the 2017 program is anticipated to save 4,985 metric tons of CO2 over the next three years.

Based on post-purchase surveys, most Sonoma and Mendocino county EV owners want to charge their vehicles at home. To this end, SCP provides Free Residential Level 2 Charging Stations to its customers. This program resulted in the shipment of 1681 (as of June 1, 2018) electric vehicle charging stations. SCP works to ensure charging stations are not used during the evening ramp period by integrating the chargers into its GridSavvy program.

A program to incentivize the purchase of EV’s by local non-profits has resulted in 3 EVs being provided. This program will continue into 2019.

SCP is currently operating a workplace charging pilot program to help 5 workplaces in Sonoma and Mendocino counties evaluate the costs and benefits of installing large scale electric vehicle charging station projects. This program works collaboratively to funnel customers to PG&E’s EV Charge Network program.

The Advanced Energy Rebuild Program is a unique program created in partnership with PG&E and the BAAQMD to incentivize those rebuilding their homes after the 2017 fires to do so in an energy efficient and carbon-free manner. While these homes will represent a significant reduction in load over their pre-fire equivalents, SCP expects to see a gradual increase in customer load as these homes come online.

**Programs that Reduce Load**

Load reduction programs tend to be cost effective per current CPUC cost-effectiveness metrics, which make them a natural fit for investor-owned utilities (IOUs) such as PG&E. Because of SCP’s efforts to not duplicate existing PG&E programs and its ability to more quickly establish customer programs, SCP instead chooses to focus on areas where we can innovate and be more responsive to Sonoma and Mendocino counties’ specific needs.

A net energy metering program called NetGreen has resulted in payments of $2.1 million to 4,400 customers who have produced excess local renewable energy.

SCP has partnered with the County of Sonoma and the Sonoma County Water Agency to provide Do-It-Yourself Energy and Water Saving Toolkits that include energy and water efficiency devices such as LED lightbulbs, low-flow devices, weatherstripping at almost all libraries in SCP’s territory. The toolkits, which can be checked out for free just like a book, have been checked out 296 times as of June 2018.

In summer of 2018, a program designed to promote low income solar installations on homes was initiated in partnership with Grid Alternatives. The program is currently evaluating the installation of solar on 30 qualified Sonoma Clean Power customer leads.

SCP funds Solar Sonoma County, which provides support to local residents who wish to install renewable energy systems. Solar Sonoma County provides impartial advice regarding PV siting, financing and contractor selection.
SCP has a program to provide free assistance to commercial customers with energy audits or in planning and implementing energy efficiency upgrades on an as-needed basis.

SCP was awarded a $9.8 million grant from the CEC to promote energy efficiency and fuel substitution technologies in the residential sector. The goal of the grant is to deploy energy efficiency in a total of 300,000 square feet of customer space and reduce energy usage by 10% in participating residential projects and 20% in participating commercial projects.

**Programs that Shift Load**

SCP has progressed from traditional utility program models to start thinking about time-valuation of energy and how best to match customer load with procured supply.

A Commercial and Industrial Battery Storage Pilot Program was implemented to assist commercial customers in reducing their demand charges through battery storage. Properties for the pilot were targeted based on an analysis of SCP customers with the largest peak demand.

A market assessment of the potential for heat pump water heaters in SCP territory was completed. SCP is working with heat pump water heaters to ensure products are capable of receiving a remote OpenADR signal so that heat pump water heater thermal storage capacity can be more readily leveraged as a grid resource in the GridSavvy program.

GridSavvy is a grid reliability platform with the capability of automatically dispatching technologies such as electric vehicle chargers, heat pumps, thermostats and stationary batteries to both increase and decrease load on a fast signal. The goal of GridSavvy is to achieve Proxy Demand Response participation in 2020, Non-Generating Resource participation in 2024 and qualified System Resource Adequacy in 2030. Currently there are over 500 customers that are participating in GridSavvy’s first offering, which controls electric vehicle charging stations.

**Programs with Minimal Load Impact**

An Induction Cooking Lending Program has been established so customers can borrow and test induction cooktops. While there is minimal direct load impact, it is hoped to encourage installation of induction cooktops in new construction and retrofit projects.

The SWITCH electric vehicle education program placed 5 electric kit cars in local high schools in Sonoma and Mendocino counties to educate students about the manufacture and maintenance of electric vehicles. While this program is not expected to have direct impacts on customer load, it is seen as an educational resource that may increase EV penetration in the future.

An Energy Education Program for Schools was initiated in the Fall of 2017 and ran through the school year, reaching over 10,000 students with information about energy efficiency, climate change and actions students can take to help the environment.
Methods for the long-term planning of demand resource grid impacts are still rudimentary, and lacking important sources of data. While SCP routinely makes estimates of EV adoption rates, residential efficiency programs, updates to Title 24 building codes, amounts of new customer-owned solar power, etc., there are a number of data sources that would greatly improve the ability to forecast demand resources and the financial value of those resources. These include:

- Use of actual residential smart meter data for scheduling loads into CAISO. Currently, IOUs use average profiles for residential customers rather than actual demand profiles, meaning that load-serving entities cannot generate the same financial rewards from residential customer participation in demand response programs, thereby leaving these customers behind.
- Public access to gasoline and diesel fuel sales by ZIP code to allow more accurate fuel switching calculations from transportation electrification efforts.
- Public access to real-time electric circuit data and regular updates to approved connected loads and net-metered resources by circuit to allow improved distributed energy resource planning by customers, CCAs and third parties.

C. Managing Risks

Supply Resource Risks

When making power procurement decisions, SCP considers numerous market factors which may include the following:

- Market price risks (CAISO Locational Marginal Pricing (LMP), Resource Adequacy (RA) prices, eligible Renewable Portfolio Standard (RPS) prices, Specified-source prices, etc.)
- Locational price risk of physical resources
- Counterparty credit risk
- Contract language in long-term contracts
- Curtailments
- Variance from load forecasts
- SCP’s customer participation/opt-out rate
- Assignment of unplanned resources (for example, through the Cost Allocation Mechanism (CAM), Reliability Must-Run (RMR), Capacity Procurement Mechanism (CPM))
- Legislative and regulatory changes (for example, RA, RPS, and Power Source Disclosure (PSD) requirements)

The primary price risks are legislative and regulatory. For example, SCP may procure its portfolio using current and existing guidelines in order to meet our agency goals while meeting or exceeding state mandates. Should the laws change or be implemented differently than originally intended, this would cause SCP to have to procure additional resources in order to meet the mandates, resulting in overprocurement and additional customer costs. Other common business risks include load forecast...
error, unexpected changes in customer participation, supply forecast error (e.g., variable generation output of solar and wind resources), generation curtailment risks, and forward pricing peak and off-peak unhedged energy.

These risks are managed through several common approaches, including diversity of supply technology, location, length, supplier, and financial hedging. SCP has signed long-term contracts with geothermal, solar, and wind renewable resources to minimize dependence on any one supply resource type. SCP’s supply is also geographically diverse in Northern California to manage to price spread from the generator LMP to the load LMP. Using various locations in Northern California enable SCP to manage any large variances between what we purchase from the CAISO (load bids) and what we sell to the CAISO (generation offers). SCP seeks to spread the mix of generation resources over various LMP locations, so that the price risk is not too concentrated in any one area. In addition to carefully selecting the physical location of renewable assets, SCP will stagger the contracting terms for our long-term contracts. Some long-term contracts are for 10 years, while others are for 20 years. SCP works with expert industry counsel to negotiate these long-term contracts in order to anticipate market changes that will enable SCP to be protected under changing conditions. SCP also financially hedges its position. Instead of making one big purchase to fill a position, SCP makes multiple purchases over time, providing flexibility to respond to market conditions while achieving budget predictability. SCP will benefit in periods of price declines, as well as have the security of knowing that price increases will be mitigated over time. This helps SCP achieve our business goals, manage price risk and achieve budget certainty.

Although the capacity market in California is evolving, SCP has taken steps to hedge our risk for changing market rules and conditions. Currently, the capacity market mandates an LSE must be 100% complete for meeting their Local Area capacity obligation 60 days before the beginning of a calendar year. SCP has gone out as far as 20 years to hedge some of that obligation. In fact, SCP has ~80% of its anticipated Local Area obligation purchased for the next four years.

**Demand Resource Risks**

Common risks associated with demand resources include:

- **Availability of dispatch.** Smart grid devices, such as thermostats, heat pumps, electric vehicle chargers, solar inverters and batteries, may be part of an aggregated resource bid into the CAISO’s Proxy Demand Resource or Non-Generating Resource markets, PG&E’s DRAM, or potentially full qualifying Resource Adequacy. However, a key element of each of these markets is the level of certainty that the resource will respond to a signal, when requested. SCP plans to mitigate this risk through statistical diversity of customers, including a margin for error, and operating networks to test availability and response before committing grid resources.

- **Incomplete participation.** The process for enrolling customer resources in grid services is cumbersome and complex, involving multiple forms, and several steps for registration. SCP is working to streamline enrollment to make participation easier. To date, SCP estimates that less than one quarter of installed smart grid resources are currently registered in a grid resource.

- **Legislation.** Barriers to customer participation in grid reliability are routinely proposed in legislation, likely because they pose a risk to supply-side resource providers. SCP works to ensure that customers retain the ability to use smart grid technologies and to receive full value for those technologies, including offsetting supply-side resources when appropriate.
7. Exhibit A: CPUC IRP Compliance Filing
8. Exhibit B: SCP Programs Strategic Action Plan
SONOMA CLEAN POWER AUTHORITY

2018 INTEGRATED RESOURCE PLAN EXHIBIT A

APPROVED BY SCPA’S BOARD OF DIRECTORS ON JULY 12, 2018
SUBMITTED TO THE CPUC ON AUGUST 1, 2018
Table of Contents

Table of Contents .......................................................................................................................................... 2

1. Executive Summary ...................................................................................................................................... 3

2. Study Design............................................................................................................................................ 3

   2.1 Objectives........................................................................................................................................... 6

   2.2 Methodology ....................................................................................................................................... 6

       2.2.1 Modeling Tool(s) ................................................................................................................... 6

       2.2.2 Modeling Approach .............................................................................................................. 6

       2.2.3 Assumptions ............................................................................................................................ 7

3. Study Results ............................................................................................................................................ 8

   3.1 Portfolio Results .................................................................................................................................. 8

   3.2 Preferred Portfolio ............................................................................................................................. 8

       3.2.1 Local Air Pollutant Minimization .......................................................................................... 8

       3.2.2 Cost and Rate Analysis ........................................................................................................... 9

   3.3 Deviations from Current Resource Plans .......................................................................................... 10

   3.4 Local Needs Analysis ......................................................................................................................... 10

4. Action Plan ............................................................................................................................................... 10

   4.1 Proposed Activities ............................................................................................................................ 11

   4.2 Barrier Analysis ................................................................................................................................. 11

   4.3 Proposed Commission Direction ....................................................................................................... 11

5. Data ............................................................................................................................................................ 11

   5.1 Baseline Resource Data Template .................................................................................................... 12

   5.2 New Resource Data Template ........................................................................................................... 12

   5.3 Other Data Reporting Guidelines ................................................................................................... 13

6. Lessons Learned ....................................................................................................................................... 14

   Glossary of Terms .................................................................................................................................... 15
1. Executive Summary

Sonoma Clean Power Authority (SCP) is a Community Choice Aggregator (CCA), a public agency and Load Serving Entity (LSE) formed under California Assembly Bill 117 (2002). SCP is structured as a Joint Powers Authority and is governed by a Board of Directors comprised of elected officials from the counties, towns and cities of its service territory. SCP began serving customers in May 2014 and today (as of 6/1/2018) serves approximately 223,000 accounts across Sonoma and Mendocino counties.

In accordance with California Public Utilities Commission (CPUC) Decision 18-02-018, which requests that CCAs share specific elements of their Integrated Resource Plans (IRPs) with the CPUC by August 1, 2018, SCP hereby submits Exhibit A of its 2018 IRP. Exhibit A consists of four templates (one document and three spreadsheets), as provided by the CPUC. With input from its Community Advisory Committee and with approval from its Board of Directors on July 12, 2018, SCP makes this submission on August 1, 2018.

**DISCLAIMER:** While SCP fully supports the goal of sharing information to support long-term statewide resource planning, it cautions against relying on the results contained in this Exhibit A, which is based on CPUC templates and methodologies that may create inaccuracies (as detailed in Table 3 below) when applied to an individual LSE. Instead, SCP recommends that statewide resource planning rely on the results found in SCP’s full 2018 IRP, which is currently being finalized and will be posted to SCP’s website by December 2018. In addition to sharing SCP’s best available information on customer load, generation resources and other important data, SCP’s 2018 IRP will include a full overview of the agency (including its goals and customer programs), a chapter explaining its portfolio-related regulatory requirements and several chapters that detail its procurement processes.

In order to produce Exhibit A, SCP has estimated the resources it will need in 2030 to meet its California Energy Commission (CEC) forecasted load, published by the CEC on February 16, 2018 as part of the 2017 IEPR. With these estimated resources and its CEC-published load forecast, SCP has used the CPUC’s “GHG Calculator for IRP v1.4.5” to calculate that its GHG emissions in 2030 will be 0.152 MMT, significantly below the 0.445 MMT benchmark provided by the CPUC. Accordingly, SCP’s estimated 2030 portfolio meets the CPUC’s definition of “conforming.”

Importantly, the estimated resources listed in Exhibit A are for CPUC planning purposes only and do not represent a procurement commitment by SCP.

As requested by the CPUC, SCP’s Exhibit A includes 3 attachments:
- Attachment 1: a completed version of the CPUC’s Baseline Resource Data Template
- Attachment 2: a completed version of the CPUC’s New Resource Data Template
- Attachment 3: a completed version of the CPUC’s GHG Calculator for IRP v1.4.5
2. Study Design

a. Objectives

At the highest level, the objective of SCP’s 2018 IRP Exhibit A is to share with the CPUC SCP’s conforming planned portfolio for 2030.

More specifically, the objectives of SCP’s 2018 IRP Exhibit A are as follows: (A) to demonstrate that SCP has a resource plan to meet its CEC 2017 IEPR load forecast through 2030; (B) to demonstrate that SCP’s resource plan meets the 2030 GHG Emissions Benchmark of 0.445 MMT, when calculated using the CPUC’s GHG Calculator for IRP v1.4.5; (C) to point out the key inaccuracies of the methodologies underlying Exhibit A.

CEC’s Adopted 2017 IEPR Forecast
Mid Baseline mid AAEE mid AAPV version of Form 1.1c
Published by the CEC on February 16, 2018

<table>
<thead>
<tr>
<th>Metric</th>
<th>Unit</th>
<th>2018</th>
<th>2022</th>
<th>2026</th>
<th>2030</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managed Retail Sales Forecast for Sonoma Clean Power Authority</td>
<td>GWh</td>
<td>2,665</td>
<td>2,598</td>
<td>2,550</td>
<td>2,507</td>
<td>See Form 1.1c. Includes effect of BTM PV, AAEE etc.</td>
</tr>
</tbody>
</table>

*Note: See disclaimer on data accuracy in the Executive Summary and Table 3.

2030 GHG Emissions
SCP must demonstrate that its estimated 2030 GHG emissions, when calculated using the CPUC’s GHG Calculator for IRP v1.4.5, will be equal to or less than the CPUC Benchmark for SCP, as stated in the CPUC’s 4/3/18 Order.

<table>
<thead>
<tr>
<th>2030 GHG Emissions (MMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPUC Benchmark for SCP, Per 4/3/18 Order</td>
</tr>
</tbody>
</table>
Key Inaccuracies Underlying Exhibit A

As mentioned in the Executive Summary above, SCP cautions against relying on the results contained in this Exhibit A, which are based on current CPUC templates and methodologies that may be inaccurate for individual LSEs. The inaccuracies of the CPUC methodology as they relate to SCP are as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Exhibit A</th>
<th>SCP 2018 IRP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Load Forecast</td>
<td>CEC 2017 IEPR Mid Baseline mid AAEE mid AAPV Form 1.1c</td>
<td>SCP-specific assumptions on:</td>
</tr>
<tr>
<td></td>
<td>Does not incorporate local and LSE-specific forecasts</td>
<td>- population growth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- housing stock and fire rebuild efforts in Sonoma and Mendocino Counties</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- SCP opt-out rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Electric vehicle growth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Other Electrification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- BTM Solar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Expected energy efficiency</td>
</tr>
<tr>
<td>Hourly Load Profile</td>
<td>Provided by CPUC in GHG Calculator for IRP v1.4.5. Assumes same profile for all LSEs</td>
<td>Developed internally by SCP, using up-to-date metered data and location-specific trends</td>
</tr>
<tr>
<td>Hourly Resource Profile</td>
<td>Provided by CPUC in GHG Calculator for IRP v1.4.5.</td>
<td>Based on resource and location-specific forecasts</td>
</tr>
<tr>
<td>GHG Emissions Target</td>
<td>CPUC Benchmark for SCP (Per 4/3/18 Order): 0.445 MMT in 2030</td>
<td>SCP emissions intensity target: 0.034 MT/MWh (75 lbs/MWh) CO2e by 2030</td>
</tr>
<tr>
<td>GHG Emissions Calculation</td>
<td>Calculation done using the CPUC’s GHG Calculator for IRP v1.4.5. This calculator does not recognize PCC 2 resources as GHG-free, even when the imported physical energy is from a GHG-free resource</td>
<td>Calculation done internally (using an annual calculation in line with The Climate Registry) and recognizes PCC 2 resources as GHG-free</td>
</tr>
<tr>
<td>Renewables Portfolio Standard (RPS) Target</td>
<td>No specific RPS target stated</td>
<td>50% RPS by 2020 and thereafter</td>
</tr>
<tr>
<td>RPS Calculation</td>
<td>No RPS calculation stated, but GHG methodology is inconsistent with RPS program</td>
<td>Includes PCC 2 as eligible renewable resources, per CPUC rules</td>
</tr>
<tr>
<td>T&amp;D Losses</td>
<td>Uses 7.3% loss factor to scale up retail load to loss-adjusted load</td>
<td>SCP uses SCP-specific losses and UFE to calculate retail vs. loss-adjusted load. Per Renewables Portfolio Standard, Power Source Disclosure and Climate Registry guidelines, SCP uses retail load, not loss-adjusted load</td>
</tr>
</tbody>
</table>
b. Methodology

i. Modeling Tool(s)

To produce Exhibit A, SCP used the CPUC’s GHG Calculator for IRP v1.4.5 (attachment 3) in conjunction with the CEC’s 2017 IEPR load forecast.

ii. Modeling Approach

To produce Exhibit A, SCP used the templates provided by the CPUC to create one conforming portfolio.

iii. Assumptions

SCP has listed its conforming portfolio in the two resource data templates provided by the CPUC: Baseline Resource Data Template (attachment 1); New Resource Data Template (attachment 2). In addition, SCP has used the CPUC’s GHG Calculator for IRP v1.4.5 (attachment 3) to calculate its 2030 emissions. To produce Exhibit A, SCP is therefore relying upon the assumptions incorporated into the GHG calculator.

SCP notes a potential source of confusion:

In the Baseline and New Resource Data Templates, SCP provided its best estimates of energy production. Such estimates may not necessarily match the energy production figures from the GHG Calculator, as the Calculator automatically uses default resource profiles rather than project-specific profiles.

3. Study Results

a. Portfolio Results

For Exhibit A, SCP is submitting one portfolio, its “conforming” portfolio. SCP’s conforming portfolio consists of the resources listed in the Baseline Resource Data Template (attachment 1) and in the New Resource Data Template (attachment 2). SCP’s conforming portfolio consists of the following types of resources:

Geothermal (RPS Portfolio Content Category 1)
SCP currently has 50 MW of geothermal resources under contract, and SCP’s estimated 2030 portfolio assumes that comparable resources will be procured through 2030.

Solar (RPS Portfolio Content Category 1)
SCP currently has 70 MW of utility-scale solar and 6 MW of Feed-In-Tariff Solar under contract, and SCP’s estimated 2030 portfolio assumes that its total solar portfolio will grow to 146 MW.
**Wind (RPS Portfolio Content Category 1)**
SCP currently has 46 MW of utility-scale wind under contract, and SCP’s estimated 2030 portfolio assumes that its utility-scale wind portfolio will grow to 126 MW.

**Large Hydro**
SCP currently has several energy contracts for large hydro. Using the “Hydro Dispatch” assumptions from the CPUC’s GHG Calculator, SCP has calculated that such energy contracts are equivalent to 379 MW in 2018. SCP’s estimated 2030 portfolio assumes that such contracts will grow to an equivalent capacity figure of 415 MW, again based on the “Hydro Dispatch” assumptions from the CPUC’s GHG Calculator.

**RPS Portfolio Content Category 2**
SCP currently has energy contracts for renewable power that is generated within the Western Interconnection and delivered (using substitute power) to CAISO within the calendar year. Such contracts are known as Portfolio Content Category 2 (PCC 2) and qualify as renewable contracts under California RPS regulations. Unfortunately, the CPUC’s GHG Calculator does not allow such contracts to be treated as GHG-free, even when the firming and shaping energy (delivered to CAISO) is generated by a GHG-free facility. As a result, SCP did not enter its current PCC 2 contracts into the GHG calculator, and SCP’s 2030 conforming portfolio does not include any PCC 2 contracts.

**Storage**
In accordance with CPUC Decision 13-10-040, SCP must demonstrate storage equal to at least 1% of its 2020 annual peak load, with such systems online and delivering by the end of 2024.\(^1\) Accordingly, SCP is actively working on a contract for 5 MW of storage starting in 2023. SCP is also allowed to count portions of customer-installed storage projects towards its 1% requirement, and such portions totaled 0.77 MW\(^2\) as of 6/1/18. This totals 5.77 MW of currently planned storage in 2030. However, to be conservative, SCP has only listed the 5 MW of planned capacity in its New Resource Data Template (attachment 2) starting in 2023. SCP has also listed 5 MW of storage in the GHG Calculator (attachment 3) for 2026 through 2030.

**CAISO System Power**
SCP bids/schedules all of its load and contracted supply into the markets run by the California Independent System Operator (CAISO), the largest of 38 balancing authorities that comprise the Western Interconnection. From a net settlements perspective, this means that SCP buys CAISO system power when its load is greater than its contracted supply, and SCP sells power to the CAISO when its contracted supply is greater than its load.

---

1. SCP’s energy storage procurement obligation is subject to an “automatic limiter,” per CPUC D.17-04-039, that proportionately reduces SCP’s one percent procurement obligation by the amount that SCP’s own procurement plus its customers’ share of non-bypassable charges exceeds PG&E’s bundled customer obligation as a percentage of load.
2. According to PG&E’s Advice Letter 5304-E, filed on 6/1/2018
Resource Adequacy (RA)-Only
SCP currently has numerous RA-only contracts that it uses to supplement the long-term RA provided by its RPS PCC 1 contracts to comply with California’s Resource Adequacy (RA) program. The RA program requires LSEs to demonstrate specific quantities of system, local and flexible capacity in the year-ahead and month-ahead time frames. SCP has listed its current RA-only contracts (as of 6/1/2018) in the Baseline Resource Data Template, but (in accordance with CPUC instructions) SCP has not listed any estimated future RA-only contracts. However, SCP will continue to fully comply with all RA requirements, and SCP will continue its practice of procuring long-term, multi-year, year-ahead and month-ahead RA.

2030 GHG Results
As highlighted in Table 4 directly below, SCP’s estimated 2030 GHG emissions, when calculated using the CPUC’s GHG Calculator, are significantly less than the CPUC Benchmark for SCP, as stated in the CPUC’s 4/3/18 Order. For more detail, please refer to SCP’s completed version of the CPUC’s GHG Calculator (attachment 3).

<table>
<thead>
<tr>
<th>Table 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPUC Benchmark for SCP, Per 4/3/18 Order</td>
</tr>
<tr>
<td>SCP Calculation, Using GHG Calculator for IRP v1.4.5</td>
</tr>
</tbody>
</table>

Note: SCP’s forecasted 2030 GHG emissions are even lower than what is listed above, due to differences outlined in Table 3 above.

b. Preferred Portfolio
SCP requests that the Commission certify the completeness of this Exhibit A, which contains SCP’s conforming portfolio, as summarized above in Section 3a. SCP’s conforming portfolio is consistent with each relevant statutory and administrative requirement stated in Public Utilities Code Section 454.52(a)(1):

(a) (1) Beginning in 2017, and to be updated regularly thereafter, the commission shall adopt a process for each load-serving entity, as defined in Section 380, to file an integrated resource plan, and a schedule for periodic updates to the plan, to ensure that load-serving entities do the following:

(A) Meet the greenhouse gas emissions reduction targets established by the State Air Resources Board, in coordination with the commission and the Energy Commission, for the electricity sector and each load-serving entity that reflect the electricity sector’s percentage in achieving the economywide greenhouse gas emissions reductions of 40 percent from 1990 levels by 2030.
SCP has demonstrated that its conforming portfolio 2030 GHG emissions, when calculated using the CPUC’s GHG Calculator for IRP v1.4.5, are significantly less than the CPUC Benchmark for SCP, as stated in the CPUC’s 4/3/18 Order. For more detail, please refer to SCP’s completed version of the CPUC’s GHG Calculator (attachment 3).  

(B) Procure at least 50 percent eligible renewable energy resources by December 31, 2030, consistent with Article 16 (commencing with Section 399.11) of Chapter 2.3.  

Through its conforming portfolio (listed in attachments 2 and 3) SCP has demonstrated that it will achieve 50% RPS before 2030.  

(C) Enable each electrical corporation to fulfill its obligation to serve its customers at just and reasonable rates.  

Under the direction of its Board of Directors, SCP sets rates that are competitive with the rates of PG&E. As a public agency with no fiduciary obligation to shareholders, any revenues in excess of cost-to-serve are returned to ratepayers via rate reductions or customer programs. SCP’s customers pay for and receive the CARE and FERA discounts and Medical Baseline, as these programs operate through the delivery charges and are available to all eligible bundled and unbundled customers.  

(D) Minimize impacts on ratepayers’ bills.  

In addition to setting rates that are competitive with PG&E, SCP works to minimize rate volatility by constructing a balanced and conservatively-hedged power supply portfolio, building significant financial reserves and by making rate changes only once per year whenever possible. SCP has invested significant financial and human resources to reduce the volatility of the PCIA, which represents approximately a third of generation rate charges.  

(E) Ensure system and local reliability.  

In order to meet CPUC and CAISO Resource Adequacy (RA) requirements, SCP procures system, local and flexible RA on a long-term, multi-year, year-ahead and month-ahead basis. In addition, SCP works to structure its supply portfolio in a manner that minimizes the hourly imbalances between its load and supply.  

(F) Strengthen the diversity, sustainability, and resilience of the bulk transmission and distribution systems, and local communities.  

As part of its core mission, SCP works to make the bulk electric system more diverse, sustainable and resilient. For example, SCP procures power from a variety of generation technologies with geographic diversity (minimizing risk associated with congestion and losses) and across a spectrum of capacities (from small Feed-In-Tariff projects to large utility-scale projects). SCP carefully evaluates the long-term
generation load-matching and congestion risks of new resources and weighs its options in the context of its existing supply and net demand on an hourly basis for the full duration of any contract period.

(G) Enhance distribution systems and demand-side energy management.

SCP has a number of customer programs that are designed to enhance distribution systems and demand-side energy management. For example, SCP is creating a platform (called GridSavvy) to allow the aggregation and automated dispatch of EV charging stations, heat pump water heaters, smart thermostats and other technologies to support grid reliability and integrate with CAISO and other markets, with a goal of reducing reliance on natural gas power for hourly shaping services.

(H) Minimize localized air pollutants and other greenhouse gas emissions, with early priority on disadvantaged communities identified pursuant to Section 39711 of the Health and Safety Code.

Please refer to the section directly below

i. Local Air Pollutant Minimization and Disadvantaged Communities

As part of its core mission, SCP works to minimize criteria air pollutants. For this reason, SCP has a clean supply portfolio that depends in large part on zero-emission generation technologies. In addition, SCP is actively working to promote the adoption of electric vehicles in its service territory. Through its Drive EV Program, SCP enables bulk discounts averaging more than $11,000 per car for the purchase or lease of electric vehicles. Since the fall of 2016, 773 electric vehicles have been sold or leased through the program. SCP also provides nearly free grid-enabled EV charging equipment. As of June 1, 2018, SCP had deployed 1,932 Level 2 smart-grid charging units, with 690 customers opting to enroll their equipment in SCP’s automated demand response program to promote renewable integration and reliability.

As required by the CPUC, SCP has used CalEnviroScreen 3.0 to identify one census tract within SCP’s service territory that is within the top 25% of impacted census tracts on a statewide basis, based on overall score. However, the pollution burden percentile in this tract is not identified as being within the top 25%. SCP estimates that this tract represents 1.3% of its service territory. SCP does not have any power supply contracts with resources located in or adjacent to this tract.

More generally, SCP is highly committed to helping its local communities. As part of this commitment, SCP is helping to rebuild the communities impacted by the October 2017 wildfires. More specifically, SCP lent staff to manage the protection of creeks and watersheds, committed $1 million to relief efforts and aided in coordinating funding requests for the region. SCP has recruited PG&E to partner on a joint program for the rebuild effort to incentivize deep energy efficiency, EV charging, onsite renewable energy with storage, and the avoidance of natural gas connections. Finally, SCP is
exploring an expansion of community solar that could be used for future Title 24 energy compliance to help enable infill housing and not discriminate against denser urban development. Customers would be able to pre-purchase a 20-year commitment to local, renewable energy. This customer payment would be used to help facilitate the development of additional clean energy resources.

ii. Cost and Rate Analysis

Under the direction of its Board of Directors and with the recommendation of its Community Advisory Committee along with input from the public, SCP sets its rates in accordance with its Board-approved financial policies.

To support the development of new generation resources to ensure electric reliability, the CPUC adopted the Cost Allocation Mechanism (CAM), which allows the costs and benefits of new generation to be shared by all benefiting customers in an IOU’s service territory. Accordingly, on a year-ahead and quarter-ahead basis, SCP is currently allocated Resource Adequacy volumes, and SCP’s customers pay for the corresponding costs.

Unfortunately, SCP has very little visibility into or control over the amount of RA that it will be allocated through CAM, which therefore makes RA procurement more difficult and can result in over-procurement. In addition, the existing rules limit CAM reliability resources to those procured by IOUs.

c. Deviations from Current Resource Plans

As required by the CPUC, SCP will be submitting an RPS Procurement Plan on August 20th, 2018. While much of the data within SCP’s RPS Procurement Plan will be consistent with this Exhibit A, there will be few key differences:

1. SCP’s RPS Procurement Plan will be based on SCP’s own retail sales forecast (updated, local and LSE-specific), whereas Exhibit A is based on the CEC’s 2017 IEPR forecast. Please refer back to Table 3 for more detail.

2. SCP’s RPS Procurement Plan will be based on unit-specific anticipated generation output, consistent with the CPUC’s Baseline and New Resource Data Templates. In contrast, the CPUC’s GHG Calculator is based on generic profiles that do not match the locational, technology and unit-specific forecasts.

3. SCP’s RPS Procurement Plan will include RPS PCC 2 resources, consistent with the CPUC’s Baseline Resource Data Templates. In contrast, the CPUC’s GHG Calculator does not allow PCC 2 resources to be entered as GHG-free resources, even when the firming and shaping energy (delivered to CAISO) is generated by a GHG-free facility.


d. **Local Needs Analysis**

In accordance with CPUC and CAISO Resource Adequacy (RA) requirements, SCP procures system, local and flexible RA on a long-term, multi-year, year-ahead and month-ahead time frames. In order to meet its local RA requirements, SCP must demonstrate that it has secured capacity in specific transmission-constrained (i.e., “local”) areas equal to its assigned share of the CAISO’s need for each month of the year. For the year-ahead filing (October 31st of the preceding year), SCP must demonstrate 100% of its assigned local capacity requirements for each month of the coming year. The assigned requirement for each local area is one MW quantity for the entire year, but SCP must show that it has secured enough capacity in each month to meet this quantity.

SCP will continue to fully comply with all RA requirements, and SCP will continue its practice of procuring long-term, multi-year, year-ahead and month-ahead RA.

4. **Action Plan**

a. **Proposed Activities**

SCP’s procurement activities are structured to meet compliance obligations and internal goals. SCP must continually shape the characteristics of its portfolio in accordance with legislative and policy changes, technological improvements, and new information about markets and risk. To manage this uncertainty, SCP continually examines and estimates supply and customer demand, including demand trends as they relate to population of customers served, climate, energy efficiency, distributed generation, electrification of vehicles and buildings, and emerging industries.

SCP structures its procurement efforts to balance customer demand with resource commitments. SCP also considers the deliverability characteristics of its resources and reviews the respective risks associated with short and long-term purchases as part of its forecasting and procurement processes. These efforts have led to a diverse resource mix that addresses grid integration issues, closely matches our electrical supply to our customers’ demand and reduces ratepayer risk. SCP examines the need to procure new resources when significant change in load is expected to occur (e.g. phasing in new territories). If further procurement is deemed necessary, Requests for Offers (RFOs) to fill these needs are issued to the market and offers are assessed to determine the best outcome for SCP’s portfolio.

With respect to disadvantaged communities (in California) as defined by CalEnviroScreen 3.0, SCP has one existing resource and two potential new resources located in such communities. All three resources are solar photovoltaic resources that do not contribute to pollution burden.
b. **Barrier Analysis**

For procurement decisions, SCP considers market factors which may include the following:

- Market price risks (CAISO LMPs, RA prices, RPS prices, specified-source prices, etc.)
- Counterparty credit risk
- Curtailments
- Variance from load forecasts
- SCP's customer participation/opt-out rate
- Assignment of unplanned resources (for example, through CAM, RMR, CPM)
- Legislative and regulatory changes (for example, RA, RPS, PSD requirements)

c. **Proposed Commission Direction**

This section is not applicable to CCAs.

5. **Data**

a. **Baseline Resource Data Template**

SCP has included (as attachment 1) its completed version of the CPUC’s Baseline Resource Data Template. SCP would like to note the following:

- With respect to RA-only contracts, SCP has listed all of its existing contracts as of 6/1/2018. In accordance with guidance from CPUC staff at a meeting on 5/31/18, SCP has not provided a list of estimated future RA-only contracts. Nevertheless, SCP will continue to fully comply with all RA requirements, and SCP will continue its practice of procuring long-term, multi-year, year-ahead and month-ahead RA.
- SCP has not provided the “Resource ID” and/or “Resource Type” for some of its RA-only and PCC 2 contracts – specifically those that are seller’s choice contracts.
- SCP has provided its best estimates of energy production. Such estimates may not necessarily match the energy production figures from the GHG Calculator, as the Calculator automatically uses default resource profiles rather than project-specific profiles.

b. **New Resource Data Template**

SCP has included (as attachment 2) its completed version of the CPUC’s New Resource Data Template. SCP would like to note the following:

- SCP is defining “new resources” as new steel in the ground with a commercial operation date after 12/31/17.
- SCP has provided its best estimates of energy production. Such estimates may not necessarily match the energy production figures from the GHG Calculator, as the Calculator automatically uses default resource profiles rather than project-specific profiles.
- SCP has listed “NA” for “Total Fixed Costs” associated with its expected new resources, as SCP will be the buyer and not the developer of these projects.
c. Other Data Reporting Guidelines

SCP has included (as attachment 3) its completed version of the CPUC’s GHG Calculator for IRP v1.4.5. SCP would like to note the following:

- In order to account for the GHG-free power associated with its large hydro energy contracts, SCP has back-calculated the implied capacities using the CPUC’s GHG Calculator. In other words, SCP has entered into the calculator (on the Dashboard tab) the hydro capacity figures that – when run through the CPUC’s hydro dispatch profiles – will result in the correct GWhs (i.e., the volumes specified in the contracts or the volumes projected to be under contract in the future)

6. Lessons Learned

While some of the simplifications made by the CPUC in its templates and instructions are likely necessary for making a standard reporting process accessible and understandable, SCP cautions against using the numbers reported under this framework for resource planning purposes. Exhibit A does not represent the best available data about SCP’s resources, load or program impacts, which is why we encourage the commission to use SCP’s full IRP for planning purposes. We are also committed to working collaboratively with the CPUC on finding ways to improve this process so that better data can be shared across LSEs.

While the late instructions on the process made this challenging, SCP is very grateful for the implementation-related conversations with CPUC staff that began in the spring of 2018. These conversations greatly helped to clarify how to interpret the CPUC’s templates.
Sonoma Clean Power Programs Group

Strategic Action Plan

Updated June 29, 2018
Table of Contents
Acronyms .................................................................................................................................................. 3
Executive Summary .............................................................................................................................. 4
Program Strategies and Levels of Action ............................................................................................ 8
Significant Progress .............................................................................................................................. 5
New Actions ............................................................................................................................................. 7
Program Strategy One ......................................................................................................................... 9
  Promote the Use of Electric Vehicles in Transportation ................................................................. 9
Program Strategy Two ....................................................................................................................... 12
  Promote Fuel Switching in New and Existing Building Stock ....................................................... 12
Program Strategy Three .................................................................................................................... 15
  Identify and Apply for External Funding to Support Programs ...................................................... 15
Program Strategy Four ....................................................................................................................... 16
  Promote the Aggregation of Loads and Resources ......................................................................... 16
Program Strategy Five ........................................................................................................................ 17
  Support the Integration of Distributed Energy Resources in SCP’s Territory .............................. 17
Program Strategy Six ........................................................................................................................ 20
  Support the Transition to Zero Net Energy Building Codes and Practices ................................. 20
Program Strategy Seven .................................................................................................................... 22
  Test and Evaluate the Use of New Technologies .......................................................................... 22
Program Strategy Eight ..................................................................................................................... 23
  Promote Public Education Involving Energy Efficiency and Fuel Switching ............................... 23
Summary of Actions ........................................................................................................................... 25
Acronyms

BAAQMD – Bay Area Air Quality Management District
BayREN – Bay Area Regional Energy Network
CAISO – California Independent System Operator
CCP – Center for Climate Protection
CSE – Center for Sustainable Energy
CTE – Career Technical Education Foundation
CPUC – California Public Utilities Commission
DEV- – Drive EverGreen
DRRS – Demand Response Reporting System
DNV-GL – An energy efficiency consultant
DIY – Do it Yourself
eMW – Electric Motor Werks
EM&V – Evaluation, Measurement and Verification
EV – Electric Vehicle
GHG – Greenhouse Gasses
HVAC – Heating, Ventilation and Air Conditioning
JPA – Joint Powers Authority
MCE – Marin Clean Energy
NCBE – North Coast Builders Exchange
NEM – Net Energy Metering
NRDC – Natural Resources Defense Council
MW – Megawatt
PG&E – Pacific Gas and Electric
RCPA – Regional Climate Protection Authority
SCP – Sonoma Clean Power
SCTA – Sonoma County Transportation Authority
SCWA – Sonoma County Water Agency
TNC – Transportation Network Company (Uber, Lyft)
ZNE – Zero Net Energy
Executive Summary

Sonoma Clean Power is enabled by a Joint Powers Agreement (JPA) which states the following as purposes for entering into the Agreement:

a) Reducing greenhouse gas emissions in Sonoma and Mendocino Counties and neighboring regions;

b) Providing electric power and other forms of energy to customers at a competitive cost;

c) Carrying out programs to reduce total energy consumption;

d) Stimulating and sustaining the local economy, including by developing or promoting local distributed energy resources; and

e) Promoting long-term electric rate stability, energy security, reliability, and resilience

The purpose of this document is to supply a road map for the SCP Programs Section by clearly identifying strategies and the actions needed to accomplish those strategies. This plan will facilitate the Programs Section in efficiently accomplishing its mission. In addition to an overall program road map, this document will also attempt to prioritize individual actions based on available resources, regulatory constraints and other areas of uncertainty. Each of the strategies identified in this plan will refer to one or more of the purposes identified in the JPA. The evaluation of particular programs will include metrics specific to that program and will occur after the program has had a reasonable time to establish itself. This document will be updated twice each year in January and June.
Significant Progress

SCP has implemented the following activities in the Programs Section:

1) The **Drive EverGreen 2.0** program incentivized the purchase or lease of 567 electric vehicles in a 16-week timeframe. This is in addition to the 207 vehicles purchased or leased in Drive EverGreen 1.0, for an overall total of 774 vehicles.

2) The **Free Charging Station** program resulted in the shipment of 1681 (as of 06/01/18) electric vehicle charging stations to SCP customers and is the genesis of a locally controlled demand response program.

3) The **SWITCH** electric vehicle education program placed 5 electric kit cars in local high schools to educate students about the manufacture and maintenance of EV's.

4) **ProFIT**, a feed in tariff program designed to promote medium sized solar installations in Sonoma and Mendocino counties that has resulted in six contracts to build approximately 6 MW, 2MW of which came on line in April and May 2018.

5) A net energy metering program called **NetGreen** has resulted in payments of $1.4M+ to 2,900 SCP customers who have produced excess local renewable energy.

6) **Do-It-Yourself Energy and Water Saving Toolkits** which include basic energy and water efficiency tools and products that have been placed in almost all Sonoma County libraries. The 30 toolkits in circulation can be checked out just like a book and have proven to be very popular. **This program was expanded into Mendocino County libraries in May 2018.**

7) The **Education Program for Schools** was initiated in the Fall of 2017 and ran through the school year.

8) A **Demand Charge Reduction Program** was implemented to assist commercial customers in reducing their bills.

9) A **market assessment** of the potential for heat pump water heaters in SCP territory was completed.
10) A program to incentivize the purchase of EV’s by local non-profits has resulted in 3 EV’s being placed. This program will continue in FY 2018/19.

11) A program designed to promote low income solar installations on homes was initiated in partnership with Grid Alternatives. This will take the form of a direct mailing to qualifying residents of Sonoma and Mendocino Counties.

12) The Advanced Energy Rebuild program has been created in cooperation with PG&E and the BAAQMD to incentivize those rebuilding their homes after the 2017 fires to do so in an energy efficient manner.

13) SCP was awarded a $9.8M grant from the CEC to promote energy efficiency in the residential built environment.
New Actions

SCP is including the following new activities in the plan:

1) Implementation of a workplace charging program designed to place 10-20 chargers at strategically located employment centers.
2) Development of an on-bill financing mechanism to simplify residential and commercial customers in upgrading energy efficiency retrofits to their buildings.
3) Exploration of the potential of a program to promote energy efficiency in the indoor agricultural industry.
4) Implementation of a Demand Response program for SCP customers.
5) Development of a program to incentivize residential storage applications in response to “time of use” pricing.
6) Implementation of a CEC grant that explores energy efficiency in the “built” environment.
7) Implementation of the Advanced Energy Rebuild incentive program
8) A program to incentivize the use of EV’s by local non-profits
9) A program to promote the SASH program which provides free residential solar systems to low income residents.
Program Strategies and Levels of Action

This plan identifies eight program strategies:

- Program Strategy 1. Promote the Use of Electric Vehicles in Transportation
- Program Strategy 2. Promote Fuel Switching in New and Existing Building Stock
- Program Strategy 3. Identify and Apply for External Funding to Support Programs
- Program Strategy 4. Promote the Aggregation of Loads and Resources
- Program Strategy 5. Support the Integration of Distributed Energy Resources in SCP’s Territory
- Program Strategy 7. Test and Evaluate the Use of New Technologies
- Program Strategy 8. Promote Public Education Involving Energy Efficiency and Fuel Switching

<table>
<thead>
<tr>
<th>Immediate Action: Ongoing or to be initiated within the next year:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Required by regulatory or other deadlines;</td>
</tr>
<tr>
<td>2. Other strategies or actions are dependent on outcome;</td>
</tr>
<tr>
<td>3. Achievable in the near-term;</td>
</tr>
<tr>
<td>4. Funding and resources are available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Near Term Action: To be initiated within one to three years:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Anticipated, yet not immediate, deadline;</td>
</tr>
<tr>
<td>2. Funding is proposed;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Long-term Action: No defined start date for action, likely longer than three years:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Not enough information to proceed at this time;</td>
</tr>
<tr>
<td>2. Lower priority;</td>
</tr>
<tr>
<td>3. Funding not available</td>
</tr>
</tbody>
</table>

This plan identifies three levels of action:
Program Strategy One

Promote the Use of Electric Vehicles in Transportation

This strategy fulfills the following goals of SCP's JPA:

   a) Reducing greenhouse gas emissions in Sonoma County and neighboring regions and;
   d) Stimulating and sustaining the local economy.

Immediate Action One:
Implement Drive Evergreen Phase 3

   Project: Drive EverGreen Phase 3
   Status: Phase 2 of Drive EverGreen was active until November 30, 2017. A full evaluation of the program was published in April 2018. Drive EverGreen Phase 3 will be active from August through October 2018.
   Involved Parties: CSE, RCPA, Local Car Dealerships

Immediate Action Two:
Implement Workplace Charging Program

   Project: Develop workplace charging program
   Status: Contract with CSE has been executed for program management. Site host analysis is currently underway to evaluate the costs and benefits of installing up to 10 Level 2 charging stations at each site.
   Involved Parties: CSE, RCPA, County of Sonoma, Basin Street Properties, Santa Rosa Junior College

Immediate Action Three:
Continue to Provide Free Charging Stations

   Project: Provide free charging stations to eligible SCP customers
   Status: Contract with eMotorWerks to continue free charging station program through June 2019.
   Involved Parties: eMotorWerks
Immediate Action Four:
Provide electric mobility solutions for local non-profits

Project: Identify local non-profits that provide transportation services and incentivize their use of electric vehicles

Status: A list of potential non-profits has been created and outreach has begun to gauge interest.

Involved Parties: RCPA, local non-profits

Immediate Action Five:
Promote the use of Electric Vehicles in TNC operations

Project: Develop incentive program for TNC drivers

Status: Discussions are underway on how best to incentivize drivers to use EV’s when driving for TNC’s,

Involved Parties: RCPA, Uber, Lyft, Rusty Klassen

Near Term Action One:
Promote the use of Electric Vehicles in Commuting

Project: Electric Commute

Status: In discussion with RCPA and Rusty Klassen regarding use of electric vehicles for commute purposes.

Involved Parties: RCPA, Rusty Klassen

Near Term Action Two:
Promote the use of Electric Vehicles in taxi companies

Project: Develop incentive program for taxi drivers

Status: Discussions are underway on how best to incentivize taxi companies to use EV’s.

Involved Parties: RCPA, Rusty Klassen, RCPA
**Near Term Action Three:**
Investigate Expansion of Free Charging Station Program to Multifamily Properties

**Project:** Develop incentive program/resources for multifamily property owners and residents interested in installing charging stations. Serve as a single point of contact in directing larger properties (capable of hosting 20+ chargers) to PG&E program.

**Status:** Contract has been executed with CSE to provide technical oversight for the program. An RFP was issued to select program vendor(s), with 14 responses submitted.

**Involved Parties:** BayREN, PG&E CSE, BAAQMD

**Long Term Action One:**
Promote the use of All-Electric Autonomous Vehicles in SCP Territory

**Project:** Develop relationships with autonomous vehicle developers and work closely with them to develop services within the SCP service area.

**Status:** In concept phase

**Parties Involved:** Rusty Klassen, RCPA

**Long Term Action Two:**
Foster electric vehicle adoption in low-income multifamily properties

**Project:** Collaborate with low-income multifamily developers and stakeholders to identify structures that will promote adoption of electric vehicles in this difficult market sector.

**Status:** In concept phase

**Parties Involved:** Rusty Klassen, RCPA

**Long Term Action Three:**
Substitute heavy duty electric vehicles for public transit and private delivery services

**Project:** Collaborate with public transportation agencies in all jurisdictions and private delivery companies to identify avenues in which SCP can assist in the adoption of heavy duty electric vehicles.

**Status:** In concept phase

**Parties Involved:** Rusty Klassen, RCPA, city and county transit agencies, City of Santa Rosa
**Program Strategy Two**  
*(PS2)*

Promote Fuel Switching in New and Existing Building Stock

This strategy fulfills the following goals of SCP’s JPA:

- *Reducing greenhouse gas emissions in Sonoma County and neighboring regions;*
- *Carrying out programs to reduce total energy consumption and;*
- *Stimulating and sustaining the local economy, including by developing or promoting local distributed energy resources.*

**Immediate Action One:**  
Implement the CEC Grant

**Project:** Implementation of the CEC Grant will ???

**Status:** A contract for the grant has been completed with the CEC. RFQ’s for architectural services are being evaluated. Sites for the Marketplace are being evaluated.

**Involved Parties:** Frontier Energy, RCPA, County of Sonoma ESD

**Immediate Action Two:**  
Investigate Potential for an On-Bill Financing Program within SCP’s Territory

**Project:** Hire a consultant to determine the feasibility of on-bill financing.

**Status:** A feasibility study was completed to analyze the potential for on-bill financing. This Action will be incorporated into the CEC grant above.

**Involved Parties:** Frontier Energy, Energy Efficiency Institute
Immediate Action Three:
Perform a Market Assessment of Indoor Agriculture in SCP Territory

**Project:** Work with customer service team to convene a working group of stakeholders in the indoor agriculture sector. Work with DNV GL to implement pilot projects looking at the potential for larger program offerings.

**Status:** A contract with DNV GL to assist with pilot program development and implementation was completed. Outreach to the cannabis industry is on-going.

**Involved Parties:** DNV GL, SCP Customer Service

Immediate Action Four:
Implement the Advanced Energy Rebuild Incentive Program

**Project:** Partner with PG&E and BAAQMD on an incentive program that will accelerate the adoption of highly efficient and all electric homes in the fire rebuild zones

**Status:** The AER incentive is available to parties rebuilding in the burn zones of Sonoma and Mendocino counties.

**Involved Parties:** PG&E, BAAQMD, Production Builders, City of Santa Rosa, County of Sonoma

Near Term Action One:
Develop an Education Program around the use of Heat Pumps for HVAC and Water Heating

**Project:** Based on Market Assessment, develop an education program that will prepare contractors, retailers and the public on the advantages of using heat pump water heaters. Work with local supply houses to ensure product availability.

**Status:** SCP is working with parties below to develop a yearlong training calendar which includes education on heat pumps.

**Involved Parties:** CSE, Sonoma County, RCPA, MCE, PG&E
Near Term Action Two:
Develop Tools and Program Models to Assist Property Owners in Better Understanding the Financial Impacts of Fuel Switching

**Project:** Develop a tool/program model that helps customers evaluate the potential for energy efficiency/fuel switching, electric vehicles, and solar photovoltaics over short and long terms.

**Status:** In concept phase.

**Involved Parties:**

Long Term Action One:
Participate with Local Jurisdictions on Ordinances that Encourage Efficiency Upgrades in Local Buildings

**Project:** Develop standard “Reach Ordinances” that local jurisdictions can consider.

**Status:** SCP worked with Davis Energy Group to develop an all-electric reach code. This code informed the AER program

**Involved Parties:** Davis Energy Group, RCPA, SCTA, Local cities and towns

Long Term Action Two:
Interface with the CPUC and Stakeholders on Review of the Three-Prong Test

**Project:** The CPUC’s three-prong fuel substitution test, developed in the 1990s, determines what fuel substitution projects can receive utility customer-funded energy efficiency incentives and support. Industry groups led by NRDC and the Sierra Club are seeking clarification on and potential changes to the test to allow more program activities that reduce the use of natural gas and propane.

**Status:** NRDC has filed a motion seeking review and modification of the test.

**Involved Parties:** NRDC, Sierra Club, CPUC
Program Strategy Three  

(PS3)

Identify and Apply for External Funding to Support Programs

This strategy fulfills the following goals of SCP’s JPA:

  c. Carrying out programs to reduce total energy consumption and;
  d. Stimulating and sustaining the local economy, including by developing or promoting local distributed energy resources.

Immediate Action One:
Monitor Existing Funding Channels for Potential Opportunities

  Project:  Monitor funding channels such as the DOE, CEC, CPUC, Air Districts, etc. for potential partnership opportunities.
  Status:   SCP was awarded a $9.8M grant which is described in more detail in Program Strategy Two. We will continue to monitor grant opportunities and apply as appropriate.
  Involved Parties:  TBD

Near Term Action One:
Evaluate Cost-Effectiveness of Programs that Could Scale with CPUC Energy Efficiency Funds

  Project:  As a part of design and evaluation of any energy saving programs, calculate cost-effectiveness using CPUC metrics. Implementation of the CPUC metrics will assist the programs team evaluate which programs are good candidates for scaling using CPUC energy efficiency funds.
  Status:   Ongoing. A blanket contract for services has been negotiated with several consultants that specialize in evaluation, measurement, and verification (EM&V).
  Involved Parties:  DNV GL, Frontier Energy, Tierra Resources
Program Strategy Four

Promote the Aggregation of Loads and Resources

This strategy fulfills the following goals of SCP's JPA:

b. Providing electric power and other forms of energy to customers at a competitive cost;

c. Carrying out programs to reduce total energy consumption;

d. Stimulating and sustaining the local economy, including by developing or promoting local distributed energy resources; and

e. Promoting long-term electric rate stability, energy security, reliability, and resilience.

Immediate Action One:
Contract with a “Super” Aggregator to bundle Technical Aggregators to bid into the CAISO DRRS system

Project: Develop a contract with a “Scheduling Coordinator” to aggregate the “technical aggregators” operating in SCP territory and manage bidding of a demand response program into the CAISO DRRS. This process is necessary to ensure SCP remains in compliance, but also to maximize the value of the various resources available to the public.

Status: Contract is signed. Work is proceeding toward a CAISO market test in mid 2018. This effort will dovetail with the CEC grant work described in Program Strategy Two

Involved Parties: Olivine, eMW
Program Strategy Five

Support the Integration of Distributed Energy Resources in SCP’s Territory

This strategy fulfills the following goals of SCP’s JPA:

a. Reducing greenhouse gas emissions in Sonoma County and neighboring regions;

b. Providing electric power and other forms of energy to customers at a competitive cost;

d. Stimulating and sustaining the local economy, including by developing or promoting local distributed energy resources; and

e. Promoting long-term electric rate stability, energy security, reliability, and resilience

Immediate Action One: Continue Implementing ProFIT

Project: ProFIT is SCP’s Feed in Tariff program offering a fixed price for locally developed solar projects under 1MW. Applications are received on an on-going basis and are capped at approximately 6 MW of power.

Status: ProFIT has six developments under contract, two of which began construction in 2017. Five projects are expected to come online in 2018. The program is almost fully subscribed with enough budget for a system approximately 400 kW in size still available. SCP has determined that there is no more room in our procurement plan for additional projects.

Involved Parties: Coldwell Solar, Sunniva Systems,

Immediate Action Two: Support Solar Sonoma County in providing assistance to SCP customers installing on-site renewable generation

Project: Solar Sonoma County provides support to local residents who wish to install renewable energy systems. SSC provides impartial advice regarding siting, financing and contractor selection.

Status: Contract in place with CCP/Solar Sonoma County

Involved Parties: Solar Sonoma County, CCP
**Immediate Action Three:**
Support the efforts of Grid Alternatives to provide solar to low income residents

**Project:** Grid Alternatives is a non-profit that implements the State of California’s SASH program. SASH provides residential solar to qualified residents at no cost. SCP will create a direct mailer to those residents in Sonoma and Mendocino Counties that qualify for SASH.

**Status:** A direct mailer is being drafted and qualified customers are being identified.

**Involved Parties:** Grid Alternatives-

**Immediate Action Four: Demand Charge Reduction Program**

**Project:** Develop a customer service program to identify clients with high demand charges. Customers would be educated regarding methods to reduce demand charges and given the option of being connected with a company that specializes in this area.

**Status:** An RFP was circulated to battery storage firms who perform this type of work. STEM was selected through this competitive process. SCP's Customer Service Department is connecting STEM with SCP customers who may benefit from demand charge reduction.

**Involved Parties:** STEM

**Near Term Action One:**
Determine How Best to Add Storage to SCP's ProFIT Program

**Project:** Develop a scope of work and solicit a consultant’s proposal to determine the best practices necessary to incorporate energy storage into SCP’s existing ProFIT program.

**Status:** No work completed to date

**Involved Parties:**
Near Term Action Two:  
Develop a Residential Battery Storage Program

**Project:** In cooperation with Customer Service, develop a residential battery storage program that is designed to offset any negative impacts of the switch to Time of Use billing.

**Status:** An RFI was circulated and interviews were held with several battery companies. It is most likely that this effort will be managed through the CEC grant process described in Program Strategy Two.

**Involved Parties:** CEC, Sonnen, Tesla,
Program Strategy Six

Support the Transition to Zero Net Energy Building Codes and Practices

This Strategy fulfills the following goals of SCP's JPA:

a. Reducing greenhouse gas emissions in Sonoma County and neighboring regions;

c. Carrying out programs to reduce total energy consumption and;

d. Stimulating and sustaining the local economy

Immediate Action Two:
Provide Assistance to Commercial Customers in Optimizing Energy Efficiency

Project: Enter into contracts with two consultants to provide assistance to Commercial customers in planning and implementing energy efficiency upgrades on an as-needed basis. Their services will be provided to Commercial customers as requested. Consultants will be selected to provide a broad base of experience in commercial energy efficiency.

Status: Contracts are executed. The customer service team is coordinating efforts with customers.

Parties Involved: Gilleran Energy Management, New Building Institute

Near Term Action One:
Model Development

Project: In cooperation with a local developer, incentivize a small development (10-20 single family homes) to construct all electric, ZNE homes. Reserve one home for several months as a showcase.

Status: In concept phase.

Parties Involved:
**Near Term Action Two:**

Explore Program Models that Incentivize Developers to Choose Efficient, Electric Equipment

- **Project:** In cooperation with local planning departments investigate opportunities to engage developers and provide technical assistance/incentives to select low/no-carbon solutions.
- **Status:** A list of potential contractors to work on this project has been established.
- **Parties Involved:**

**Near Term Action Three:**

Prepare Educational Materials and Conduct Workshops for local Designers and Contractors

- **Project:** Collaborate with the North Coast Builder's Exchange on a series of articles and workshops designed to educate local contractors and design professionals regarding upcoming ZNE codes
- **Status:** A draft article introducing a series of workshops has been drafted and submitted for publication.
- **Involved Parties:** NCBE
Program Strategy Seven
(PS7)

Test and Evaluate the Use of New Technologies

This strategy fulfills the following goals of SCP’s JPA:

a. Reducing greenhouse gas emissions in Sonoma County and neighboring regions;

b. Providing electric power and other forms of energy to customers at a competitive cost;

c. Carrying out programs to reduce total energy consumption and;

d. Stimulating and sustaining the local economy, including by developing or promoting local distributed energy resources.

Near Term Action One:
Study Potential for Micro-Grids in SCP Territory

Project: Identify areas for potential micro-grids by analyzing the distribution network in SCP territory.

Status: In concept phase

Involved Parties:

Near Term Action Two:
Investigate the use of Bio-Mass Power Generation in SCP Territory

Project: Identify bio-mass feed stock supplies in SCP territory (particularly Mendocino County) as well as small scale bio-mass conversion technologies that may provide cost effective local power generation.

Status: Bio-mass analysis for Sonoma County completed by SCWA several years ago.

Involved Parties: SCWA
Program Strategy Eight
(PS8)

Promote Public Education Involving Energy Efficiency and Fuel Switching

This strategy fulfills the following goals of SCP’s JPA:

a. Reducing greenhouse gas emissions in Sonoma County and neighboring regions; and

e. Promoting long-term electric rate stability, energy security, reliability, and resilience.

Immediate Action One:
Continue the SWITCH Program

Project: SCP has for several years funded the SWITCH Program which provides an electric car “kit” which students can assemble and disassemble in order to learn how electric cars are put together. This familiarity with electric vehicles will make them more likely to incorporate EV’s into their lives as well as the potential for students to enter the EV industry at the local dealership level.

Status: A funding agreement to extend the program has been completed.

Involved Parties: CTE, SWITCH

Immediate Action Two:
Create an Education Program for Schools in SCP Territory

Project: Contract with SCWA to expand their existing education program to include energy efficiency, fuel switching and climate change.

Status: Contract is in place and curriculum has been developed. SCP is coordinating with SCWA on materials and branding. SCWA implemented the education program for the 2017/18 school year.

Involved Parties: SCWA
**Immediate Action Three:**
Continue the DIY Tool Kit Program and Expand Program Offerings to Mendocino County

**Project:** SCP has been funding the DIY Toolkit Program which provides a selection of energy and water saving devices that can be checked out from local libraries.

**Status:** After a successful pilot, the program was expanded from 11 kits in rotation to 30 kits. Program staff has negotiated the expansion of the program to Mendocino county libraries.

**Involved Parties:** Sonoma County General Services Department (Sonoma County only), Sonoma County Library, County of Mendocino Library, Sonoma County Water Agency (Sonoma County only)
Summary of Actions

Immediate Actions:

- Implement Drive EV Phase 3 (PS1)
- Implement Workplace Charging Program (PS1)
- Continue to Provide Free Charging Stations (PS1)
- Provide electric mobility solutions for local non-profits (PS1)
- Promote the use of Electric Vehicles in TNC operations (PS1)
- Implement the CEC Grant (PS2)
- Investigate Potential for an On-Bill Financing Program in SCP’s Territory (PS2)
- Perform a Market Assessment of Indoor Agriculture in SCP Territory (PS2)
- Implement the Advanced Energy Rebuild Incentive Program
- Monitor Existing Funding Channels for Potential Opportunities (PS3)
- Contract with Demand Response Technical Aggregators to Operate in SCP Territory (PS4)
- Contract with a “Super” Aggregator to bundle Technical Aggregators to bid into the CAISO DRRS system (PS4)
- Continue Implementing ProFIT (PS5)
- Support Solar Sonoma County in providing assistance to SCP customers installing on-site renewable generation (PS5)
- Support the efforts of Grid Alternatives to provide solar to low income residents (PS5)
- Demand Charge Reduction Program (PS5)
- Provide Assistance to Commercial Customers in Optimizing Energy Efficiency (PS6)
- Continue the SWITCH Program (PS8)
- Create an Education Program for Schools in SCP Territory (PS8)
- Continue the DIY Tool Kit Program and Expand Program Offerings to Mendocino County (PS8)

Near Term Actions:

- Promote the use of Electric Vehicles in Commuting (PS1)
- Promote the use of Electric Vehicles in taxi companies (PS1)
- Investigate Expansion of Free Charging Station Program to Multifamily Properties (PS1)
- Develop an Education Program around the use of Heat Pumps for HVAC and Water Heating (PS2)
- Develop Tools and Program Models to Assist Property Owners in Better Understanding the Financial Impacts of Fuel Switching (PS2)
- Evaluate Cost-Effectiveness of Programs that Could Scale with CPUC Energy Efficiency Funds (PS3)
• Determine How Best to Add Storage to SCP’s ProFIT Program (PS5)
• Develop a Residential Battery Storage Program (PS5)
• Model Development (PS6)
• Explore Program Models that Incentivize Developers to Choose Efficient, Electric Equipment (PS6)
• Prepare Educational Materials and Conduct Workshops for local Designers and Contractors (PS6)
• Study Potential for Micro-Grids in SCP Territory (PS7)
• Investigate the use of Bio-Mass Power Generation in SCP Territory (PS7)

**Long Term Actions:**

• Promote the use of All-Electric Autonomous Vehicles in SCP Territory (PS1)
• Foster electric vehicle adoption in low-income multifamily properties (PS1)
• Substitute heavy duty electric vehicle adoption for public transit and private delivery services (PS1)
• Participate with Local Jurisdictions on Ordinances that Encourage Efficiency Upgrades in Local Buildings (PS2)
• Interface with the CPUC and Stakeholders on Review of the Three-Prong Test (PS2)