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Agenda

Resource Management and Climate Protection Committee (RMCP)

Date: Wednesday, June 27, 2018

Time: 2:00 p.m. to 4:00 p.m.

Location: 555 County Center – 5th Floor, Conference Room 1
Redwood City, CA 94063

1. Introductions
2. Public Comment
3. Approval of Minutes from February 21, 2018, March 21, 2018, and April 18, 2018 Committee meetings (Kim Springer – Committee Staff) Action p. 1-13
4. Presentation on Peninsula Advanced Energy Community Phase 1 delivered and proposed Phase 2 (Malini Kannan, Clean Coalition) Presentation p. 14-26
5. Bay Area Water Supply and Conservation Agency update on current water supply and conservation (Adrienne Carr, BAWSCA) Presentation, Discussion p. 27
6. Update and discussion on San Mateo County Energy Strategy 2025 content, DNV GL scope of work, stakeholder assignment effort, and project schedule (Kim Springer – Committee Staff) Presentation/Discussion p. 28-31
7. Report on State Energy Efficiency Collaborative Forum (Kim Springer – Committee Staff) Presentation/Discussion p. 32-46
8. Committee Member Updates
9. Next Meeting Date: July 18, 2018

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Minutes

Resource Management and Climate Protection Committee (RMCP)

Date: Wednesday, February 21, 2018

In Attendance:

Maryann Moise Derwin, Committee Vice Chair, Mayor Portola Valley*

Deborah Gordon, Committee Chair, Woodside Town Council*

Rick DeGolia, Town of Atherton*

Adrienne Carr, BAWSCA*

Don Horsley, County Supervisor*

Beth Bhatnagar, SSMC Board Member*

Kim Springer, County Office of Sustainability

Andrea Chow, County Office of Sustainability

Rachael Londer, County Office of Sustainability

Dave Pine, County Supervisor*

Michael Barber, Supervisor Pine's Office

Diane Papan, Councilmember, San Mateo*

Janet Borgens, City Council of Redwood City

Sandy Wong, C/CAG

Betty Seto, DNV GL

Not in attendance:

Pradeep Gupta, South San Francisco City Council*

Ortensia Lopez, El Concilio of San Mateo County*

Bill Chiang, PG&E*

Robert Cormia, Professor Foothill-DeAnza*

* Committee Member (voting)

1. Introductions

Committee members and guests made introductions.

2. Public Comment

There were no public comments.

PUBLIC NOTICING: All notices of C/CAG Board and Committee meetings are posted at:
San Mateo County Transit District Office, 1250 San Carlos Ave., San Carlos, CA.

3. Approval of Minutes from January 17, 2018 Committee meeting **Action**

Horsley/Derwin - Passed

4. Presentation on Energy Efficiency Program Updates for Member Agencies in San Mateo County **Presentation**

Andrea Chow, County Office of Sustainability gave a presentation on the BayREN Energy Home Upgrade program and the San Mateo County Energy Watch, and the customer segments they each serve. The Committee is familiar with the SMCEW program, and Chow presented more details on the Single-family and Multi Family Upgrade programs. She also presented the Codes and Standards, and other elements of the program under BayREN. The presentation included outcomes since FY 2013, and a review of program outcome update reports that will be provided to cities in San Mateo County, served by these two programs.

Gordon: Does this report show the actual savings in kWh as program results?

Chow: It's not currently included, but we can provide that information.

Chow explained that the report would be going out to staff at cities shortly.

5. Presentation on DNV GL's Global and Regional Forecast of the Energy Transition to 2050 **Presentation**

Betty Seto presented global work on the part of researchers, independently at DNV GL, a prediction of likely global energy markets through 2050, The Energy Transition Outlook. The report considers where we were in 2015 and projects into the future. The report is one piece of a total of four reports on different energy markets, the Transition document being one of the four. DNV GL has 13,000 employees worldwide, and so is a large consultant in the energy sector.

Gordon: With 13,000 employees, what markets does DNV GL serve?

Seto: Advisory service, due diligence, renewable energy project valuation, independent engineering, climate and energy programs, and some CEQA and environmental compliance.

In contrast to some other studies, this report is about the most likely future of energy worldwide. The prediction is environmentally positive, highlighting population and GDP will continue to increase worldwide, but still, energy and GHG emissions peak around 2030 and begin to decrease. The analysis is based on a model which includes multiple inputs.

A few of the outcomes show that, for instance, EV will reach cost parity around 2020. In the building sector, the energy use per square foot will continue to decrease at about 1.2% per year. World energy demand is predicted to flatten out over time through 2030. There are other indicators that lead to the conclusions in the report.

Gordon: does the model include transition to electric and other alternative fuels.

Seto: Yes, it's predicted that there will be a steady transition, and fuel switching in other sectors is also expected, and energy use worldwide is expected to be carbon free by 2050.

DeGolia: Do you consider nuclear and hydro to be carbon free.

Seto: Yes

Gordon: Are you expecting countries, even China to move away from Coal without going through a

long-term phase of nuclear?

Seto: The model says that we will even be moving away from nuclear as a carbon-free energy source by 2050.

Seto shared that all of this is good news, but there is some bad news related to the two-degree C goal under the Paris Agreement. There is a range in the prediction, but the model predicts that there will be an overshoot of that two-degree limit globally.

Seto moved on to explain both the national and state outcomes from the research. The research shows that the duck curve is exacerbated by the addition of additional renewables and the increase use of EVs. This is an issue that will need to be addressed. When DNV GL mapped the existing CA policy energy and climate policy goals to national goals, projected North American outcomes pretty much matched the CA goals.

Gordon: Do you do sensitivity analysis on your results, and have you looked to see if something disruptive changed, how would it change the results?

Seto: I don't have an answer to that, but we did look at learning curves for adoption.

Gordon: It would be good to know because it could greatly affect the time frames in the results.

Seto: I believe that change is battery density, for instance, was included in the model, and this is where the scenario analysis is most useful.

The model is set up and the plan is to run the model again in a couple of years.

DeGolia: Battery is a huge issue and where batteries are placed and how they are used has a huge impact. For instance, we want to hold off on the investment of batteries if the density is going to change. The question is where to encourage investment. Also, what are the best DERs and where do we focus on energy generation. We need to understand the costs and benefits.

Gordon: We need to look at what is the best in terms of battery ownership.

DeGolia: We should also look at used auto batteries as a resource for local renewable. We should do some analysis on these topics.

6. Discussion about RMCP Committee priorities for calendar year 2018 Discussion

Kim Springer introduced a discussion on potential projects that the Committee could undertake in 2018. Springer suggested that, regarding the Energy Strategy, it may make sense to update the document in five-year cycles given the uncertainty in energy technologies. Springer also mentioned the Governor's Conference.

Comments were:

Papan: Does the Energy Strategy need to have the same elements?

Springer: Not necessarily.

Papan: I think we should consider exploring the planning and investment in storage.

Gordon: I agree that this should be considered and evaluated with San Mateo County specifically in mind.

Pine: Should we look at developing the next strategy out to five years, or maybe further?

Springer: The baseline has changed so much. The first round was written by a consultant, and we couldn't even mention climate. We should probably involve more stakeholders around grid issues and storage, and DER.

DeGolia: It's a very provocative idea to be considering these topics and building a plan around it.

Gordon: It makes sense to consider the economics in these issues, like DNV GL did in their analysis.

DeGolia: We completed this 8-9 years ago. No doubt we need a good energy strategy and we now have PCE, and there is PG&E. Maybe a first step would be to have a discussion between PG&E and PCE and this Committee.

Springer suggested that at the next meeting, staff come back with a work plan to help move the effort forward.

About the Governor's Climate Summit, the Committee considered the letter and suggested it be sent to city council members, city managers, and SAMCEDA staff.

7. Review and approve RMCP Committee meeting dates for calendar year 2018 Action

The Committee moved to include all monthly meeting dates for 2018: Derwin/Carr – Passed.

Springer said he would post the 2018 meeting dates and send out calendar dates to the committee.

8. Committee Member Updates

Committee member Pine provided information on the Water Summit scheduled for March 30th at Canada College.

9. Next Meeting Date: March 21, 2018

All presentations have been posted on the C/CAG RMCP website.

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Resource Management and Climate Protection Committee (RMCP)

Minutes of March 21, 2018 Meeting

In Attendance:

Dave Pine, County Supervisor*
Diane Papan, Councilmember, San Mateo*
Pradeep Gupta, South San Francisco City Council*
Maryann Moise Derwin, Committee Vice Chair, Mayor Portola Valley*
Rick DeGolia, Town of Atherton*
Adrienne Carr, BAWSCA*
Michael Barber, Supervisor Pine's Office
Keith Malone, California Fuel Cell Partnership
Kim Springer, County Office of Sustainability
Danielle Lee, County Office of Sustainability
Andrea Chow, County Office of Sustainability

Not in attendance:

Deborah Gordon, Committee Chair, Woodside Town Council*
Don Horsley, County Supervisor*
Bill Chiang, PG&E*
Robert Cormia, Professor Foothill-DeAnza*
Beth Bhatnagar, SSMC Board Member*
Ortensia Lopez, El Concilio of San Mateo County*

* Committee Member (voting)

1. Introductions
2. Public Comment
3. Approval of Minutes from February 21, 2018 Committee meeting: No Quorum – postpone to following meeting

PUBLIC NOTICING: All notices of C/CAG Board and Committee meetings are posted at:
San Mateo County Transit District Office, 1250 San Carlos Ave., San Carlos, CA.

4. Presentation on California plans for deployment of Hydrogen vehicles

Keith Malone delivered a presentation on the California Fuel Cell Partnership (CaFCP), the planned deployment of Hydrogen fueling infrastructure, and expected growth of HFC vehicles in CA.

CaFCP is a public private partnership since 1999 with a variety of public agencies (local, regional, federal) and fuel cell operators and manufacturers. They provide a variety of services to members including emergency response training, legislative outreach; with the mission of collaborating to advance fuel cell technology.

Electric Vehicles (EVs) have either battery or fuel cell technologies. Fuel cells are comprised of thin metallic wafers, stacked like a loaf of bread and range in size from smaller transportation fuel cells to larger fuel cells that provide combined heating and power for homes. Fuel cells can rely on a variety of fuels, for Fuel Cell Electric Vehicles they rely on Hydrogen.

Gupta: What is the average life expectancy of a fuel cell?

Malone: Roughly 5,000 hours, 100,000-150,000 miles of life expectancy.

Gupta: What wears out in a fuel cell after 5,000 hours?

Malone: Probably material builds up on the plates, but not completely sure.

Pine: What is the main powering mechanism in the FCEV?

Malone: The vehicle is fuel cell dominant, meaning the fuel cell provides electricity directly to the drive system, and the battery is used to balance energy supply.

Fuel Cell Vehicles achieve roughly 350 miles on a fill up; New Fuel Cell vehicles include the Toyota Murai, Honda Clarity, and Mercedes. Others, soon to come to market with include Nissan and Huyandi

Gupta: Is there a dominant manufacturer of the fuel cells themselves?

Keith: Most companies develop and work on their fuel cells in house, with the exception of Volkswagen that uses Ballard Power Systems in Canada.

The goal for California is to install 100 stations by 2025, with Hydrogen station most likely to be installed at existing gas stations.

DeGolia: Who pays for the pumps?

Malone: At this point, Hydrogen stations are 95% funded by the State of California, and there is currently a solicitation open from the CEC for new stations.

Gupta: Have the potential hazards with pumping hydrogen been resolved?

Malone: CaFCP focuses on firefighting training and emergency response. Hydrogen escapes quickly, rising into the air at a high speed, unlike gasoline, which pools. Fuel Cell Vehicles have undergone testing to ensure that the fuel cells are difficult to penetrate.

Lee: What is the timing for the development of a hydrogen station?

Malone: 18-24 months for design.

Pine: How do these station locations get chosen?

Malone: Funders look for the highest concentration of early Hydrogen adopters. Automakers have also influenced the station locations.

Michael: How much is a typical fill up?

Malone: \$16/kg at about 4-5kg per tank, so around \$70 per fill up.

DeGolia: How does a gallon of gasoline compare in terms of the amount of energy?

Malone: 1kg equals about 1 gallon of gas in terms of energy.

Currently, 21 Hydrogen buses are in services and 32 more are funded. Some users are: AC Transit and Orange County Transportation authority. Trucks are still a work in progress but can also be run on Hydrogen.

Hydrogen is on a renewable pathway CA requires 33% of hydrogen fuel to be renewable?

Barber: At \$16/kg; what efforts are upcoming to make this a more affordable/viable option

Malone: Currently 4000 vehicles on the road; Production volume should help to drive down costs.

Barber: Would you say that operations and maintenance is less or more than standard cars?

Malone: expectation that since there are less moving parts, should be cheaper but fuel cells are not cheap; e.g., brake system maintenance is cheaper since there is a reliance on regenerative braking systems.

The presentation for this item has been posted on the C/CAG RMCP website.

5. Presentation of a Work Plan for development of San Mateo County Energy Strategy 2025 for review and comment

As a follow-up to the February meeting, Kim Springer prepared and presented a Workplan for development of the San Mateo County Energy Strategy 2025. Tentative timeline supports the meeting of working groups, RMCP committee feedback and city feedback during RICAPS meetings. If the work plan is followed, the updated San Mateo County Energy Strategy 2025 could begin to be presented for adoption by each city and town starting April 2019.

Gupta: The cities are the audience for the document, document should address issues that the cities face (e.g., microgrids, small nuclear)

Springer: With the original Energy Strategy, we focused on educating city staff and councils, so that any new policy worked with the goals and strategies outlined in the document.

Pine: Need to address PCE; does this address adoption of electric vehicles and clean transportation?

Springer: Yes, I think you can't talk about energy and the grid any longer without considering this.

As next steps, staff will develop suggested stakeholders for one energy and one water working group, and additional recommendations as a starting point for topics to be covered.

Papan: Suggest an approach where Energy and Watery supply act as substantive topics, but

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leadership, collaboration and economics act as subject areas for each substantive topics.

Pine: There is a need for everyone to look at the existing Energy Strategy, highlight areas that cities/county can collectively work on together

Lee: How do climate action plans and the energy strategy interact? Climate Action Plans should include resilience and adaptation; resilience vs. mitigation.

Springer: The energy strategy is not really a climate action plan, as it doesn't set an emission reduction target.

Gupta: The strategy should focus on existing research to address actual issues?

Springer: I hope that it will also address, resilience of electric grid and critical infrastructure, microgrids, etc.

DeGolia: 2025 is a good target, within reach, CAPs focus on 2025 and 2030. The Strategy should look at County as a whole as opposed to City-level, as a CAP does. Is transportation within the reach of the Strategy?

Springer: Yes, I think it must be included.

Kim said that staff will review the existing Energy Strategy, identify topics for the update, and make some comparisons. Staff will also propose a list of stakeholders.

6. Update on current water supply conditions and recent State actions

Adrienne Carr delivered a presentation on water supply for the SFPUC and recent state actions.

Upcountry precipitation is likely to be above the median by end of week. In an average year, the entire Hetch Hetchy system fills.

Upcountry snow pack is approaching 75% of median due to recent storms but will likely not reach 100%. The total system storage is 73%, normally at 80% but maintenance at Cherry reservoir reduced the amount stored, which brings the average down. Other California reservoirs are at historical average.

In terms of water use, there has been an uptick of water consumption in 2017 since the last year of the drought (2016); outdoor water use rebounded and residential users are generally conserving less throughout the state.

Carr showed a chart of lowest water users in the Bay Area (residential per capita usage and South San Francisco has the lowest use.

The state has been working to enact legislation to make water conservation a way of life in California. 1) Use water more wisely 2) Eliminate Water waste (leak detection) 3) strengthen local drought resilience (Urban water management, drought action plans) and 4) improve agricultural water use efficiency and drought planning.

BAWSCA is helping agencies comply with proposed legislation, including studies of indoor vs. outdoor water usage, a commercial, industrial and institutional (CII) water users audit pilot

program, automated metering infrastructure (AMI) workshops and information sharing, and possible aerial measurements.

AB 1668 and SB 606 are current vehicles for long-term conservation. Legislation has improved but BAWSCA is concerned about a no variance process for agencies with minimal outdoor water use, ongoing costs for landscape area measurement, and administrative challenges.

The presentation for the item has been posted on the C/CAG RMCP website.

7. Update on Governor’s Climate Summit, city information-gathering effort, for comment

Kim Springer delivered an update on the efforts to collect information from cities for making a case for greater participation in the Governor’s Global Climate Action Summit in September 2018 in San Francisco. A letter from C/CAG went out to City Managers and Elected officials, and staff has heard updates from agencies that they are working on collecting this information. Once info is collected, staff will work on how to package the information.

The letter that was sent to the cities is included in the packet for this meeting.

8. Committee Member Updates

9. Next Meeting Date: April 18, 2018 – Redwood City location

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Resource Management and Climate Protection Committee (RMCP)

Minutes of April 18, 2018 Meeting

In Attendance:

Diane Papan, Councilmember, San Mateo*
Pradeep Gupta, South San Francisco City Council*
Beth Bhatnagar, SSMC Board Member*
Adrienne Carr, BAWSCA*
Michael Barber, Supervisor Pine's Office
Kim Springer, County Office of Sustainability
Jeff Aalfs, Town of Portola Valley
Ed Cooney, CSG Consulting

Not in attendance:

Deborah Gordon, Committee Chair, Woodside Town Council*
Maryann Moise Derwin, Committee Vice Chair, Mayor Portola Valley*
Dave Pine, County Supervisor*
Rick DeGolia, Town of Atherton*
Don Horsley, County Supervisor*
Bill Chiang, PG&E*
Robert Cormia, Professor Foothill-DeAnza*
Ortensia Lopez, El Concilio of San Mateo County*

* Committee Member (voting)

1. Introductions
2. Public Comment
3. Approval of Minutes from February 21, 2018 and March 21, 2018 Committee meetings:
No Quorum – postpone to following meeting
4. Presentation on Advanced Energy Community residential microgrid proposal:

PUBLIC NOTICING: All notices of C/CAG Board and Committee meetings are posted at:
San Mateo County Transit District Office, 1250 San Carlos Ave., San Carlos, CA.

Daniel Hamilton gave a presentation on the Oakland EcoBlock, Phase 1 design, CEC advanced Energy Community grant program project.

The project has 25, locations, some with 3 or 4 units per location. The project studied the solar generating capacity of the block, and the energy demand in terms of annual kWh and peak. Storage design is based on mechanical flywheel, which can be used to shave peak load or ancillary loads, etc. The mechanical system has very low lifecycle emissions.

The microgrid design includes a utility loop under the sidewalk, and EV charging infrastructure.

Gupta: how will you change from having so many meters to a single meter for an entire block area.

Hamilton: It requires a discussion with PG&E, but PG&E will not enter into discussions specific to the project until an application is filed with them to complete the necessary engineering. This is something new for PG&E, so the guess is it will take a lot of time to settle on how it will work. This will be one of the most challenging obstacles for the project if it received Phase 2 funding.

Considering the many residential blocks in Oakland, and looking out to 2050, the potential saving is enormous. The block that was studied has very old homes, no wall insulation, etc., so the cost for retrofit is very high, compared to a block of newer homes.

The results are that the Oakland EcoBlock “appears to be technologically and legally permissible, but requires changes to local codes, expansion of finance tools, and cooperative arrangements at the neighborhood level to accomplish.”

The homeowner engagement process was not well designed, and the project partners acknowledged that. If the project does receive Phase 2 funding, there is consideration of having a competition for blocks of residents to select the eventual EcoBlock, so that there is a well-engaged set of property owners.

Gupta: Did the project look at larger scales and including things such as district heating?

Hamilton: It wasn't studied here, but in a larger scale this is something that could be included.

Aalfs: In terms of changing 70 meters into one meter, did PG&E give any indication if they would do that?

Hamilton: They have participated in several meetings, including one on site, and they seemed to be willing to entertain it, but it's yet to be seen. No formal opposition to it formally to the CPUC or otherwise, but this is likely to become a “fight” eventually.

Springer: Just about any project under the Advanced Energy Community grant program will include a microgrid, so this is bound to come up.

Please refer to the slide deck posted here: <http://ccag.ca.gov/committees/resource-management-and-climate-protection-committee/>

5. Update on California Public Utility Commission's Business Plan process, proposed decision:

PUBLIC NOTICING: All notices of C/CAG Board and Committee meetings are posted at:
San Mateo County Transit District Office, 1250 San Carlos Ave., San Carlos, CA.

Kim Springer gave a presentation on the CPUC's proposed decision. The proposed decision came out on April 4th, 2018, and is some 270 pages. The soonest the CPUC can vote to approve the decision is May 31, 2018.

Many local government partners and third-party programs are urging others to become parties to the decision and make comments to the CPUC, especially in terms of cost effectiveness, definition of herd to reach customers, and energy efficiency project requirements. There is, general, a concern that, if adopted, the proposed decision will make is difficult for implementers to serve small commercial customers.

The proposed decision approves the business plan proposals of the IOUs and BayREN, Marin Clean Energy, but not of the LGC-LGSEC.

Aalfs: Will MCE be the sole provider in Marin County?

Springer: Probably not, since PG&E will still be operating in that territory with 3rd party implementers to PG&E.

Gupta: when you say Program Administrators, how does that lay out in terms of territories?

Springer: It varies: if you are talking about the IOUs, it will be their territories, but in the case of MCE, it depends on the program they proposed.

Aalfs: MCE went through great pains to gain access to the ratepayer funds.

The guidelines for programs are being set out from 2018 through 2025, not a full 10 years. Steps after the proposed decision is commented on, and a final decision made, will be to start building implementation plans and structure for contracting.

Discussions are ongoing with other local government partners and REN programs in terms of comments, some of which will be filed jointly and other individually.

The ultimate outcome, in terms of funding for the SMCEW, is still unknown, but will be determined by PG&E based on the final decision outcome and how they piece together their entire portfolio to meet the new requirements.

6. Review and comment on San Mateo County Energy Strategy 2025 draft proposed documents: guiding principles, comparative review and contents, and stakeholder lists:

Kim Springer presented a set of guiding principles, review of content between the original Energy Strategy document and the proposed new document, to the committee for consideration.

Papan: This really goes after what we want to achieve in terms of principles, very well put together.

Gupta: a few of us started with a set of only four bullets and it slowly expanded to this, which I agree is well thought out.

Supervisor Pine asked that staff look at what was covered in the first strategy document and consider what we want to cover in this document. In addition, staff decided to also establish a proposed set of stakeholders for each of water and energy, which was also presented to the committee.

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The committee suggested the addition of a stakeholder in the Energy list to come from the businesses community, perhaps a real estate developer, also adding a topic related to financial benefit of retrofit, LEED and ZNE. Gupta recommended that Transportation be included, such as Hydrogen.

The committee moved to the water section and it was suggested that grey water be included as a topic, and noted that water recycling, even to potable standards, is relatively new but progressing. The committee also noted that a progressive rate structure is also possible, as well as efficient landscape irrigation and groundwater recharge, as additions to the water section of the new document.

In terms of water stakeholders, the Committee suggested RCD and a water technology landscaper or biotech so that businesses is added.

7. Committee Member Updates

There were no committee updates.

8. Next Meeting Date: May 16, 2018 – Bovet Rd, San Mateo

C/CAG AGENDA REPORT

Date: June 27, 2018
To: Resource Management and Climate Protection Committee
From: Malini Kannan, Programs Engineer, Clean Coalition
Subject: Presentation on Peninsula Advanced Energy Community Phase 1 delivered and proposed Phase 2

(For further information contact Kim Springer at 650-599-1412)

RECOMMENDATION

Receive a presentation for discussion on Peninsula Advanced Energy Community Phase 1 delivered and proposed Phase 2.

FISCAL IMPACT

None

BACKGROUND/DISCUSSION

On November 24, 2015, the California Energy Commission (CEC) released a competitive solicitation titled “The EPIC Challenge: Accelerating the Deployment of Advanced Energy Communities” under the Electric Program Investment Charge (EPIC) Program.

The purpose of the solicitation was to fund a competition that will challenge project teams comprised (potentially) of building developers, local governments, technology developers, researchers, utilities, and other project partners to develop innovative and replicable approaches for accelerating the deployment of Advanced Energy Communities.

Clean Coalition, a nonprofit located in Menlo Park, presented to the RMCP Committee on May 18, 2016. It partnered with local governments, PG&E, consultants, and other partners to submit a proposal for the grant, and was selected to receive funding. The proposal is titled Peninsula Advance Energy Community (PAEC). The PAEC region for the grant comprises the southern end of San Mateo County and a broader region incorporating all of San Mateo County and the City of Palo Alto.

Specific components of the project proposal included:

- Streamlining permits, codes, and ordinances
- Financial and business models for Advanced Energy Communities
- Streamlining the connection of AECs to the grid
- Electric vehicle charging infrastructure master plan
- Atherton Civic Center sustainability features
- Solar Siting Survey
- Solar Emergency Microgrids

The grant has two phases, and the above scope, Phase 1, has been completed by Clean Coalition and its various subcontractors to the grant, including County of San Mateo. Clean Coalition also prepared and submitted a proposal for Phase 2, which can be up to \$8M.

The project has a robust website, which houses all the reports and presentations for this project. A link to the project website is provided as an attachment, as well as a print of the PAEC page.

Malini Kannan, Programs Engineer, will provide a presentation on the outcomes of Phase 1 and the proposed Phase 2 of the Peninsula Advanced Energy Community project.

ATTACHMENTS

1. PAEC website front page
2. Link to PAEC website: <http://www.clean-coalition.org/our-work/peninsula-advanced-energy-community/#AboutPAEC>

About PAEC

The Clean Coalition's Peninsula Advanced Energy Community (PAEC) initiative will accelerate the planning, approval, and deployment of an Advanced Energy Community (AEC) in southern San Mateo County. The project is supported by a [broad range of collaborators](#), including Pacific Gas & Electric and numerous local governments.

PAEC provides an opportunity for the Clean Coalition to develop innovative and replicable approaches for accelerating the deployment of AECs. It is anticipated that, based on 25 megawatts (MW) of peak demand reduction, the initiative will save energy consumers over \$25 million, generate over \$100 million in regional economic output, create \$35 million in local wages, and reduce greenhouse gas emissions by nearly 800 million pounds over 20 years.

PAEC is made possible by a grant through the [CEC's Electric Program Investment Charge \(EPIC\) program](#).

Benefits of Advanced Energy Communities

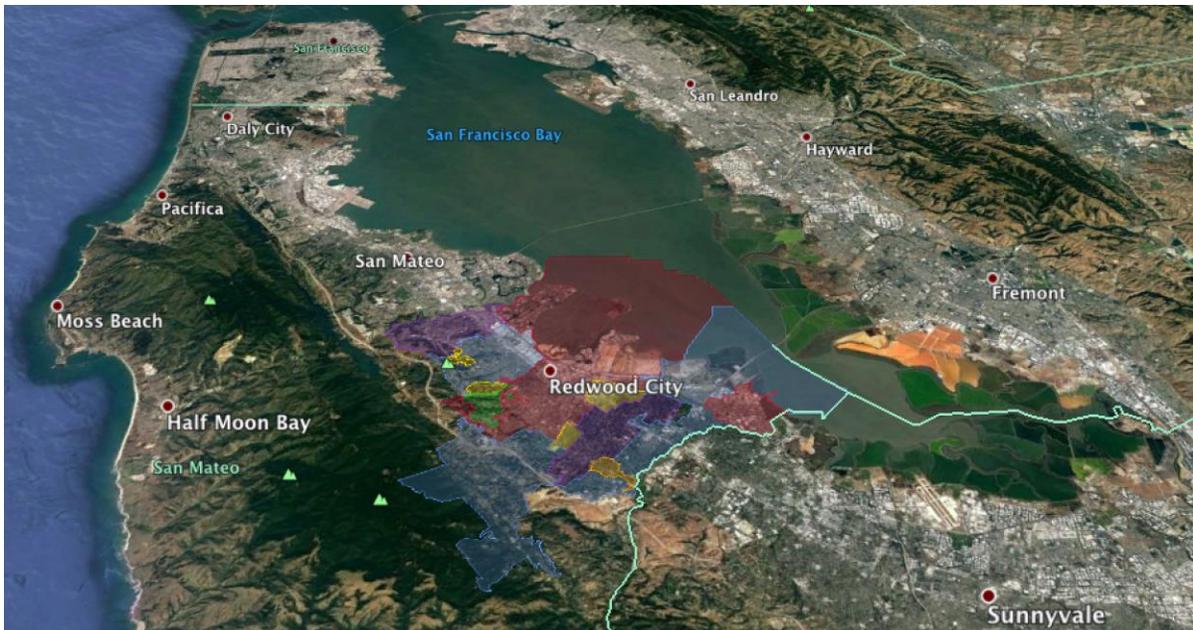
PAEC will showcase the benefits of an AEC, a replicable approach to modernizing the electric grid. AEC projects can provide significant energy, environmental, economic, resilience, and security benefits, but major barriers too often impede their planning and deployment. Finding viable sites, securing project financing, and connecting AEC projects to the grid all represent serious challenges.

The PAEC initiative is designed to overcome these barriers and establish a replicable model that can be used by other communities across California and beyond. The results of PAEC will inform future action by policymakers, municipalities, governmental agencies, utility executives, and other key stakeholders.

Key AEC components in the PAEC initiative:

- Abundant solar electricity, energy storage, and other distributed energy resources (DER)
- Low or zero net energy buildings
- Solar Emergency Microgrids for power management and support of critical facilities during outages
- Charging infrastructure to support the rapid growth of electric vehicles (EVs)

The PAEC region and beyond



PAEC region: southern San Mateo County (highlighted)

The PAEC region encompasses all of San Mateo County, California, including the City of Palo Alto. The core region for the PAEC initiative is the southern portion of San Mateo County, including the cities of Redwood City, Atherton, Menlo Park, and East Palo Alto, and their unincorporated areas.

Many areas in California are experiencing commercial and residential growth pressure similar to that in the PAEC region. This means that elements of PAEC can be replicated in other areas.

Specific PAEC goals and objectives

The goals and objectives of this project are to:

- Incentivize and accelerate the planning, approval, financing, and deployment of AECs.
- Reduce the time, cost, and uncertainty associated with permitting and interconnecting commercial-scale solar and other DER.
- Leverage zero net energy, efficiency, local renewables, energy storage, and other DER to reduce 25 MW of peak energy across southern San Mateo County.
- Reduce the use of natural gas and minimize the need for expensive utility upgrades.
- Create a model project and project elements focused on increasing economic, environmental, and resilience benefits that can be replicated throughout California and beyond.

Project findings and reports

The PAEC initiative has produced a number of ground-breaking studies and reports. The project is still in progress; new reports will be added to this page as they are completed.

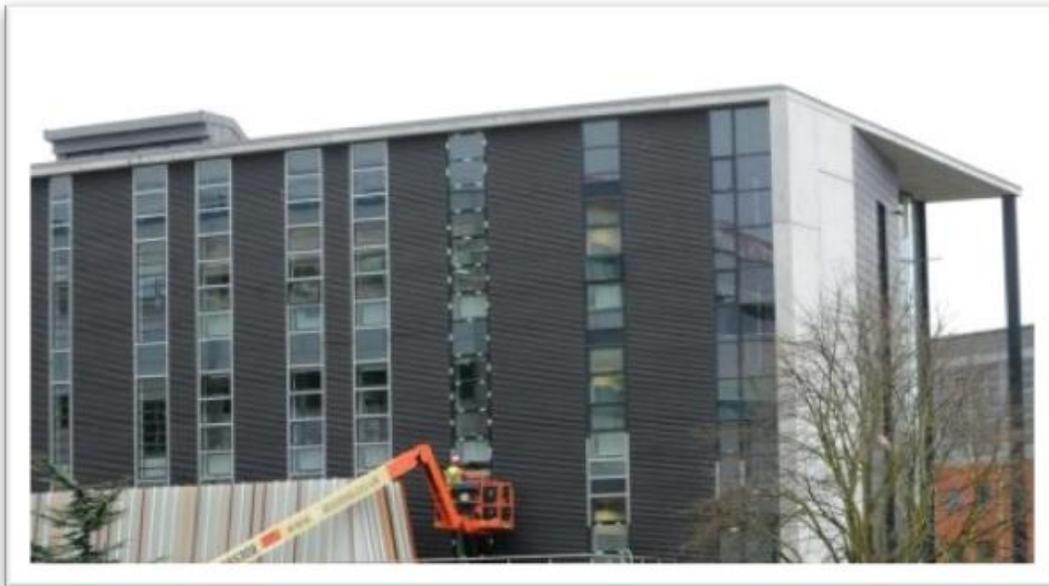
Reports

- [Economic benefits of energy efficiency and fuel switching for commercial-scale buildings](#)
- [Electric vehicle charging infrastructure](#)
- [Energy storage](#)
- [Net zero energy: Atherton Civic Center](#)
- [Solar Emergency Microgrid](#)
- [Solar Siting Survey to identify the potential for local solar generation](#)
- [Streamlining the interconnection of advanced energy solutions to the grid](#)
- [Streamlining local government planning and permitting](#)
- [Additional reports](#)

Economic benefits of energy efficiency and fuel switching for commercial-scale buildings

The PAEC team studied the economics of eight energy efficiency measures for five commercial-scale building types. Using a consistent approach to calculate payback, each report analyzes measures such as LED lighting conversion, building management systems (BMS) and advanced controls, reduction in phantom loads, and more. The reports show which measures provide the most savings and quickest payback times, and how savings can be realized by bundling various measures.

[Read more and view the reports here](#)

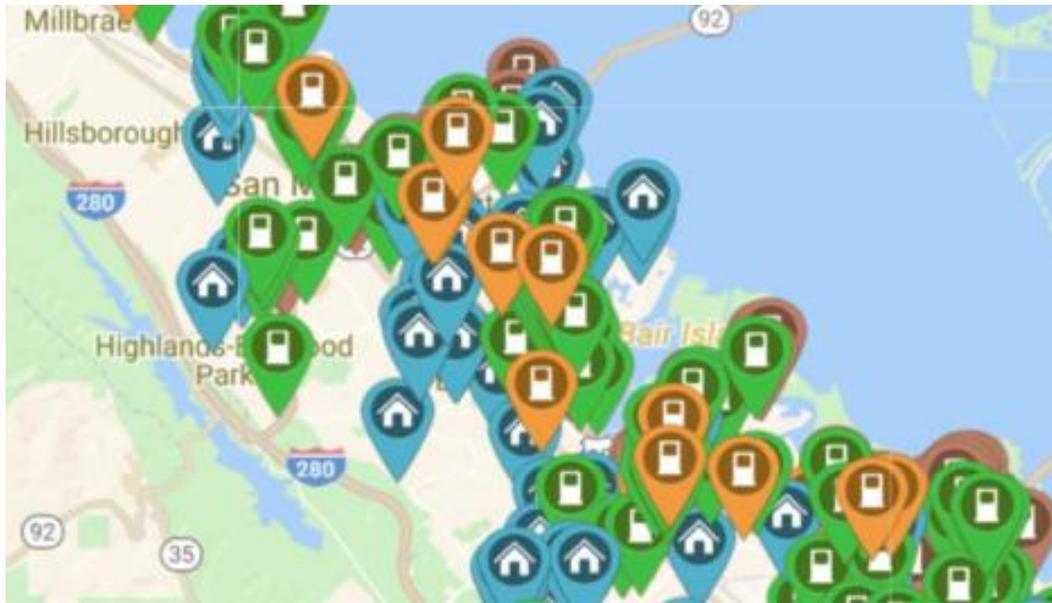


Electric vehicle charging infrastructure (EVCI)

The PAEC initiative will foster the expansion of electric vehicles (EVs) by implementing smart designs, plans, and strategies for Electric Vehicle Charging Infrastructure (EVCI). Along with potential location evaluations, the PAEC team evaluated the cost-effectiveness

to EV drivers of the EVCharging Stations (EVCS) that offer the best value in terms of economic, environmental, and technical performance.

[Read more and view the reports here](#)

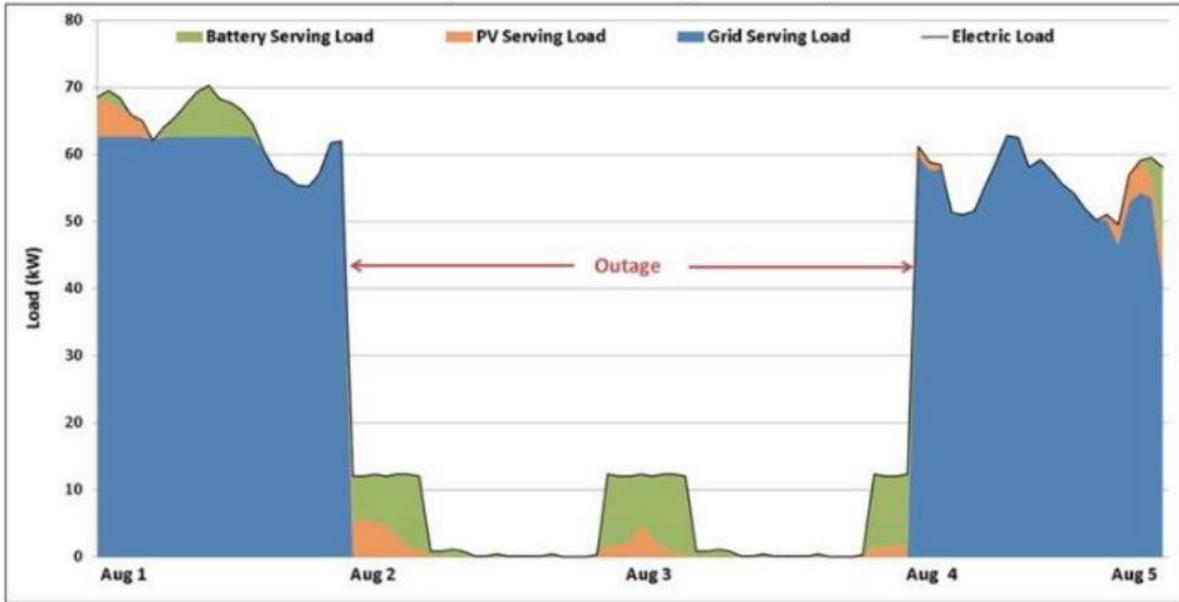


EVCharging Station density in San Mateo County

Energy storage

Distributed energy storage is in its infancy. But as project costs decrease, the market is expected to grow rapidly. Resilient solar+storage systems can also add value to the grid and to communities. The PAEC initiative reviewed financial factors in moving the market forward, as well as the role of standardized and streamlined permitting for distributed energy storage.

[Read more and view the reports here](#)



Solar+Storage Providing Backup to Critical Load During Grid Outage Events

Net zero energy: Atherton Civic Center

The new civic center plan for the Town of Atherton, in the PAEC region, studied key sustainable strategies that assist in lowering resource demand, including energy, water, material, and carbon. The study identified feasible, scalable, and regional strategies that can be easily replicated, while serving as an educational tool for the broader community.

[Read more and view the report here](#)



Emergency Operations Center and City Hall for Atherton's new Civic Center

Solar Emergency Microgrid

PAEC will include at least one Solar Emergency Microgrid that the Clean Coalition is designing to provide renewables-driven power backup to critical facilities. With a combination of solar, energy storage, and monitoring, communications, and control, Solar Emergency Microgrids can provide indefinite backup power for critical loads like police and fire stations, emergency operations centers and shelters, and communications and water infrastructure.

[Read more and view the report here](#)



Solar Emergency Microgrid

Solar Siting Survey to identify the potential for local solar generation

The Clean Coalition's [Solar Siting Survey](#) methodology evaluates all prospective solar sites and the interconnection hosting capacity for each site. The methodology assesses the technical siting potential for built-environment sites, including rooftops, parking lots, and parking garages, which are essential for procuring [wholesale distributed generation](#). A Solar Siting Survey conducted in the PAEC region in March 2017 identified more than 400 prospective commercial-scale solar sites with over 65 MW of commercial-scale solar photovoltaic (PV) potential.

[Read more and view the reports here](#)

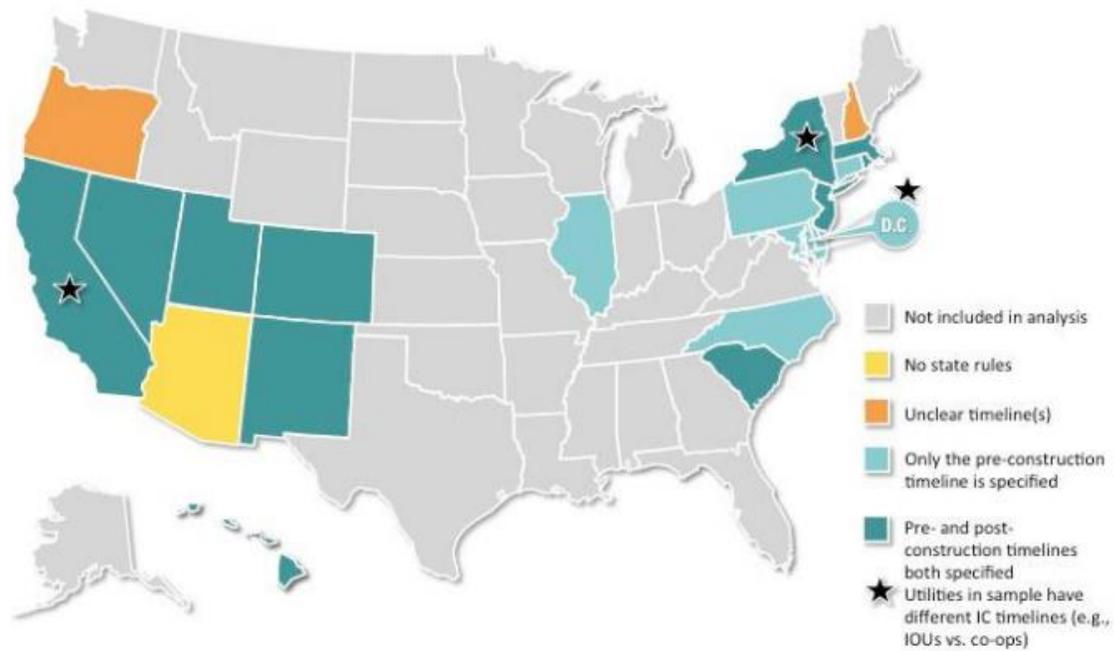


PAEC Solar Siting Survey

Streamlining the interconnection of advanced energy solutions to the grid

Interconnection is a significant barrier in developing distributed energy resources (DER) and achieving statewide energy and emission goals. The PAEC initiative seeks to educate policymakers and stakeholders on beneficial reforms that will keep interconnection processes efficient and cost-effective while maintaining a safe and reliable electric grid. The initiative also establishes a pilot to facilitate interconnection for wholesale distributed generation projects.

[Read more and view the report here](#)



State Rules Establishing Interconnection Approval Timelines for Systems < 10 kW

Streamlining local government planning and permitting

The PAEC team developed a methodology for prioritizing a set of model ordinances for further development, with associated recommendations for local government interventions in both existing buildings and new construction. Working with key stakeholders, the team identified AEC planning and permitting ordinances that can be scalable to other cities in the county and statewide.

[Read more and view the report here](#)



DNV GL Smart Green Cities Report, 2015, based on interviews with cities across the U.S.

Additional reports

[Energy Tracking/Benchmarking Tool Report](#)

[Final Case Study of the PAEC Development](#)

[Final Master Community Design](#)

[Final PAEC Project Fact Sheet](#)

[Final Report Interviews with Public Agencies, Installers, and Vendors](#)

[Final Scorecard of Sustainability Features](#)

[Final Scorecard of Sustainability Features](#) (Excel spreadsheet)

[Lending, Customer Compensation, and Government Incentive Report](#)

[Literature Review & ISO-RTO Tariff Analysis](#)

Learn More

Webinars

In the [Best practices for building Advanced Energy Communities](#) webinar series, from January through June 2018, the authors of several new groundbreaking PAEC studies present highlights of their findings.

- [Accelerating the transition to a clean local energy future](#) (June 20, 2018)
- [Streamlining the interconnection of advanced energy solutions to the grid](#) (June 5, 2018)
- [Supercharging the buildout of electric vehicle charging infrastructure](#) (April 24, 2018)
- [Innovative approaches to energy efficiency retrofits](#) (March 28, 2018)
- [How Solar Siting Surveys identify the potential for local solar generation](#) (February 27, 2018)
- [Economics of energy efficiency and fuel switching for commercial-scale buildings](#) (January 31, 2018)

Articles

[Supercharging the expansion of electric vehicle charging infrastructure](#) (April 30, 2018)

[Splitting up with split incentives](#) (March 31, 2018)

[Keeping the lights on after natural disasters](#) (February 28, 2018)

[Energy storage is about to take off](#) (January 31, 2018)

[Model ordinances: Showing the way to a clean energy future](#) (December 25, 2017)

[Building owners may be losing money by not investing in energy efficiency](#) (November 28, 2017)

[What Puerto Rico teaches us about power resilience for all communities](#) (October 25, 2017)

[No heat molecule left behind: Stanford's district-level heat recovery system](#) (September 29, 2017)

[Collaborating and innovating to expand clean local energy in San Mateo County](#) (August 31, 2017)

[Connecting renewables to the grid faster... much faster](#) (July 31, 2017)

[Best practices encouraging clean local energy deployment in California](#) (June 30, 2017)

[Expanding electric vehicle charging infrastructure in Palo Alto](#) (May 31, 2017)

[A pathway to zero net energy: Atherton, California](#) (April 30, 2017)

[Palo Alto's Jewish Community Center: Heating and cooling in newer, cleaner ways](#) (March 31, 2017)

[Solar Siting Survey: Identifying vast potential for clean energy in southern San Mateo County](#) (February 28, 2017)

[The reality of implementing 100% clean local energy](#) (January 31, 2017)

[Palo Alto is aiming high by going low... carbon](#) (December 29, 2016)

[Peninsula Advanced Energy Community launches, will provide framework for the future of clean energy](#) (November 16, 2016)

[California Energy Commission selects the Peninsula Advanced Energy Community for grant award](#) (March 29, 2016)

Media coverage

[How solar emergency microgrids provide resilience to vulnerable communities | PV Magazine](#) (May 21, 2018)

[How Solar Emergency Microgrids Keep the Lights on After Natural Disasters | PV Solar Report](#) (March 26, 2018)

[Solutions for Connecting Local Renewable Energy to the Grid More Quickly | PV Solar Report](#) (October 2, 2017)

[An EPIC Approach to Deploying Advanced Energy Communities | Local Government Commission](#) (December 22, 2016)

Press releases

[Solutions for connecting local renewable energy to the grid more quickly](#) (September 28, 2017)

[Solar Siting Survey identifies substantial solar potential on built environments in California's southern San Mateo County](#) (May 17, 2017)

Presentations

[Supercharging the Buildout of Electric Vehicle Charging Infrastructure](#) (May 22, 2018)

[PAEC Technical Advisory Committee Meeting #2](#) (May 3, 2018)

[PAEC Technical Advisory Committee Meeting #1](#) (July 25, 2017)

Contact us

If you own or control a commercial-scale property that should be considered for PAEC participation, please contact Frank Wasko, Program Director, at frank@clean-coalition.org.

To stay updated on PAEC, please [sign up for the Clean Coalition's quarterly newsletter](#).

C/CAG AGENDA REPORT

Date: June 27, 2018
To: Resource Management and Climate Protection Committee
From: Adrienne Carr, BAWSCA, RMCP Committee Member
Subject: Bay Area Water Supply and Conservation Agency update on current water supply and conservation
(For further information contact Kim Springer at 650-599-1412)

RECOMMENDATION

Receive an update on current water supply and recent State actions.

FISCAL IMPACT

None

BACKGROUND/DISCUSSION

The Bay Area Water Supply and Conservation Agency (BAWSCA), which represents the 26 wholesale customers of the San Francisco Regional Water System, continues to work with its member agencies to use water wisely and plan for future water supply reliability.

BAWSCA staff has been providing short updates of water supply conditions to the RCMP Committee. The most recent update was at the March 21, 2018 meeting. Adrienne Carr, Senior Water Resources Specialist, will provide an update again at this meeting on the current conditions.

ATTACHMENTS

None

C/CAG AGENDA REPORT

Date: June 27, 2018
To: Resource Management and Climate Protection Committee
From: Kim Springer, RMCP Committee Staff
Subject: Update and discussion on San Mateo County Energy Strategy 2025 content, DNV GL scope of work, stakeholder assignment effort, and project schedule

(For further information contact Kim Springer at 650-599-1412)

RECOMMENDATION

Receive an update on San Mateo County Energy Strategy 2025 content, DNV GL scope of work, stakeholder assignment effort, and project schedule, and provide input to staff.

FISCAL IMPACT

Staff time is paid for by funding under the C/CAG – PG&E Local Government Partnership (LGP) agreement and from Congestion Relief Funds for staffing of the RMCP Committee.

BACKGROUND/DISCUSSION

At the February 21, 2018 RMCP Committee meeting, the Committee decided to move forward with an update to the San Mateo County Energy Strategy 2012 document, and there was discussion that the cycle of this and future updates may need to be more frequent (than 10 years).

At the March 21, 2018 RMCP Committee meeting, staff presented a draft workplan and time line for the San Mateo County Energy Strategy 2025 update project.

At the April 18, 2018 RCMP Committee meeting, staff presented two documents for review and discussion, a list of Guiding Principles for the project, and a comparison of the topics covered in the original energy strategy to what's proposed for the 2025 version. That document also included a list of proposed stakeholders. Both documents have been update, based on feedback received at the meeting and are provided as attachments to this staff report.

This month, staff will review the scope of work, for consultant support from DNV GL, with the committee. DNV GL will provide technical, coordination, and writing support for the project. Staff will also propose the structure of the 2025 document, which will affect both the content and the stakeholder process.

ATTACHMENTS

Document: Updated Guiding Principles, Energy Strategy Content, and Stakeholders

San Mateo County Energy Strategy 2025
Guiding Principles

The following are Guiding Principles and provide a starting vision for the outcome of work of the RMCP Committee and stakeholders engaged in the development of the San Mateo County Energy Strategy 2025 document.

Energy and Water supply in San Mateo County will be:

Sustainable

- the lowest possible carbon footprint for delivered and consumed energy and water

Equitable

- the energy and water is provided equally, regardless of socioeconomic or other status

Abundant

- water and energy is available at a capacity to serve current and future needs

Reliable

- energy and water is there when you go to use it

Resilient

- energy and water is there when you go to use it, even if it isn't somewhere else

Affordable

- at a cost that is competitive or economically stable

Safe

- not a hazard for utility workers or others, safe to consume, and secure

Topics and Stakeholders

Energy Section

New Document

Current and historic snapshot of energy supply and issues

Energy efficiency

Renewable energy

Demand-side programs

Microgrid

Smart grid

Electrified transportation

Battery storage

Energy-Water Nexus

Fuel switching

Green Lease and Retrofit Value

LEED vs. ZNE and ZNE

Energy and Transportation (Hydrogen production, smart cities transportation energy)

Energy Stakeholder List

Peninsula Clean Energy

County of San Mateo

Clean Coalition

SamTrans/Caltrain

Electric vehicle/bus manufacturer

PG&E

Health Care District

El Concilio or other nonprofit in energy

San Mateo County Community College District

City/Town Council (2)

City/Town Public Works/Fleet Vehicles (2)

Battery Storage Integrator

Solar Company

Real Estate

Water Section

New Document

Current and historic snapshot of water supply and issues

Leak detection – addressing water loss, utility and customer sides of the meter

Water auditing and efficiency – commercial, industrial, and institutional (CII) customers

Continuing work on development of alternative water supplies

- Groundwater (source and recharge)

- Reuse (non-potable and potable systems for commercial and residential)

- Onsite reuse

- Desalination

Rate Structures

Landscape Specific Opportunities

Water Stakeholder List

BAWSCA

County of San Mateo

Water agencies (2-3)

Environmental Health

Silicon Valley Clean Water

San Mateo WWTP

Satellite Facility – Upstream treatment - West Bay Sanitary District

Resource Conservation District

Water Technology - Biotech

C/CAG AGENDA REPORT

Date: June 27, 2018
To: Resource Management and Climate Protection Committee
From: Kim Springer, RMCP Committee Staff
Subject: Report on State Energy Efficiency Collaborative Forum

(For further information contact Kim Springer at 650-599-1412)

RECOMMENDATION

Receive a report on State Energy Efficiency Collaborative Forum

FISCAL IMPACT

Staff time and staff attendance at the 2018 SEEC Forum is paid for by funding under the C/CAG – PG&E Local Government Partnership (LGP) agreement and from Congestion Relief Funds for staffing of the RMCP Committee.

BACKGROUND/DISCUSSION

The State Energy Efficiency Collaborative (SEEC), which is an alliance between three statewide non-profit organizations (The Local Government Commission, ICLEI – Local Governments for Sustainability, USA, and the Institute for Local Government) and California’s four Investor-Owned Utilities, holds the Forum, annually, in the third week of June.

The Forum this year is titled: Scaling Up and Out, and is the 9th Annual SEEC Forum. The focus of the Forum this year will be on policies and practices that have been successfully implemented in one community, and can be adapted and scaled to fit the needs of communities elsewhere. The discussion is especially important, considering increased goals and policies for doubling energy efficiency results and the immanent and challenging, post-2020 climate goals, both set by the state.

The SEEC Forum is an opportunity for program staff from different cities and Counties across California to share challenges and best practices with state agencies and each other. A copy of the 2018 SEEC Forum Program is provided as an attachment to this staff report.

ATTACHMENTS

2018 SEEC Forum Program

2018 SEEC Forum Program

Wednesday, June 20th

8:00 AM – 5:30 PM

8:00 AM – 10:30 AM

10:30 AM – 12:00 PM

12:00 PM – 1:00 PM

1:00 PM – 1:30 PM

1:30 PM – 2:30 PM

2:30 PM – 2:45 PM

Forum Registration

EE 101 Pre Forum Workshop ([Agenda](#))

The 2018-2025 Energy Efficiency Business Plans were approved this year bringing new changes to the implementation of energy efficiency programs and Local Government Partnerships. In this workshop, utility representatives will provide an overview of the new Business Plans followed by an opportunity for open dialogue and Q&A with local partners.

Energy Efficiency Business Plans Workshop

Networking Lunch

Forum Welcome (30 mins.)

Speakers:

- **Eric Guerra**, Councilmember, City of Sacramento
- **Kate Meis**, Executive Director, Local Government Commission
- **David Poster**, Director of Energy Efficiency Programs, Pacific Gas & Electric Company

Kickoff Plenary (60 mins.)

As California continues to lead the country in combating climate change, state leaders are focusing on making the low-carbon future accessible and affordable for all. New regulations require zero net energy, or near zero net energy, buildings, solar on all new residential homes, and increased funding for hard-to-reach communities. These state policies continue to place local governments at the front lines of expanding programs, providing access to funding, and developing local energy policies – the main drivers behind future savings.

Speakers:

- **Moderator: Kate Meis**, Executive Director, Local Government Commission
- **Ken Alex**, Executive Director Governor's Office of Planning and Research
- **Yana Garcia**, Assistant Secretary for Environmental Justice and Tribal Affairs, California Environmental Protection Agency
- **Andrew McAllister**, Commissioner, California Energy Commission

Networking Break

2:45 PM – 4:00 PM

Session Block #1 (4 concurrent sessions, 75 mins.)

Regulations and Legislation Impacting Local Energy Programs

Local climate and energy program staff, organizational leaders and community members have a need to know about policy and regulatory proposals affecting their programs and how to engage meaningfully in policy development. This session will provide attendees with the most current information on priority legislative proposals, Public Utilities Commission proceedings, and Energy Commission building benchmarking regulations.

Speakers:

- Moderator: **Margaret Bruce**, Program Manager, Local Government Commission
- **Irene Moosen**, Regulatory Consultant, Local Government Sustainable Energy Coalition
- **Eugene Lee**, Residential Supervisor, Efficiency Division, Existing Buildings Office, California Energy Commission
- **Nidia Bautista**, Chief Consultant, California Senate Committee on Energy, Utilities and Communications

Decarbonization, Democratization, Decentralization: Tools for Implementing Climate Change Plans

As local governments pursue increasingly aggressive climate change and public health goals, interest in electrification is growing. Communities are looking to decarbonize full buildings and public facilities including: electrifying heating, hot water and cooking. The good news is that highly efficient heat pumps for heating air and water and induction and convection appliances for cooking are coming into the market with increasingly competitive installation and operating costs and prices. In addition, heating technologies are being

outfitted with communications and control devices that will enable them to be used as thermal storage solutions in support grid needs, and for generating revenues for home and building owners. This workshop will provide up to date research that can be used to help policymakers reach informed decisions about their energy source. It will also describe a practical road map, including: policies, tools and programs, that public agencies can adapt to their local conditions to cost-effectively electrify. Finally, the workshop will include several case studies demonstrating how public agencies are already launching decarbonization initiatives.

Speakers:

- Moderator: **Rick Brown**, President, TerraVerde Energy, LLC
- **Panama Bartholomy**, Founder, Building Decarbonization Coalition
- **Jessie Denver**, Energy Program Manager, San Francisco Department of the Environment
- **Jonathan Parfrey**, Executive Director, Climate Resolve

Connecting with the State's Financing Pilots and Reaching Underserved Communities

CAEATFA, in partnership with the Investor Owned Utilities, is launching innovative financing pilot programs, designed to make more private capital available for energy efficiency retrofits. The workshop will cover what financing is, and will be available for homeowners, renters and small businesses so that local government participants can connect constituents with these resources. Making capital available for underserved communities is a priority for the programs. We will explore how the programs can best serve disadvantaged communities, balancing access with consumer protection, the challenges of supplying credit to the small business market and opportunities for collaboration with local governments.

Speakers:

- Moderator: **Andrew Nih**, Financing Supervisor, Southern California Gas Company
- **Miriam Joffe-Block**, Program Manager, California Alternative Energy and Advanced Transportation Financing Authority
- **Carmelita Miller**, Legal Counsel, The Greenlining Institute
- **Ben Brown**, Senior Program Manager, On Bill Financing, Pacific Gas & Electric Company
- **Siew Yee Lee**, Business Development Officer, Minority Business Development Agency

California Energy Commission Updates: Building Energy Use Benchmarking Program (AB 802)

California has launched its Statewide Benchmarking Program under AB 802 which was approved by the Governor in 2015. With the regulations enacted in April of 2018, and enforcement commencing June 1st, 2018 building owners must submit benchmarking data to the California Energy Commission. Learn the long-awaited details on compliance procedures, available resources, intersection with existing local government ordinances,

and participate in Q&A directly with the California Energy Commission staff. The conversation will wrap up with how benchmarking is uniquely applied in the local government sector.

Speakers:

- Moderator: **Marc Costa**, Policy & Regulatory Manager, The Energy Coalition
- **Erik Jensen**, Energy Specialist, California Energy Commission
- **Daniele Horton**, Founder and President, Verdani Partners
- **Barry Hooper**, Green Built Environment Senior Coordinator, City of San Francisco
- **Sarah Farrell**, Energy Policy Advisor, San Joaquin Valley Clean Energy Organization

4:00 PM – 4:15 PM

4:15 PM – 5:30 PM

Networking Break

Session Block #2 (4 concurrent sessions, 75 mins.)

Role of Renewable Gas in Climate Action and Resiliency Planning

What are PG&E and SoCalGas doing to help cities and counties achieve their climate action and resiliency goals? How can communities combine organic waste diversion with renewable energy development while reducing emissions from transportation? How can utilities assist local governments embarking on resiliency plans and incorporating climate adaptation strategies into their General Plans? Please join to learn about existing utility programs as well as R+D efforts related to: renewable gas (organic waste, landfills, wastewater, dairies, agriculture), Power-to-Gas and renewable hydrogen technologies, renewable gas vehicles and fueling infrastructure, and distributed energy resources (fuel cells, combined heat and power systems)

Speakers:

- Moderator: **Geoffrey Danker**, Franchise, Fees & Planning Manager, SoCalGas
- **David Lewis**, Director, Wholesale Marketing & Business Development, Pacific Gas & Electric

Partnering with Chambers of Commerce to Reach the Business Community

This session will have a brief presentation and a panel discussion. The speakers will represent local government and the business community bringing chamber of commerce representatives and a business representative, the discussion will be facilitated by a representative from the local utility SDG&E. The panel will speak about the journey of the cities of Chula Vista and National City in becoming energy efficiency outreach partners in the local business community.

Speaker Roster:

- **Moderator: Eric Drabb**, Local Government Partnership Advisor, San Diego Gas & Electric
- **Barbara Locci**, Conservation Specialist, City of Chula Vista
- **Jacqueline Reinoso**, President and CEO, National City Chamber of Commerce
- **Lisa Cohen**, Chief Executive Officer, Chula Vista Chamber of Commerce
- **Dee Baker**, Director of Sales, Pery Plumbing Heating & Air

Drivers of Change Analysis for Cities GHG Emissions Inventories

Since the mid-1990s, local governments have engaged in periodic inventories of municipal and community greenhouse gas (GHG) emissions with the ultimate goal of achieving emission reductions. The field has matured with documented protocols for performing and reporting inventories, and many communities are now conducting inventory updates to establish trends. ICLEI – Local Governments for Sustainability and the City of Bellevue Washington, with funding from the U.S. Department of Energy’s Cities Leading through Energy Analysis and Planning (Cities-LEAP) Program, are creating methods and tools to attribute changes between two inventories to the impacts of policies and programs along with other external drivers, such as economic activity and weather. Specifically, ICLEI has developed a “contribution analysis” that is now in testing by a set of participating communities. By eliminating as much uncertainty as possible through normalizing for factors like weather and economic activity that isolate out the “noise” of external factors, the impact of actions or programs can be reasonably inferred.

Speakers:

- Moderator: **Hoi-Fei Mok**, Program Officer, ICLEI USA
- **Garrett Wong**, Senior Sustainability Analyst, City of Santa Monica
- **Mike Steinhoff**, Program Manager, Tools & Technical Innovation, ICLEI USA

Microgrids for Community Resilience: Integrating Generation, Storage and Interoperability

Recent disasters have driven home the importance of maintaining energy service to critical systems: water, communications, refuges, life safety systems, etc. Microgrids, including energy generation, storage and grid inter-operability, can provide resilience and reliability for vital public safety, communications and economic functions. This session will explore the experiences of three microgrid implementers from diverse situations: their motivations, decision-making, cost/benefit and risk/benefit criteria, and their key take-aways and advice.

Speakers:

- Moderator: **Margaret Bruce**, Program Manager, Local Government Commission
- **Rachel DiFranco**, Sustainability Manager & Smart City Co-Facilitator, City of Fremont
- **Dr. Shelly Morr**, Superintendent, Santa Rita Unified School District
- **Matthew Marshall**, Executive Director, Redwood Coast Energy Authority

5:30 PM – 6:30 PM

6:30 PM – 9:00 PM

Hosted Networking Reception and Poster Session

Optional Evening Activities

Thursday, June 21st

7:30 AM – 8:15 AM

8:15 AM – 9:15 AM

9:15 AM – 9:30 AM

9:30 AM – 10:45 AM

Forum Registration and Networking Breakfast

Day 2 Morning Plenary Session (60 mins.)

The SB 350 Barriers Study identified structural policy, and programmatic barriers to equitable access to energy services and clean energy technologies. In addition, the recent decision from the CPUC addressing the Energy Efficiency Business Plans calls on utilities to measure the economic impacts and co-benefits of energy efficiency programs on low-income, hard-to-reach, and disadvantaged communities. This session will explore the need to address inequities in our local energy policies and programs and how local leaders can ensure they are providing opportunities for clean energy access to all members of their community.

Speakers:

- Moderator: **Cary Garcia**, Statewide Energy Efficiency Best Practices Coordinator, Local Government Commission
- **Luis Sanchez**, Chief Executive Officer, Community Resource Project, Inc.
- **Alana Matthews**, Public Advisor, California Energy Commission
- **Leslie Martinez**, Leslie Martinez, Policy Advocate, Leadership Council for Justice and Accountability

Networking Breakfast

Session Block #3 (4 concurrent sessions, 75 mins.)

Advancing the Skills of Your Building Operations Workforce to Achieve Carbon Goals

Improving the energy performance of municipal government buildings can help California avoid construction of new power plants, reduce greenhouse gas emissions, and accelerate climate action – in addition to saving municipalities money on energy bills. A diverse panel of professionals from local government, workforce development, and training organizations will share their perspectives on the challenge of preparing the municipal building operations workforce for California's zero net energy future. Join this session to learn about energy efficiency skill building for your workforce, the elements of successful workforce partnerships, pitfalls to avoid in building partnerships, and lessons learned. Participants in this session will come away with ideas and resources for building the capacity of their workforce through partnerships in their own communities.

Speakers:

- Moderator: **Robert Marcial**, Director, Pacific Energy Center
- **Leigh Lain Walker**, Program Manager, Ventura County Regional Energy Alliance
- **Katie Ward**, Program Associate, San Gabriel County Council of Governments
- **Rosie Kang**, Sustainability Program Manager, Willdan
- **Samantha Miller**, Business Services, Alameda County Workforce Development Board
- **Melanie Danuser**, Project Director, Northwest Energy Efficiency Council

Energy Efficiency Incentive Programs: Evolving Policy, Requirements, and Challenges

So, you think you're ready to implement efficiency? You've gathered buy-in and perhaps earmarked a potential project, and you are counting on incentives to bridge funding gaps and maximize performance. But, have you considered how the evolution of energy policy and technologies will impact your project? Amidst growing scrutiny of efficiency projects moving through utility incentive programs, public agencies that have previously leveraged ratepayer resources to overcome barriers to adoption are meeting new obstacles along the path to implementation. This session will open with a presentation on the origins and evolution of efficiency programs and will include a highlight of the end-user experiences gathered from agencies who have leveraged ratepayer resources to achieve efficiency. Its goal is to serve as an educational forum and workshop for sharing dialogue among local government customers, energy efficiency program implementers and service providers, IOU program stakeholders and California Public Utilities Commission staff.

Speaker Roster:

- Moderator: **Laurel Rothschild**, Director, The Energy Coalition
- **Nils Strindberg**, Energy Division, California Public Utilities Commission
- **John Rossi**, Program Manager, TRC Solutions
- **Brendan Havenar-Daughton**, Local Government Energy Efficiency Strategy Lead, Pacific Gas & Electric Company
- **Athena Besa**, Manager, San Diego Gas & Electric

Reaching Up and Out: Advancing Reach Codes Together

Local governments frequently adopt amendments to the California Building Code (sometimes called reach codes) to leverage jurisdictions' ability to act quickly to advance energy efficiency and emissions reduction goals. Especially in growing areas, reach codes ensure inclusion of desirable measures and capture otherwise untapped cost-effective savings. This session provides an overview of the adoption process, documentation requirements, and shared experiences from other jurisdictions. The session also introduces resources to streamline adoption to help individual jurisdictions “scale up” the reach code mountain, and “scale out”, enabling many jurisdictions to leverage one set of materials rather than duplicating the process each time.

Speaker Roster:

- Moderator: **Misti Bruceri**, Principal, Misti Bruceri & Associates, LLC
- **Christopher Kuch**, Codes and Standards Engineer, Southern California Edison
- **Ingrid Neumann**, Associate Energy Specialist, California Energy Commission
- **Mike Grim**, Senior Programs Manager, City of Carlsbad
- **Lindsey Tillisch**, Program Manager, Pacific Gas and Electric Company
- **Garrett Wong**, Senior Sustainability Analyst, City of Santa Monica

Top Measures to Accelerate Local Clean Energy Programs: How to Push the Envelope on a Budget

Local governments across California play a vital role in shaping the state's energy future and advancing sustainability. Leading municipalities have developed innovative and cost effective ordinances and programs to drive adoption of energy efficient technologies, renewable energy systems, and electric vehicles. We researched the most innovative local government efforts that serve as ideal models for other communities to adopt towards their climate action plan and clean energy goals. This panel will highlight our top findings on the best practices, costs, and benefits for encouraging development of a clean energy future across five areas: energy efficiency, renewable energy, zero net energy, energy storage, and electric vehicle (EV) charging infrastructure. The panel will also discuss how model policies can be adapted for local use in the most cost-effective way. Our project team engaged cities and stakeholders throughout San Mateo County to determine which clean energy policies were most appealing. The team then did an extensive cost – benefit and carbon analysis of eight clean energy programs that could become model ordinances to support EVs, solar carports, electric heat pumps, time of sale energy audits and efficiency measures for new commercial buildings. The project also includes case studies of the most advanced energy facilities that already exist, such as Stanford University's district scale heat recovery system. We will explore different models and case studies that could be combined and adapted to create model advanced energy communities within a reasonable budget. This work was done in collaboration with the Clean Coalition and several dozen other partners of the Peninsula Advanced Energy Community (PAEC) initiative funded by the California Energy Commission.

Speaker Roster:

- Moderator: **Cary Garcia**, Statewide Local Government Energy Efficiency Best Practices Coordinator, Local Government Commission
- **Diane Bailey**, Executive Director, Menlo Spark
- **Betty Seto**, Sustainable Buildings and Communities Department Head, DNV GL
- **Justine Burt**, Founder and CEO, Appraccel

10:45 AM – 11:00 AM

11:00 AM – 12:15 PM

Networking Break

Session Block #4

Controlled Environment Agriculture: Facility Types, Carbon Footprint and Electricity Benchmarking

Fresh, year-round fruits, vegetables and herb cultivation is driving controlled environment agriculture (CEA) facility development. The two new “decentralized agriculture” facility types are high-tech greenhouses and indoor warehouse grows. Energy efficiency for greenhouse and indoor horticulture is challenging to predict on an annual PSF basis, but it’s relatively simple to monitor. Dimmable lights and complex HVAC systems are crop and site dependent. Can we benchmark a “carbon footprint” for crop by benchmarking the facility? How do we handle reporting? What’s the reward for farms who achieve annual net positive energy and net negative carbon? One in three shoppers will pay 25% more for “local”. How shall we approach carbon labeling and reward CEA farmers for achieving energy efficiency? Come see the latest examples and CEA case studies from across California!

Speaker Roster:

- Moderator: **Liz Yager**, Program Manager, County of Sonoma Energy and Sustainability Division
- **Nicholas Maderas**, Owner, F4DESIGN
- **Stefan McCulloch**, Owner, iPonix

A Recipe for Making a ZNE Building: Lessons Learned from New Construction and Existing Building Renovations

Faced with the reality of changing codes and energy reduction requirements, the County of San Diego and the City of San Diego have been proactively practicing Zero Net Energy. The County chose to start practicing early, with two new ZNE facilities already occupied and 4 more in the making. The City was awarded a grant to retrofit several existing buildings to demonstrate cost-effective pathways in the small commercial and municipal building sector. These local governments have learned some hard lessons about why the process of getting a ZNE building is very different from any other industry-standard building. A recipe of best practices will be presented for getting from the idea of ZNE to occupancy and on into performance monitoring and certification.

Speakers:

- Moderator: **Susan Freed**, Project Manager, County of San Diego
- **Bryan Olson**, Senior Civil Engineer- Energy & Sustainability, City of San Diego

Youth Engagement for Climate Action Implementation

Many California communities have robust climate action goals, but lack the resources necessary to achieve them. By leveraging the unbridled enthusiasm of the youth population, the City of Fremont, Strategic Energy Innovations, Rising Sun Energy Center, and The Energy Coalition have proven successful in implementing environmental sustainability efforts while also providing climate literacy and green training opportunities. The speakers will discuss an array of effective engagement projects, programs, and strategies that empower youth, foster community connections, provide workforce development opportunities, and deliver on climate action targets, all while providing a fun and meaningful experience for kids!

Speakers:

- Moderator: **Rachel DiFranco**, Sustainability Manager, City of Fremont
- **Chelsea Marcell**, CivicSpark Climate Fellow, City of Fremont
- **Emily Courtney**, Program Director, Education, Strategic Energy Innovations
- **Rachael Van Schoik**, Project Coordinator, The Energy Coalition
- **Julia Hatton**, Director of Programs, Rising Sun Energy Center

EV-Ready Communities: Blueprints for Accessible EV Charging

California cities are working hard to respond to an increasing demand for EV charging infrastructure. Sacramento, San Francisco, and LA County each recently received proposed awards from the California Energy Commission to develop EV Ready Community Blueprints. This session will explore key planning areas of these Blueprints and highlight specific solutions and projects from the cities of Sacramento, San Francisco, West Hollywood, and Santa Monica. We will also discuss some of the most pressing challenges facing urban areas, such as identifying viable EV charging sites, meeting the needs of residents in multi-family dwellings, and addressing competing interests in the public right-of-way (e.g. curbside charging).

Speakers:

- Moderator: **Jessie Denver**, Energy Program Manager, San Francisco Department of the Environment
- **Ariana Vito**, EV Program Coordinator, City of Santa Monica
- **Sami Taylor**, Assistant Sustainability Planner, City of West Hollywood
- **Jennifer Venema**, Sustainability Manager, City of Sacramento

12:15 AM – 1:00 PM

1:00 PM – 2:00 PM

2:00 PM – 2:15 PM

2:15 PM – 3:30 PM

Networking Lunch

Afternoon Plenary Session (60 mins.)

The Changing Electric Utility Industry – Roles & Opportunities for Local Governments

The electric utility industry is in the midst of dramatic change. Future opportunities for local governments within the design, operation and maintenance of the electric “grid of the future” have been presented at many venues. However, many of these opportunities exist now under current grid operator programs and are being developed at energy regulatory venues. This presentation will describe how and why local governments should be participating in ongoing grid operations programs, how that participation is funded, and where past challenges local governments faced in this participation may be mitigated.

These opportunities arise from regulatory and industry trends including the retirement of nuclear and fossil fuel generating stations, policies in advancing clean power utilization, and the advancement and utilization of clean energy market technologies by retail customers. San Onofre Nuclear Generating Station has been decommissioned, Diablo Canyon Nuclear Generating Station is scheduled for retirement, coast-based thermal generating stations and fossil-fuel peaking stations are being phased out, and independent market participants and retail customers are adopting new, clean technologies for integration into the grid at astounding rates. This presentation will describe the opportunities for local governments to participate in programs today, and in the near future, that impact the well being of the electric grid and their communities.

Speakers:

- Moderator: **Howard Choy**, Owner, Howard Choy Consulting, LLC, Vanir Energy
- **Craig Perkins**, President and Executive Director, The Energy Coalition
- **Gene Rodrigues**, Vice President, ICF International
- **Randy Britt**, President, Vanir Energy
- **Gary Saleba**, President/CEO, EES Consulting

Networking Break

Session Block #5 (4 concurrent sessions, 75 mins.)

Leading by Example: Municipal Zero Net Energy

Local governments throughout the state are beginning to practice Zero Net Energy (ZNE) in their facilities to help meet GHG reduction goals, and the goals set by SB350. This panel describes different approaches to ZNE municipal buildings and portfolios, ranging from large-scale ZNE plans to municipal ordinances to building or retrofitting individual municipal buildings. From design through implementation, this panel will provide practical tools and stories to assist other local jurisdictions to explore a range of approaches to ZNE.

Speakers:

- Moderator: **Chris Nanson**, LGP Program Adviser, San Diego Gas & Electric
- **Susan Freed**, Project Manager, County of San Diego
- **Betty Seto**, Sustainable Buildings and Communities Department Head, DNV GL
- **Rachael Londer**, Energy Efficiency Specialist, County of San Mateo
- **Barry Hooper**, Green Built Environment Senior Coordinator, San Francisco Department of the Environment

How Community Choice Agencies Can Advance Energy Efficiency Goals

This session will explore the challenges and opportunities for local governments advancing energy efficiency goals via Community Choice agencies (CCAs). There are now over a dozen operational CCAs in California with more on the way. CCAs can initiate self-funded programs, and also have the statutory authority to receive public benefit funds in order to fund and administer efficiency programs. The session will highlight CCAs that have acted on this and explore the potential that all such agencies, prospective and operational, have in this regard. Many of the newly operational and emerging agencies are considering to self-fund as well as the option to elect to receive state EE funds.

Speakers:

- Moderator: **Woody Hastings**, Energy Program Manager, Center for Climate Protection
- **Kathy Wells**, Energy Projects Coordinator, Lancaster Choice Energy
- **Alice Stover**, Director of Customer Programs, MCE Clean Energy
- **Rick Brown**, President, TerraVerde Energy, LLC

Driving Forward: Accelerating Opportunity and Equity for Communities through EVs

Low-income communities often lack access to zero-emissions vehicles (ZEVs), yet clean transportation solutions are most needed in these mobility deserts. When designed with equity as a goal – and not an afterthought – ZEV programs can simultaneously address the challenges of air quality, equity, and opportunity access. In Sacramento, public, private, and non-profit partnerships are developing California's first low-income ZEV car-share, micro-transit, community charging, and other innovative programs. Panelists will share how Sacramento's collaborative model has positioned the region for ZEV deployment, working from a regional policy framework to on-the-ground pilots and projects, and discuss lessons learned, successful partnerships, financing, and scalability.

Speaker Roster:

- Moderator: **Raef Porter**, Climate and Energy Team Manager, Sacramento Area Council of Governments
- **Jennifer Venema**, Sustainability Manager, City of Sacramento
- **Steffani Charkiewicz**, Air Quality Engineer, Sacramento Metropolitan Air Quality Management District
- **Judy Robinson**, Sustainability Manager, County of Sacramento
- **Simeon Gant**, Executive Director, Greentech Education & Employment

Learning to Scale in the Great Wide Open: Lessons Learned from Non-EE Organizations

Implementing energy efficiency programs in any setting can come with a variety of barriers to success. Rural ratepayers face the additional barrier of being geographically removed from resources. This session will focus on learning from other organizations outside of the energy efficiency industry that operate in the rural and rural-urban connected environments. The panelists will focus on best practices that can be scaled up and out to energy efficiency implementers serving all California communities.

Speakers:

- Moderator: **Lou Jacobsen**, Director of Demand Side Management, Redwood Coast Energy Authority; Co-Chair, Rural Hard to Reach Working Group
- **Connie Stewart**, Executive Director, California Center for Rural Policy, Humboldt State University
- **Ismael Herrera**, Executive Director, San Joaquin Valley Rural Development Center, CSU Fresno
- **Leslie Botos**, Director of Community Relations and Development, Central California Blood Center
- **Marisol Aguilar**, Community Equity Initiative Programs Director
- **Courtney Kalashian**, Executive Director, San Joaquin Valley Clean Energy Organization

3:30 PM – 4:30 PM

Closing Plenary: The Revolution will be Financed: How to Run Energy Programs That Produce Results, Attract Investors and Protect Your Citizens (60 mins.)

The days of stretching limited public budgets to fund small numbers of energy projects are insufficient to meet our climate and energy goals and are drawing to an end. Energy programs and procurement will increasingly need to partner with third-party financing for communities to be able to scale their efforts and bring about the results they seek. This capital is readily available and eager to partner but is unimpressed with current project development models that often return spotty results.

This session will feature top financiers, utilities, implementers and practitioners offering direct and usable tools, resources and ideas that need to underpin any energy project, program or procurement that wants to attract outside capital. Come hear what models are

working, how future regulatory changes will affect your community and how to get ready for your future.

Come hear where the money is, how to get it and how to protect your citizens.

Speakers:

- Moderator: **Panama Bartholomy**, Director, Investor Confidence Project
- **Maria Fields**, Senior Vice President, Business Development, JouleSmart
- **Peter Thompson**, Expert Program Manager, Energy Efficiency Finance, Pacific Gas and Electric
- **Courtney Kalashian**, Executive Director, San Joaquin Valley Clean Energy Organization
- **Matt Golden**, CEO, OpenEE