



TO: Mayor and Councilmembers

FROM: Peter Imhof, Planning & Environmental Review Director

CONTACT: Cindy Moore, Sustainability Coordinator

SUBJECT: Strategic Energy / 100% Renewable Electricity Plan

RECOMMENDATION:

- A. Receive a report from staff and Optony, Inc. on the results of the Strategic Energy / 100% Renewable Electricity Plan; and
- B. Adopt Resolution 19-___, entitled "A Resolution of the City Council of the City of Goleta, California, Adopting the City of Goleta Strategic Energy / 100% Renewable Electricity Plan" (Attachment 1); and
- C. Provide staff direction regarding City Council priorities for implementation.

BACKGROUND:

100% Renewable Electricity Goal

On December 5, 2017, Council adopted a 100% renewable energy goal for the electricity sector for both municipal facilities and for the City at large by 2030. Shortly following the City's adoption of its 100% Renewable Energy goal, Southern California Edison (SCE) released a Request for Proposals (RFP) seeking interest in energy projects in our region that would meet long-term local capacity requirements through preferred resources including solar, wind, energy storage, energy efficiency and energy conservation. These projects would also help meet resiliency objectives in the Goleta/Santa Barbara area in the event of a power outage. Additionally, in September 2018, Governor Brown signed SB 100, accelerating the state's required Renewable Portfolio Standard¹ (RPS), procurement mandate to 60% by 2030.

¹ As defined in Public Utilities Code Section 399.12, subdivision (i), to mean the specified percentage of electricity generated by eligible renewable energy resources that a retail seller or local publicly owned electric utility is required to procure under Public Utilities Code Sections 399.11 et seq.

Need for Strategic Energy Planning

SCE was seeking offers that would enhance resiliency in the Goleta electrical system because our region faces significant threats to reliability and resiliency due to its geographic location at the end of SCE's high-voltage transmission lines. Specifically, the area is at risk of experiencing a prolonged electrical outage should the two transmission lines serving the area experience a simultaneous disruption, as was threatened during the Thomas Fire. An emergency such as wildfire, debris flow, earthquake or other catastrophic event is not the only risk to maintaining continued electrical service, however.

In addition to potential unplanned electrical outages due to natural disaster, the State's investor-owned electric utilities, including SCE, may preemptively shut off power in high fire risk areas to reduce fire risk during extreme and potentially dangerous weather conditions. Referred to as "de-energization" or Public Safety Power Shut-offs (PSPS), this operational practice is allowed by the California Public Utilities Code to protect public safety during extreme weather conditions. The decision by SCE to turn off power is based on a combination of factors that can include, but are not limited to, high winds, low humidity, dry vegetation, a red flag warning, ground observations, and public safety risk. During a PSPS, all customers serviced by an affected power line will have their power shut off, and such power outages could last several days, depending on the severity of the weather and other factors.

Memorandum of Understanding

In light of this vulnerability and in response to the RFP by SCE, the County of Santa Barbara led a multi-jurisdictional cooperative effort to hire a consultant to provide strategic energy planning services. In addition to Goleta, representatives from the Cities of Carpinteria and Santa Barbara joined with the County to form the Clean Energy Working Group and collectively participate in the consultant solicitation process, as well as the related Community Choice Energy feasibility study. Community Choice Energy (CCE), also known as Community Choice Aggregation (CCA), enables local governments to leverage the purchasing power of their residents, businesses, and governmental entities to purchase or generate power for their communities.

Following release of the RFP, Santa Barbara County and the Cities of Goleta, Carpinteria, and Santa Barbara hosted a public workshop on January 31, 2018 to discuss and provide an update on the related efforts to study the feasibility of CCE and the solicitation process for a consultant to assist with identification of opportunities to increase the development of local clean energy projects. The meeting was attended by 45 community members and received widespread support from those in attendance.

Seeing the strategic energy planning effort as a way to support achievement of the 100% renewable electricity goal and help address the need for electrical resiliency in event of a PSPS or a catastrophic event, in July 2018 the City entered into a Memorandum of Understanding (MOU) with the County of Santa Barbara and the City of Carpinteria to jointly procure consulting services to develop a regional strategic energy plan. The City

of Santa Barbara appropriated \$200K for a strategic energy plan and engaged the consultant directly for similar services, rather than participate in the MOU.

Optony, Inc. was selected to assist the three partners with developing a county-wide strategic energy plan (SEP) and individual SEPs for the Cities of Goleta and Carpinteria utilizing the following approach:

- Conduct a Study of Renewable Energy Resource Potential
- Determine Barriers to Local Renewable Energy Development
- Develop Strategies to Overcome Barriers
- Identify High-Potential Sites for Energy Development
- Host Workshops for Community Outreach and Engagement

It is intended that the SEPs provide a roadmap for the participating local governments to develop renewable energy projects using municipally-owned assets and identify policy options—such as zoning and permitting modifications or financial incentives—to facilitate development of such projects on private properties. It is hoped that the results of the study can also be used to position the City to secure future funding opportunities to implement identified renewable energy projects. Having information for such “pitch-ready” projects will allow the City to take a proactive approach in responding to potential grant programs or other funding and partnership opportunities brought to the City by third parties in the longer term.

Initial Process Highlights

Following approval of Optony’s contract by the County Board of Supervisors in September 2018, kick-off meetings were held with the cooperating partners and the Optony team to review the purpose and goals and gather information for the project. Representatives from various City departments participated in the meeting, including Planning & Environmental Review, Public Works, Neighborhood Services & Public Safety, and the City Manager.

In October 2018, a web-based survey was released by the Cities and County of Santa Barbara to seek stakeholder input to better understand opportunities and challenges and to help shape future outreach. In November 2018, Optony representatives conducted site visits at potential local energy project sites and discussions are ongoing between the consultant and private property owners regarding further analysis.

DISCUSSION:

Strategic Energy / 100% Renewable Electricity Plan

The adopting Resolution (17-52) for the 100% Renewable Electricity Goal requires that the City create a work plan to identify how it will reach the goal. The Draft Strategic Energy Plan prepared by Optony substantially meets this requirement, and includes options, methods, financial resources needed, and an associated timeline for accomplishing the 100% Renewable Electricity Goal. Additionally, as part of the overall plan, City staff have

prepared a contextual document, entitled “*Reaching 100%: An Overview of Goleta’s Strategic Energy Plan*” (Overview) to provide a user-friendly introduction and overview of the strategic energy planning effort.

It is intended that the Overview and the City’s SEP together constitute the City’s Strategic Energy / 100% Renewable Electricity work plan in fulfillment of Resolution 17-52 requirements. These documents chart a path to 100% clean energy in the electricity sector and are intended to be utilized as a foundation for more detailed planning, budgeting and implementation. The documents are described in more detail below and included in Attachment 1, Exhibit 2.

Reaching 100%: An Overview of Goleta’s Strategic Energy Plan

The Strategic Energy Plan Overview includes a letter from the Mayor and highlights some issue areas in more detail and includes topics that were not included in Optony’s scope of work as summarized below.

- Need for a Strategic Energy Plan – The impetus and context for the SEP effort is summarized including the 100% renewable electricity goal and the region’s vulnerability to disruption of the electric system.
- Working with Partners – SCE’s RFP and cooperative efforts with neighboring jurisdictions are described.
- Community Goals – The SEP development process included engaging stakeholders to identify community goals and priorities to inform the process of implementation, in addition to the goals identified in the MOU.
- Energy Management Hierarchy – Following the State of California’s established energy resource loading order, and consistent with the City’s General Plan, energy conservation and efficiency are prioritized first, before additional development. Enhanced SCE incentives available now to assist our region in energy conservation and energy efficiency efforts are described.
- Community Outreach – Actions to engage the community and solicit feedback on the SEP are highlighted.
- Energy Justice & Equity – An introduction to the tenets of energy justice is included for consideration during SEP implementation, whereby all people regardless of income or race can have access to the benefits of the City’s transition to clean energy.
- Leading by Example - The City’s commitment with how actions at its own facilities and operations could provide community-wide visibility and build momentum in SEP implementation is discussed. A local leader, Deckers Brands, is included as an example case study.

- Fostering Partnerships – The need to find solutions that cross jurisdictional boundaries and opportunities to continue regional collaboration to support renewable energy goals are discussed.
- Strategic Energy Plan – A summary of the contents of the Strategic Energy Plan is included as an introduction to the second document.

Strategic Energy Plan

Key components of the Draft SEP include an Executive Summary and six chapters with appendices as summarized below.

- Project Origin and Objectives – The primary objective of the SEP is to help the City identify ways in which it could meet the 100% renewable electricity goal, while also recognizing other benefits such as the importance of identified actions to help address regional reliability and resiliency concerns.
- Renewable Energy Potential in Goleta – The SEP assesses the availability of renewable generation within the City, focusing on distributed solar photovoltaic (PV) potential.
- Meeting the 100% Renewable Energy Goal – The SEP identifies the gap in forecasted electricity demand and baseline growth in renewable energy and energy efficiency to determine the necessary scope of the City's actions.
- Obstacles to & Opportunities for Renewable Energy Development – The SEP identifies obstacles for renewable energy and energy efficiency development that are most important and unique to Goleta. One or more potential solutions or opportunities to address each obstacle is suggested and analyzed.
- Recommended Sites for Development - The SEP provides a technical assessment and financial analysis of potential public solar PV project development opportunities in the City. Analysis and discussion of opportunities at private sites is ongoing and confidential without authorization from property owners.
- Specific Recommended Actions and Timeline – The SEP identifies strategies in five program areas for the City to prioritize in order to meet its goal, including regulatory policy-driven actions, actions aimed at changing the electricity supply to Goleta, actions related to financing renewable projects, actions at City facilities, and actions related to outreach and advocacy. For each strategy, the funding and staffing requirements, associated timeline, and energy impacts are estimated.
- Appendices and References – included in the appendices are the detailed statistical solar analysis with a description of the methodology and assumptions; key terms and definitions; and a list of references cited.

Meeting the 100% Electricity Goal

As mentioned above, the SEP includes a forecast of 1) how the City’s electricity consumption is expected to change by 2030; 2) business-as-usual growth in local renewable generation and utility renewable generation to determine the baseline path towards meeting the 100% renewable goal; and 3) the gap between consumption needs and renewable supply, and a calculation of the impact of recommended strategies in bridging the gap.

Goleta electricity demand is forecasted to be 218 GWh (gigawatt-hours) in 2030. Under a business-as-usual (BAU) scenario, at the current rate of local renewable development, current energy efficiency trends, and SCE’s planned electricity mix, the City would achieve 63% renewable electricity by 2030. With implementation of the recommended strategies (excluding the contribution of a Community Choice Energy program), the combination of the utility renewable content, energy savings, and new clean energy sources are projected to bring the city to 70% achievement of the 100% renewable electricity goal. As shown in Figure 1, CCE contributes significantly to the goal, at approximately 64% of the combined strategies contribution (or approximately 30% overall), as a CCE allows the community to determine what type of energy mix serves its needs.

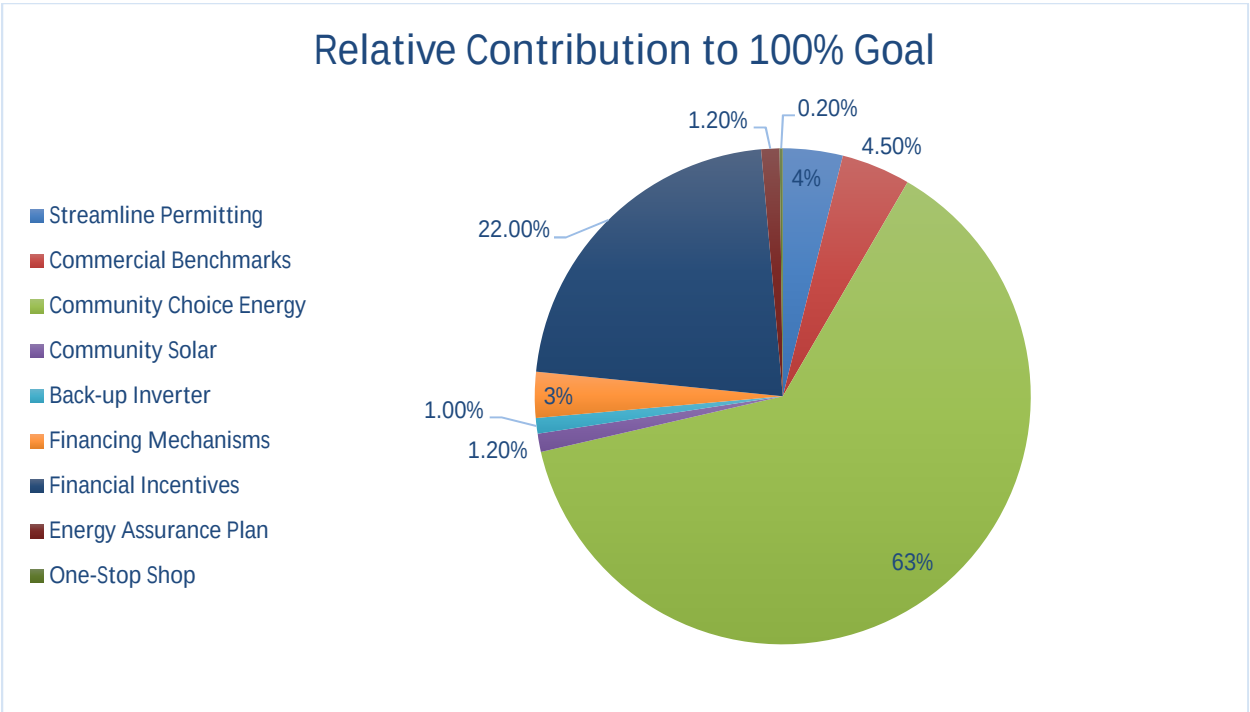


Figure 1: Recommended Strategies – Relative Contribution to 100% Goal

It is important to note that the statewide Renewables Portfolio Standard (RPS)² of 60% utility renewable generation is only credited to the remaining electricity consumption after local renewable generation is accounted for. As a result, as local renewable electricity generation increases, utility renewable generation, whether supplied by an investor-owned utility (IOU) or a Community Choice Aggregation (CCA) program, decreases. As local electricity contributes more of Goleta's supply, less of it is supplied by SCE, resulting in diminishing returns. Goleta can therefore only meet its goal if local renewable generation supplies the entirety of Goleta's needs or if the incoming utility electricity supply is completely renewable. The SEP identifies a potential pathway to reach the City's 100% renewable goal through a mix of local renewable electricity development spurred by the SEP and non-local renewable electricity procured by a CCA program, combined with a declining electrical demand and increased renewable content from the utility.

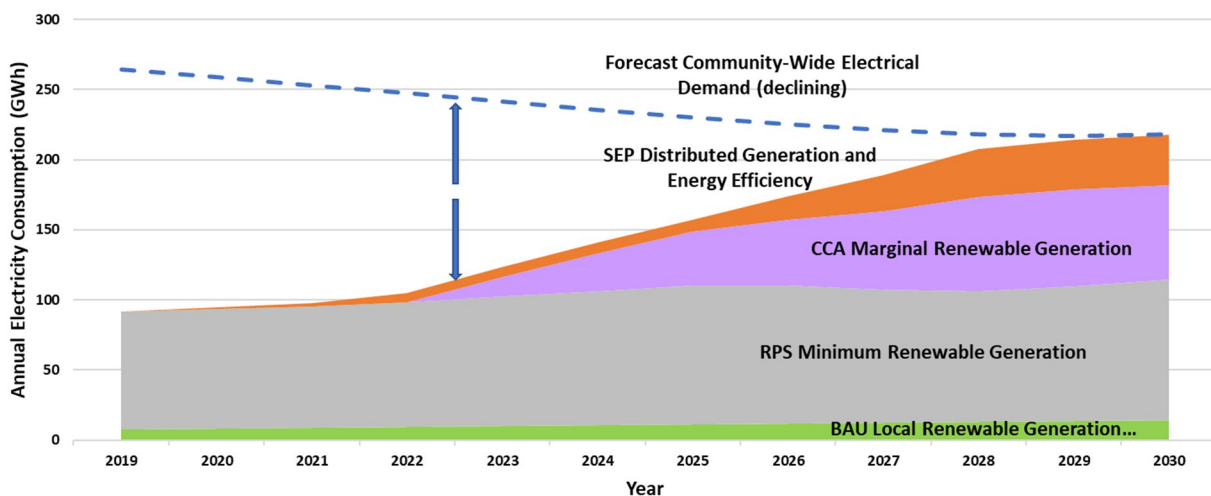


Figure 2: Goleta Renewable Electricity Forecast to 2030 with SEP and CCA

Community Outreach and Stakeholder Involvement

Community outreach and stakeholder involvement are essential to development and implementation of the SEP. Goleta, together with its cooperating partners, the City of Carpinteria and County of Santa Barbara, sought feedback on their respective SEPs through an online community survey, multiple public workshops, and focused stakeholder meetings. These meetings, facilitated by Optony, helped staff and the consultant gain additional insight regarding identified goals, barriers and opportunities, and proposed strategies for incorporation into the SEPs.

Additionally, Goleta staff worked closely with the Public Information Office to develop and provide online options for community updates and input, including the Monarch Press

² The Renewables Portfolio Standard is the state-wide legislation that defines what constitutes as renewable energy and outlines mandates on utility renewable procurement.

newsletter, regular social media posts, and the City and Central Coast Power webpages. The City Council Energy / Green Issue Committee meetings were also utilized to provide updates and solicit public comment on Goleta's draft plan. Looking forward, an identified opportunity for improvement within the SEP implementation public engagement would be incorporating Spanish language inclusion on educational materials and during outreach events.

➤ ***Strategic Energy Planning Community Stakeholder Survey***

As a part of the Strategic Energy Plan kick-off process, the cooperating partners sent out a stakeholder survey to identify the community's energy priorities, any barriers to clean energy development, and community outreach best practices. Respondents to the survey included local organization leaders, businesses, and residents.

The most important reasons identified in the survey to develop clean energy projects were to:

- Mitigate environmental impacts and reduce our contributions to climate change;
- Achieve energy independence, assurance, and resiliency, particularly in times of crisis; and
- Avoid the need to build additional local fossil fuel-based generation.

The top barriers to clean energy development throughout the County included:

- A lack of available funding for renewable energy projects;
- Conflicting views and priorities between political constituents;
- A lack of understanding of the costs and benefits of energy efficiency and solar power generation for homes and businesses;
- A non-existent or uncertain market mechanism for realizing full investment value of clean energy generation; and
- Limited or no options for residents and businesses who cannot host their own clean energy systems due to physical or financial constraints, and/or the split incentives for landlords and tenants.

Many survey respondents indicated that extensive community outreach and education is a necessary component to developing more clean energy in the region. Respondents indicated that public meetings and workshops were by far the most effective outreach method, followed by social media and email newsletters. The responses from the survey helped to inform the SEP outreach process and allowed the jurisdictions to host targeted workshops and outreach to address community concerns and barriers to clean energy development. The Draft SEP reflects public comment submitted and feedback received at public workshops and stakeholder meetings. An FAQ document has also been prepared to respond to specific written input received and is included in Attachment 2.

➤ ***Workshops and Stakeholder Meetings***

A summary of workshops and stakeholder meetings is listed below.

- **March 14, 2019** - the cooperating partners joined the City of Santa Barbara's Strategic Energy Plan Public Stakeholder Symposium in Santa Barbara, which served as an update on the joint effort and as a kick-off for additional public meetings.
- **April 3, 2019** - the cooperating partners held a Strategic Energy Plan Workshop in Carpinteria focused on public agencies. Later that day, the partners held a focused meeting with commercial property stakeholders at Deckers Brands in Goleta.
- **April 4, 2019** - the cooperating partners held a Strategic Energy Plan Workshop in Buellton focused on agricultural property owners.
- **April 5, 2019** - Santa Barbara County held a Strategic Energy Plan Workshop in Santa Maria focused on Opportunity Zones.
- **May 15, 2019** - the cooperating partners joined the City of Goleta's Strategic Energy Plan Workshop at the Goleta Valley Community Center as described in more detail below.

➤ ***City of Goleta Strategic Energy Plan Workshop***

On Wednesday, May 15, 2019, a public workshop focused on Goleta's Draft Strategic Energy Plan was held at the Goleta Valley Community Center from 5:30-7:00 PM. Staff from the Sustainability Program were joined by representatives from the County of Santa Barbara and the City of Carpinteria. The consultant provided an overview of the Draft Plan, including analysis of renewable energy potential in Goleta (solar PV), a gap analysis of what's needed to meet the 100% renewable goal, recommended strategies to help bridge the gap, and information on battery storage.

Feedback was solicited from the approximately 30 attendees on the community's goals and priorities for the project, as well as interest in specific recommended strategies and how best to activate community involvement during implementation. The community outreach and education strategies included consideration of public-facing demonstration projects and behavior-based approaches. A summary of feedback received from participants on these topics is included in Attachment 3.

➤ ***City Council Energy & Green Issues Standing Committee***

The City Council's Energy / Green Issues Standing Committee received briefings and updates on the SEP process nine times between February 2018 and June 2019. On June 12, 2019, the Committee unanimously recommended the City Council approve the SEP and Overview in fulfillment of Resolution 17-52 work plan requirements.

Environmental Review

Staff has assessed the environmental impact of the Strategic Energy / 100% Renewable Electricity Plan in accordance with the State Guidelines for the Implementation of the California Environmental Quality Act (CEQA), and found the program to be exempt from additional CEQA review pursuant to CEQA Guidelines §15378(b)(4-5) and §15262.

As described in more detail in Attachment 1, Exhibit 1, pursuant to CEQA §15378(b)(4-5), the development of the Strategic Energy / 100% Renewable Electricity Plan does not constitute a “Project” under CEQA, since adoption of the plan is a simple organizational or governmental activity and does not commit the City to any specific development or construction activity that may result in a potentially significant impact on the environment. Later, as specific projects within the SEP are recommended for implementation, project-specific environmental review would be conducted in conformance with the provisions of CEQA. Therefore, the adoption of the plan would fall under CEQA Statutory Exemption §15262 [Feasibility and Planning Studies], which, pursuant to §15374, requires only the filing of a Notice of Exemption (NOE), included as Exhibit 1 to the Resolution.

Next Steps / Implementation

Upon adoption of the Strategic Energy / 100% Renewable Electricity Plan, the focus of the work will shift from program development to program implementation. Resources will be required to proceed with the implementation phase depending on the specific action, potentially including technical expertise, additional staff, continued outreach, and plan monitoring and evaluation. It is acknowledged that such actions may require additional, separate, project-specific analysis and approval and budget allocation, with opportunity for decision-maker and public review and input. To address resource constraints, continued collaboration on existing regional efforts such as the Tri-County Regional Energy Network and the Santa Barbara County Climate Collaborative will support and complement implementation of the plan.

Summary and Conclusion

In 2017, what started as a local effort championed by the environmental community to inspire the City to join a national movement committing to 100%, clean renewable energy, soon became the driving force behind the development of the City’s first Strategic Energy Plan. In support of the 100% Renewable Electricity goal, the City has conducted a strategic energy planning development process emphasizing stakeholder outreach to encourage renewable energy development.

It is hoped that by analyzing renewable potential, benchmarking current progress, identifying high-priority sites as well as obstacles and opportunities, strategies can be pursued that sets the City on a path to a 100% renewable electricity supply. Approving this plan for implementation would allow Goleta to showcase its environmental leadership and demonstrate that it is contributing to larger efforts to create a sustainable community.

GOLETA STRATEGIC PLAN:

The recommended items in this report relate to the following 2019-2021 Strategic Plan strategies, goals, and objectives:

City-Wide Strategy: Support Environmental Vitality

Strategic Goal: Promote renewable energy, energy conservation and local energy resiliency

Objectives:

- Implement the Strategic Energy Plan in furtherance of the City's adopted 100% renewable energy goals
- Encourage energy conservation through enhanced insulation, LED replacement lighting and similar measures, including at City-owned facilities
- Encourage renewable energy generation and use through installation of solar panels, electric vehicle charging stations and similar measures, including at City-owned facilities
- Explore adoption of a "Reach" Building Code
- Continue to work with the Santa Barbara County Climate Collaborative to share resources to address climate change

Strategic Goal: Adopt best practices in sustainability

Objective:

- Participate in the Central Coast Power consortium of local governments to explore the feasibility of Community Choice Energy

FISCAL IMPACTS:

There is no immediate fiscal impact associated with adoption of the Strategic Energy / 100% Renewable Electricity Plan. However, if the SEP is supported, the City will need to build on its organizational staffing capacity and plan for financial resources to support the efforts and implement the plan.

Consistent with the Resolution 17-52 requirements, Optony provided estimated funding and staffing requirements by strategy, a summary estimate of FTE requirements by year, and total cost by staffing position and year until 2030³, as well as supporting consultant costs, capital expenditures, and project development costs. Beyond existing staffing and a CivicSpark Fellow, these estimates include a new Assistant Sustainability Coordinator position with 0.5 FTE devoted to SEP implementation and 0.5 FTE devoted to non-SEP related sustainability program work. The total cost over a 12-year period for SEP implementation is \$3.83M⁴ that includes \$282K for the new position for SEP-related work,

³ Due to assumptions made during SEP impact modeling, the estimated funding and staffing for Strategy 6.3.2: Offer Financial Incentives extends through 2032. The final two years of estimated costs for this strategy are not included in this report but have been provided to City staff. This strategy is slated for implementation beginning in 2024, giving the City ample time to consider the exact annual budget requirements for the program.

⁴ This number excludes costs for existing staff time and a CivicSpark fellow.

\$800K for outsourced consulting, \$1.5M in incentives, and \$1.2M for implementation options related to Energy Assurance Plan equipment purchases.

It is requested that if the SEP is supported, the City Council identify priorities for specific implementation actions based on the recommended strategies in the SEP. To assist in this regard, the table below summarizes recommended strategies, the percentage contribution to the 100% Renewable Electricity goal, capital and consulting costs, associated time allocated for those costs, and the 2030 annual electricity impact associated with implementation of the strategy.

Strategy	% Contribution to Goal	Capital & Consulting Costs	Years	2030 Annual Electricity Impact
6.1.1 Review & Update Ordinances	1.9%	\$10K	1	4 GWh
6.1.2 Commercial Benchmarking	2.2%	\$230K	11	5 GWh
6.2.1 Community Choice Energy	30.7%	\$75K	3	67 GWh
6.2.2 Community Solar	0.6%	\$140K	11	1.4 GWh
6.2.3 Pilot Back-up Inverter Program	0.4	\$25K	2	1 GWh
6.3.1 New Financing	1.4%	\$85K	11	3.1 GWh
6.3.2 Financial Incentives	10.4%	\$1.74M	9	23 GWh
6.4.1 Energy Assurance Plan	0.6%	\$80K + \$1.2M to implement ⁵	3	1.3 GWh
6.5.1 One-Stop-Shop	0.1%	-	12	0.2 GWh

Optony's staffing estimates for implementation are preliminary, subject to City's independent determination. Actual staffing needs will depend on specific implementation actions undertaken by the City following adoption of the plan and will require evaluation within the context of the City's overall budget, existing staffing and workload.

ALTERNATIVES:

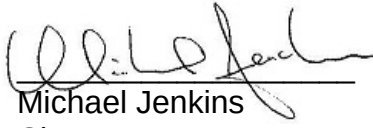
The Council has set a visionary target to transition to clean energy in the form of the adopted renewable energy goal. Participation in County-wide efforts to address energy security has shown a strategic commitment to creating a more resilient community in the face of vulnerabilities in the regional electricity grid. The Strategic Energy / 100%

⁵ This cost assumes the use of PPAs, as available. The estimated capital is reserved to maintain flexibility for the City by enabling cash purchase of equipment, if a desirable PPA is not available, enabling the City to buy down cost of a PPA with upfront investment or to buy out PPAs and own the systems outright (which would have payback and resilience benefits).

Renewable Electricity Plan is provided in support of the goal. The City Council may elect to adopt the Plan as proposed, further amend the Plan, or decide not to adopt it.

Legal Review By:

Approved By:


Michael Jenkins
City Attorney


Michelle Greene
City Manager

ATTACHMENTS:

1. City Council Resolution 19-__: "A Resolution of the City Council of the City of Goleta, California, Adopting the City of Goleta Strategic Energy / 100% Renewable Electricity Plan."
 - a. Exhibit 1 – Notice of Exemption for the Strategic Energy / 100% Renewable Electricity Plan
 - b. Exhibit 2 – Reaching 100%: An Overview of Goleta's Strategic Energy Plan
 - c. Exhibit 3 – Strategic Energy Plan
2. Public Comments / FAQ
3. May 15, 2019 Workshop Feedback

ATTACHMENT 1

City Council Resolution 19-__: “A Resolution of the City Council of the City of Goleta, California, Adopting the City of Goleta Strategic Energy / 100% Renewable Electricity Plan.”

- a. Exhibit 1 – Notice of Exemption for the Strategic Energy / 100% Renewable Electricity Plan
- b. Exhibit 2 – Reaching 100%: An Overview of Goleta’s Strategic Energy Plan
- c. Exhibit 3 – Strategic Energy Plan

RESOLUTION NO. 19-____

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF
GOLETA, CALIFORNIA, ADOPTING THE CITY OF GOLETA
STRATEGIC ENERGY / 100% RENEWABLE ELECTRICITY PLAN**

WHEREAS the Goleta General Plan / Coastal Land Use Plan (General Plan) is a comprehensive, long-term plan that guides land use and physical development of the geographic area of the incorporated City limits; and

WHEREAS the General Plan sets forth an objective under Policy CE 13 Energy Conservation “to promote energy efficiency in future land use and development within Goleta, encourage use of renewable energy sources, and reduce reliance upon fossil fuels”; and

WHEREAS, on December 5, 2017, the Goleta City Council adopted Resolution 17-52, adopting a goal of 100% renewable electricity use by municipal facilities and 100% renewable electricity supply for the community by 2030; and

WHEREAS, in response to the direction provided in Resolution 17-52 to develop a work plan including options, methods, and financial resources needed and an associated timeline and milestones to achieve these renewable energy goals, City staff initiated the preparation of a Strategic Energy / 100% Renewable Electricity Plan (Plan); and

WHEREAS the transition to 100% renewable energy can provide a range of benefits including improved air quality, enhanced public health, increased energy security, and local green jobs;

WHEREAS, consistent with the City’s legislative platform, in 2017 Mayor Perotte joined the Climate Mayors organization (aka the Mayors National Climate Action Agenda), pledging to work together with other U.S. mayors to strengthen local efforts for reducing greenhouse gas emissions; and

WHEREAS there is strong scientific consensus regarding the reality of climate change and the connection between human activity, especially the combustion of fossil fuels that create greenhouse gases, and warming of the planet; and

WHEREAS the combustion of fossil fuels, through direct emissions and through secondary climate change impacts, poses a threat to human and environmental health globally through increased air and water pollution, sea level rise, climate-driven drought and extreme weather events, and accelerated loss of species and habitats; and

WHEREAS replacing fossil fuel-derived energy with renewable energy sources for both municipal facilities and throughout the community is critical to achieving the greenhouse gas emission reduction goals set forth in the City's Climate Action Plan adopted by the City Council on July 15, 2014, and

WHEREAS the City of Goleta is already taking action to promote energy reduction and efficiency, including light emitting diode (LED) retrofits of lighting in municipal buildings, acquisition and LED retrofit of the streetlight system, and the adoption of sustainability-focused policy requirements and incentives such as the "Reach Code" and the Green Building Program; and

WHEREAS the City desires to identify and evaluate additional opportunities to augment its use of renewable energy; and

WHEREAS, at nine meetings between February 2018 and June 2019, the City Council Energy and Green Issues Standing Committee received presentations on and considered a Strategic Energy / 100% Renewable Electricity Plan, and on June 12, 2019, requested the Plan be brought forward to the City Council for adoption; and

WHEREAS the Strategic Energy / 100% Renewable Electricity Plan is an informational document only and does not impose requirements on City actions; and

WHEREAS the Strategic Energy / 100% Renewable Electricity Plan is exempt from the California Environmental Quality Act (CEQA) as it meets the definition of a Feasibility or Planning Study under CEQA Guidelines § 15262; and

WHEREAS the City Council conducted a duly noticed public hearing on July 16, 2019 to consider the Strategic Energy / 100% Renewable Electricity Plan, at which time all interested persons were given an opportunity to be heard; and

WHEREAS the City Council considered the entire administrative record, including the staff report, the Notice of Exemption, the contents of the Strategic Energy / 100% Renewable Electricity Plan, and oral and written testimony from interested persons.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GOLETA, AS FOLLOWS:

SECTION 1. *Recitals.* The City Council hereby finds and determines that the foregoing recitals, which are incorporated herein by reference, are true and correct.

SECTION 2. *Findings.*

- A. The City Council finds that the Notice of Exemption for the Strategic Energy / 100% Renewable Electricity Plan, referred to as Exhibit 1 of Attachment 1, was prepared in full compliance with CEQA. The City Council finds, in light of the whole record, that the Project is exempt from environmental review pursuant to (1) CEQA Guideline § 15378(b)(4-5), where the development of the Strategic Energy / 100% Renewable Electricity Plan does not constitute a “Project” under CEQA, since adoption of the plan is a simple organizational or governmental activity and does not commit the City to any specific development or construction activity that may result in a potentially significant impact on the environment and (2) CEQA Guideline § 15262 which exempts Planning and Feasibility Studies for future actions which the agency has not approved, adopted, or funded and does not have a legally binding effect on future actions.

SECTION 3. *Action.* The City Council hereby adopts the City of Goleta Strategic Energy / 100% Renewable Electricity Plan.

SECTION 4. *Reliance on Record.* Each and every one of the recommendations in this Resolution is based on the competent and substantial evidence, both oral and written, contained in the entire record relating to the Strategic Energy / 100% Renewable Electricity Plan. The findings and determinations constitute the independent findings and determinations of the City Council in all respects and are fully and completely supported by substantial evidence in the record as a whole.

SECTION 5. *Summaries of Information.* All summaries of information in the findings, which precede this section, are based on the substantial evidence in the record. The absence of any particular fact from any such summary is not an indication that a particular finding is not based in part on that fact

SECTION 6. This Resolution will remain effective until superseded by a subsequent resolution.

SECTION 7. *Certification.* The City Clerk shall certify to the passage and adoption of this resolution and enter it into the book of original resolutions.

PASSED, APPROVED AND ADOPTED this 16th day of July, 2019.

PAULA PEROTTE, MAYOR

ATTEST:

APPROVED AS TO FORM:

DEBORAH S. LOPEZ
CITY CLERK

MICHAEL JENKINS
CITY ATTORNEY

STATE OF CALIFORNIA)
COUNTY OF SANTA BARBARA) ss.
CITY OF GOLETA)

I, DEBORAH S. LOPEZ, City Clerk of the City of Goleta, California, DO
HEREBY CERTIFY that the foregoing Resolution No. 19-__ was duly adopted by
the City Council of the City of Goleta at a regular meeting held on the 16th day of
July, 2019, by the following vote of the Council:

AYES:

NOES:

ABSENT:

(SEAL)

DEBORAH S. LOPEZ
CITY CLERK

EXHIBIT 1

Notice of Exemption for the Strategic Energy / 100% Renewable Electricity Plan

NOTICE OF EXEMPTION (NOE)

To: ☐ Office of Planning and Research
P.O. Box 3044, 1400 Tenth St. Rm. 212
Sacramento, CA 95812-3044

From: City of Goleta
130 Cremona Drive, Suite B
Goleta, CA 93117

☐ Clerk of the Board of Supervisors
County of Santa Barbara
105 E. Anapamu Street, Room 407
Santa Barbara, CA 93101



Subject: Filing of Notice of Exemption

Project Title: Strategic Energy / 100% Renewable Electricity Plan

Project Applicant: City of Goleta

Project Location (Address and APN): Citywide

Description of Nature, Purpose and Beneficiaries of Project:

The City of Goleta's Strategic Energy / 100% Renewable Electricity Plan includes two components:

1. Goleta's Pathway to 100% Renewable Electricity (Overview), and
2. Strategic Energy Plan: City of Goleta

The Strategic Energy / 100% Renewable Electricity Plan is a general planning document that assesses existing conditions and identifies possible improvements to the City's electrical infrastructure and local clean energy programs. The Strategic Energy / 100% Renewable Electricity Plan also supports objectives in the City's General Plan. The strategies, design concepts and locations are conceptual in nature and do not constitute engineering level analyses of any project, but instead presents these concepts for future implementation.

The City's Strategic Energy / 100% Renewable Electricity Plan identifies a range of strategies to overcome barriers to renewable energy development projects including regulatory policy-driven actions, financing options, outreach approaches, and options for solar energy and energy efficiency upgrades at the Goleta Valley Community Center, Goleta Public Library, and Goleta City Hall.

As a local-level feasibility and planning study, the Strategic Energy / 100% Renewable Electricity Plan outlines a broad range of community strategies and improvements for public facilities that will be developed and constructed when Council directs project funding and prioritization. When required and depending on the location and scope of each project, project-specific CEQA analyses will be performed for the future projects.

Name of Public Agency Approving the Project: City of Goleta

Name of Person or Agency Carrying Out the Project: City of Goleta

Exempt Status: (check one)

- ☐ Ministerial (Sec. 15268)
- ☐ Declared Emergency (Sec. 15269 (a))
- ☐ Emergency Project (Sec. 15269 (b) (c))
- ☒ Statutory Exemption (Sec. 15262)
- ☐ Categorical Exemption: (Insert Type(s) and Section Number(s))
- ☒ Other: (Sec 15378(b)(4-5))

Reason(s) why the project is exempt:

In accordance with Article 18 (Statutory Exemptions) of the State Guidelines for the Implementation of CEQA, the adoption of the Strategic Energy / 100% Renewable Electricity Plan is not a legally binding activity and is, therefore, exempt from CEQA pursuant to CEQA Guidelines § 15262 (Feasibility and Planning Studies), which states:

A project involving only feasibility or planning studies for possible future actions which the agency, board, or commission has not approved, adopted, or funded does not require the preparation of an EIR or Negative Declaration but does require consideration of environmental factors. This section does not apply to the adoption of a plan that will have a legally binding effect on later activities.

Consistent with this exemption, the Strategic Energy / 100% Renewable Electricity Plan is a local-level feasibility and planning study, which provides a broad range of policy and renewable energy improvements that will be developed further when project-specific funding and prioritization occurs. The Strategic Energy / 100 % Renewable Electricity Plan does not adopt any specific policy or put in place any action which would cause a physical change to the environment. If any physical project contemplated by the Strategic Energy / 100% Renewable Electricity Plan moves forward, a separate analysis of potential environmental impacts pursuant to CEQA will be performed at that time. The Strategic Energy / 100% Renewable Electricity Plan will not have a legally binding effect on later activities as it is only a planning study and does not contain any mandatory measures or amendments to the GP/CLUP and/or Municipal Code.

There is no substantial evidence that there are unusual circumstances (including future activities) resulting in (or which might reasonably result in) significant impacts which threaten the environment. Therefore, the Strategic Energy / 100% Renewable Electricity Plan satisfies all the criteria of CEQA Guidelines, § 15262 and is exempt from CEQA. Further, the activity is not a project as defined in Section 15378 of the CEQA Guidelines as it has no potential for resulting in physical change to the environment, directly or indirectly.

City of Goleta Contact Person and Telephone Number:

Peter Imhof

Director, Planning & Environmental Review

Date

If filed by the applicant:

1. Attach certified document of exemption finding
2. Has a Notice of Exemption been filed by the public agency approving the project?
☐Yes ☐No

Date received for filing at OPR: _____

Note: Authority cited: Section 21083 and 211110, Public Resources Code
Reference: Sections 21108, 21152.1, Public Resources Code

EXHIBIT 2

Reaching 100%: An Overview of Goleta's Strategic Energy Plan

The Plan is also available online at

<https://www.cityofgoleta.org/projects-programs/sustainability-climate-adaptation/strategic-energy-plan>



REACHING 100%: AN OVERVIEW OF GOLETA'S STRATEGIC ENERGY PLAN

PREPARED BY

City of Goleta

Planning & Environmental Review

130 Cremona, Suite B Goleta,

California 93117

www.cityofgoleta.org

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Greetings, Goleta.

A LETTER FROM THE MAYOR

On December 5, 2017, the City of Goleta joined a group of over 100 cities in the United States committed to transitioning to 100 percent clean energy. The resolution to be part of this group passed unanimously and is an ambitious, important goal to help make our community more resilient in the face of change.

At the 2019 State of the City Address, I conveyed the principles I believe are necessary to create a vision and guide future actions for how, together, we can transform Goleta the Good Land into Goleta the Great Land.

These principles include:

1. **Be People-Oriented**
2. **Pursue and Achieve Public Trust and Participation**
3. **Gain Leverage through Cooperation**
4. **Achieve and Assure Sustainability**

It is my hope that this Strategic Energy Plan, developed cooperatively with our regional partners, will inspire future collaboration in order to protect our quality of life and advance equity, create jobs, improve public health, and minimize Goleta's contribution to climate change. When joining the Climate Mayors organization in 2017, I pledged to work together with mayors around the country to strengthen local efforts for reducing greenhouse gas emissions. The 100% Renewable Energy Goal and the supporting Strategic Energy Plan do just that.

To become a 100% renewable city in the electricity sector, we need to foster and strengthen partnerships between all levels of government, utilities, businesses, non-profits, neighborhoods and citizens of our community. Now is the time for us to join together to create our own vision of what could be Goleta, the Great Land. I invite you to join us in implementing strategies to make 100% clean energy a reality for Goleta.

Mayor Paula Perotte

REACHING 100%

WHY A STRATEGIC ENERGY PLAN

In 2017, what started as a local effort championed by the environmental community to inspire our leaders to join a national movement committing to 100%, clean renewable energy, soon became the driving force behind the development of the City's first Strategic Energy Plan. On December 5, 2017, the City Council unanimously adopted Resolution 17-52 which identified the following 100% Renewable Energy Goals for the electricity sector for both municipal facilities and for the City at large by 2030:

- 1) 100% of electricity use by municipal facilities to come from renewable sources by 2030, including at least 50% of electricity use from renewable sources by 2025; and
- 2) 100% of electricity for the City's community electricity supply to come from renewable sources by 2030.

Resolution 17-52 requires that the City develop a work plan to identify how it will reach the renewable energy goals including options, methods, financial resources needed, and an associated timeline.

This introductory document and the City's attached Strategic Energy Plan (SEP) together constitute the City's 100% Renewable Electricity Work Plan in fulfillment of Resolution 17-52 requirements. This Strategic Energy Plan charts a path to 100% clean energy in the electricity sector and is intended to be utilized as a foundation for more detailed planning and budgeting.

CHALLENGES TO RELIABILITY AND RESILIENCY

Our region faces serious threats to reliability and resiliency due to its geographic location at the end of Southern California Edison's (SCE) high-voltage transmission lines. Specifically, the area is at risk of experiencing a prolonged electrical outage should the two transmission lines serving the area experience a simultaneous disruption. This vulnerability was highlighted when, on December 4, 2017, the Thomas Fire began northwest of Santa Paula and by the following afternoon it had headed north, burning 70 square miles. It was against this backdrop of the rapidly advancing wildfire on December 5, 2017 that the City Council adopted the renewable energy goals.

The severity of the Thomas Fire underscores the region's vulnerability, but an emergency such as wildfire, debris flow, earthquake or other catastrophic event is not the only risk to maintaining continued electrical service. The State's investor-owned electric utilities, including SCE, may shut off electric power, referred to as "de-energization" or Public Safety Power Shut-offs (PSPS), to protect public safety during extreme weather conditions. During a PSPS, all customers serviced by an affected power line will have their power shut off, and such power outages could last multiple days depending on the severity of the weather and other factors.

PUBLIC SAFETY POWER SHUT-OFFS

A Public Safety Power Shut-off (PSPS) is an operational practice that Southern California Edison (SCE) may use to preemptively shut off power in high fire risk areas to reduce fire risk during extreme and potentially dangerous weather conditions[1]. Allowed by the California Public Utilities Code to protect public safety, the decision and action to turn off power is made by SCE and is based on a combination of factors. Factors include, but are not limited to those listed to the right[2].

SCE intends to provide early warning notification approximately 48 hours in advance of a potential PSPS event, with ongoing updates through social media, local news outlets and their website. There may be situations which prevent SCE from providing advance notice. Therefore, to learn more about ways to be prepared before, during, and after an extended power outage visit:

HIGH
WINDS



LOW
HUMIDITY



DRY
VEGETATION



FIRE
THREAT



RED FLAG
WARNING



REAL-TIME
OBSERVATIONS



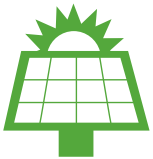
**PREPAREFORPOWERDOWNS.COM and
SCE.COM/OUTAGES**



WORKING TOGETHER

Shortly following the City's adoption of its 100% Renewable Energy goals, SCE released a Request for Proposals asking developers to propose energy projects in our region that would meet long-term local capacity requirements through preferred resources including solar, wind, energy storage, energy efficiency and energy conservation; and which could also help meet resiliency objectives in the Goleta/Santa Barbara area in the event of an outage. In response to this solicitation by SCE, the County of Santa Barbara led a cooperative effort to hire a consultant to provide strategic energy planning services.

Seeing the strategic energy planning effort as a way to support achievement of the 100% renewable electricity goals and help address the need for electrical resiliency in event of a Public Safety Power Shut-off or an emergency such as wildfire, debris flow, earthquake or other catastrophic event, the City entered into a Memorandum of Understanding (MOU) to cooperate with the County of Santa Barbara and the City of Carpinteria on a Strategic Energy Planning Services contract with Optony, Inc., the consultant. Optony's services include developing a county-wide strategic energy plan (SEP), and individual SEPs for the cities of Goleta and Carpinteria utilizing the following approach:



CONDUCT STUDY OF RENEWABLE ENERGY RESOURCE POTENTIAL



DETERMINE BARRIERS TO LOCAL RENEWABLE ENERGY DEVELOPMENT



DEVELOP STRATEGIES TO OVERCOME BARRIERS



IDENTIFY HIGH-POTENTIAL SITES FOR ENERGY DEVELOPMENT



HOST WORKSHOPS FOR COMMUNITY OUTREACH AND ENGAGEMENT



COMMUNITY IDENTIFIED GOALS

Throughout the process of developing the Strategic Energy Plan, we engaged a diverse set of stakeholders to identify community goals and priorities for the 100% renewable energy transition. These priorities will inform the process of implementation as the City reaches its 2030 goal.



PRIORITIES FOR GOLETA'S ENERGY FUTURE

- **RESILIENCE** - Utilize local clean energy sources to maintain quality of life and access to energy during planned and unplanned outages
- **REDUCED CARBON EMISSIONS** - Focus on future electricity sources that do not produce carbon emissions or contribute to climate change
- **PUBLIC SAFETY**- Emphasize local development to minimize risks and disruptions for residents and businesses
- **COLLABORATION** - Coordinate with local businesses, community groups, neighboring local governments, special districts, and others to implement the SEP
- **SELF RELIANCE** - Match local generation with local consumption to reduce reliance on vulnerable long distance transmission lines

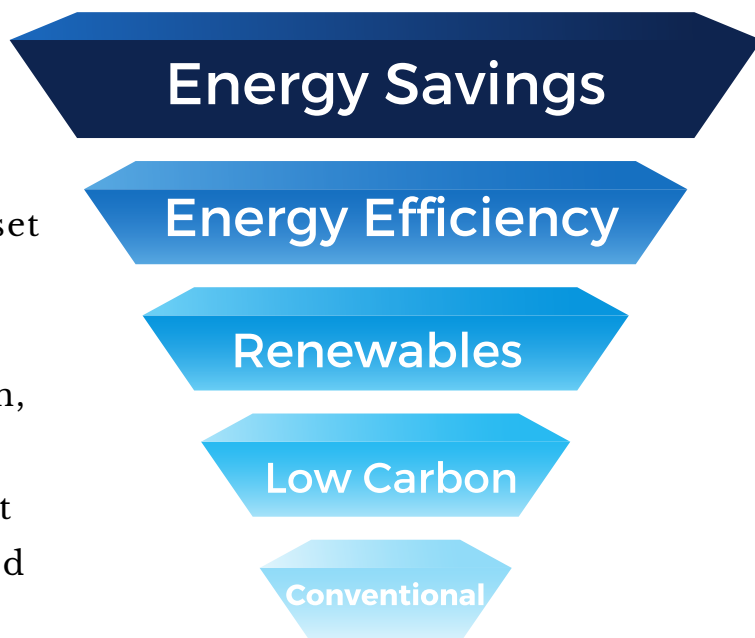
ENERGY EFFICIENCY FIRST



ENERGY MANAGEMENT HIERARCHY

In 2003, following the energy crisis of 2000-2001, the State of California's energy agencies established an energy resource loading order to guide energy decisions. The loading order defines a set of preferences for meeting California's future energy resource needs, starting with energy efficiency and conservation, including demand response. This is followed by adding new generation first through renewable energy resources and distributed generation, and finally by improving infrastructure including re-powering or adding new natural gas-fired generators.

The City's approach in the SEP will be to follow a similar Energy Management Hierarchy so that the reduction of energy use through conservation is prioritized first, followed by a focus on energy efficiency and renewable energy production before conventional energy production from non-renewable natural resources. This approach is consistent with City's General Plan which sets forth an objective under Policy CE 13 Energy Conservation, "to promote energy efficiency in future land use and development within Goleta, encourage use of renewable energy sources, and reduce reliance upon fossil fuels."



INCENTIVES FOR ENERGY EFFICIENCY AVAILABLE NOW

There are substantial financial incentives currently available for energy efficiency improvements through the end of 2020. In order to replace lost electrical supply capacity resulting from planned closures of multiple coastal power generating stations that are scheduled to occur by December 31, 2020, SCE has contracted with Onsite Energy Corporation to implement the Local Capacity Requirements (LCR) Program. The LCR rebates are designed to encourage customer participation, with Goleta customers receiving \$800 per kW reduction of measured capacity demand savings. For a free audit of savings and incentive potential or more information, please contact:

Paul Harris; 760-585-8895; pharris@onsiteenergy.com



LOCAL SOLAR PROGRAM



The City of Goleta is partnering with the Community Environmental Council (CEC) and several other local jurisdictions to encourage residential solar development through CEC's Solarize program. CEC's Solarize program helps homeowners step-by-step throughout the solar installation process, and utilizes group purchasing to offer discounts on home systems. As of early 2019, CEC has helped 736 local homeowners, bringing 3.5 megawatts of solar to the Central Coast through the Solarize Program. The program dates for 2019 are from May 30th to August 31st, and homeowners within the SCE service territory who own a home suitable for solar installation can take advantage of up to a 20% discount on their system. For more information, please visit SolarizeSB.org or contact info@cecsolarize.org.

COMMUNITY OUTREACH & STAKEHOLDER INVOLVEMENT

Stakeholder involvement and community outreach are essential to the success of the Strategic Energy Plan and the City's transition to 100% renewable energy. Actions to date to solicit feedback and engage the community on the issues and topics surrounding energy have spanned several jurisdictions and many stakeholder groups.

In addition to public workshops and community stakeholder meetings, the City of Goleta has provided progress updates to the community through the City Council Green Committee Meetings, the Monarch Press newsletter, and regular social media posts. These touch points have helped raise awareness of the Strategic Energy Plan progress and welcomed additional community feedback on the draft versions of the Strategic Energy Plan. With the community input received, staff was able to identify barriers to clean energy development and craft best-fit strategies that address those barriers. While the Strategic Energy Plan outreach has been extensive, there are many opportunities to reach the Goleta community through alternative strategies. An identified opportunity for improvement within Goleta's Strategic Energy Plan community outreach would be incorporating Spanish language inclusion on educational materials and during events in order reach to historically underserved communities.



COMMUNITY WORKSHOPS TIMELINE

3/14/19 - Strategic Energy Symposium

This workshop was co-hosted with the City of Santa Barbara. While the primary focus of this public workshop was to review the City of Santa Barbara's Strategic Energy Plan, the County and the cities of Carpinteria and Goleta kicked off their public engagement process with an overview on the progress of their respective plans.



4/3/19 - Public Agencies Workshop

This workshop explored the barriers and opportunities for public agencies to invest in local renewable energy projects. Attended by local government, school district, and special district employees, this event served as an opportunity to share best practices, navigate potential projects, and hear about Carpinteria Valley Water District's experience with their 180 kw solar project.

4/3/19 - Commercial Property Stakeholder Meeting

This roundtable discussion focused on identifying barriers to commercial property stakeholder investment in solar or energy efficiency projects. Main topics of this meeting included addressing the split incentive issue for property owners and tenants, and identifying potential financing structures that could incentivize landowners.

4/4/19 - Agricultural Workshop

This workshop focused on the opportunities for the grower-shipper and landholding agricultural communities to include solar energy as a potential profit stream. Limitations in designated Williamson Act properties and potential opportunities to overcome those barriers were explored.



5/15/19 - Goleta Strategic Energy Plan Workshop

This workshop highlighted the specifics of Goleta's Strategic Energy Plan, soliciting feedback on the identified strategies in the plan, community priorities for the transition to 100% renewable energy, and best practices for community outreach on the topic of energy.

4/5/19 - Opportunity Zones Workshop

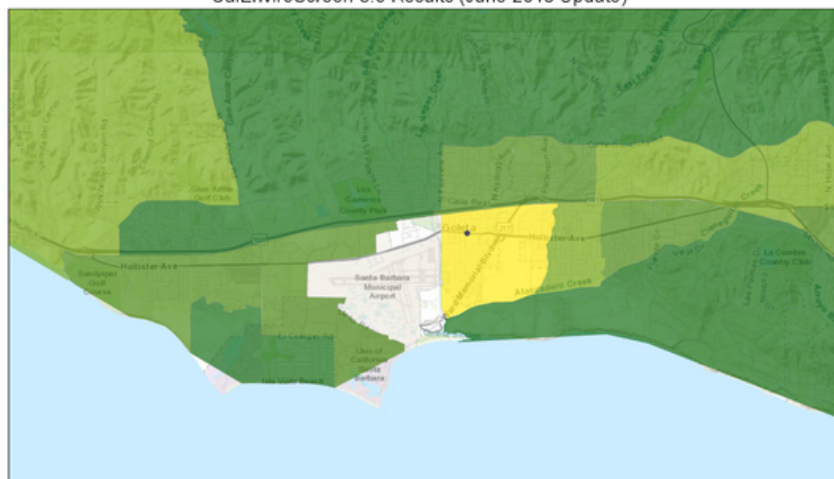
The Opportunity Zones workshop focused on the tax benefits available for businesses and developers investing in economically underserved regions in the County, and how clean energy projects can be a part of potential investments. Topics of discussion included urban solar pilot projects and utility scale solar in agricultural areas in the County.

Goleta's Commitment to **ENERGY JUSTICE & EQUITY**

Goleta is committed to making the transition to 100% renewable energy equitable. As revealed by the Fourth National Climate Assessment[3], the impacts of climate change disproportionately affect low income communities and communities of color, often exacerbating the pre-existing pollution burdens and inequitable conditions. Impacts include an expected rise in energy use and potential increase in energy burden (the percentage of gross household income spent on energy costs) for low income families, as there is predicted to be a spike in commercial and residential cooling costs as the climate continues to warm.

While California has relatively low energy burdens when compared with the rest of the United States due to its long term investments in energy efficiency, a 2016 report by the American Council for an Energy-Efficient Economy and Energy Efficiency for All found that low income families as well as Latino and African-American families still have higher energy burdens than the median household in California[4]. Acknowledging these existing conditions and the impacts of a changing climate, Goleta will work to provide options so that all residents regardless of income or race can have access to the benefits of the City's clean energy transition.

CalEnviroScreen 3.0 Results (June 2018 Update)



5/9/2019, 5:21:44 PM
CalEnviroScreen 3.0 Results (June 2018 Update)

1 - 10% (Lowest Scores)	21 - 30%
11 - 20%	51 - 60%

0 0.5 1 1.5 2 MI
0 0.75 1.5 3 km
Source: Env. H&M, Geom. Informatics, Increment P. Env. H&M, USGS, F&D, NPS, NOAA, GeoBasis, IGN, K&S&S, N&S, Ordinance Survey, Esri Japan, NITD, Esri China (Hong Kong), Esri OpenStreetMap contributors, and the GIS User Community
Web Application for ArcGIS
Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, USGS, METANSA, NSA, EPA, USDA, (2014)

GOLETA'S POLLUTION BURDEN

While Goleta as a whole benefits from a low pollution burden in comparison with the rest of California, certain regions are affected more than others. Old Town Goleta suffers from a higher pollution burden than the rest of the City, highlighting existing inequities within our own community.

(CalEnviroScreen 3.0 CAL OEHHHA)

ENERGY JUSTICE & EQUITY (continued)

Through the adoption and implementation of the Strategic Energy Plan, Goleta will work to adhere to the tenets of energy justice, the foundation of which is based on the principle that all people should have access to safe, affordable, and reliable sources of energy. Energy justice is also based on the concept that no one group of people should have a disproportionate share of costs, negative impacts, or externalities associated with building, operating, and maintaining electric power generation, transmission, and distribution systems[5]. When planning for and implementing policies to support the renewable energy goals, consideration of the four types of equity as defined by the Urban Sustainability Directors Network could help the City to embed equity into the process.

Four Types of Equity

- **Procedural (Inclusion):** inclusive, accessible, authentic engagement and representation in the process to develop or implement programs or policies.
- **Distributional (Access):** programs and policies result in fair distributions of benefits and burdens across all segments of a community, prioritizing those with highest need.
- **Structural:** decision-makers institutionalize accountability; decisions are made with a recognition of the historical, cultural, and institutional dynamics and structures that have routinely advantaged privileged groups in society and resulted in chronic, cumulative disadvantage for subordinated groups.
- **Transgenerational:** decisions consider generational impacts and don't result in unfair burdens on future generations.

Goleta's Strategic Energy Plan aligns with the State of California's goals to address the issue of energy justice. With the passing of the Clean Energy and Pollution Reduction Act of 2015 (SB 350), the California Energy Commission was directed to study existing barriers for low income customers' access to energy efficiency and weatherization upgrades, as well as solar photovoltaic technologies. The resulting Low Income Barriers Study offered twelve recommendations to improve clean energy access, investment, and resilience for low income residents throughout the State. Several of the strategies within Goleta's Strategic Energy Plan align with the California Energy Commission's recommended strategies to address energy equity, including developing community solar pilots for low income residents, and establishing regional outreach and technical assistance through one-stop-shop educational resources.

Goleta's Priority:

LEADING BY EXAMPLE

As identified in California's Fourth Climate Change Assessment, California (and the world) need to rapidly reduce climate pollution to avoid the worst effects of climate change. Included in the Assessment is the Central Coast Region Report, which highlights numerous climate changes that will affect the Central Coast specifically, including increases in temperature, sea levels, heavy precipitation events, drought, and area burned by wildfire; with a declining snowpack. For its part, the City has taken numerous steps to adopt policies and implement projects that support energy conservation, efficiency, and renewables.

For example, the City's Resolution adopting the 100% Renewable Energy Goals includes an interim goal for at least 50% of electricity use by municipal facilities to come from renewable sources by 2025, five years sooner than the community-wide target. The City Council showed similar environmental leadership when in 2012 it adopted a Green Building Policy for government facilities that requires all new City-owned buildings of 2,000 square feet or greater to achieve the United States Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) rating system Silver certification.

The City has completed conversion of various lighting fixtures to more

energy efficient light emitting diode (LED) technology at City Hall and at the Goleta Valley Community Center, as well as in all intersection highway safety lights, and installed solar-powered pedestrian activated Rectangular Rapid Flashing Beacons over travel lanes.

The City is in the process of acquiring the City's streetlight system, which will also be converted to LED. With regard to the transportation sector, the City installed one of the first publicly available DC Fast Charging stations for electric vehicles (EV) in Santa Barbara County and has purchased an electric parking enforcement vehicle.

However, given the urgent need to reduce greenhouse gas emissions and adapt to the anticipated changes due to a warming climate, the City should continue to take action to lead by example with regard to its own facilities and operations that will help provide community-wide visibility and build momentum in SEP implementation. The City has the opportunity to implement high-visibility clean energy demonstration projects on its facilities, such as rooftop solar, or battery storage as backup at critical facilities. Additionally, the City could support EV charging infrastructure expansion by installation at City facilities and considering EVs as part of a fleet vehicle replacement policy.



COMMUNITY LEADER: DECKERS BRANDS

The City of Goleta is home to the Deckers Brands' LEED certified global headquarters. As a global company with offices and retail locations around the world, its commitment to establishing and exceeding sustainability goals has far reach. Deckers strives for continued growth in a way that is considerate of the environment, their employees, and their surrounding communities. In FY18, Deckers installed solar panels at the Goleta headquarters. To bring more visibility to these efforts they also installed multiple informational kiosks in their lobby and Brand Showcase to give employees and in-store visitors a virtual tour of the state-of-the-art solar electric system, the energy produced and the positive effects on the environment. Thanks to their solar panel installation, Deckers anticipates being able to offset their electricity usage by 25% in FY19 and beyond.

DECKERS SOLAR STATISTICS:

- **1,170 SOLAR PANELS**
- **884 POWER OPTIMIZERS**
- **15 INVERTERS**
- **393 kW SYSTEM**
- **ANNUAL PRODUCTION: 616,655 kWh**
- **ANNUAL GREENHOUSE GAS EMISSIONS AVOIDED: 433 METRIC TONS**
- **25-YEAR PRODUCTION: 15,416,375 kWh**

FINANCIAL IMPACT

- **25-YEAR SAVINGS: \$2,200,000**
- **INTERNAL RATE OF RETURN: 20%**
- **PAYBACK PERIOD OF 4.5 YEARS**

IMPLEMENTATION & FOSTERING PARTNERSHIPS

The Council has set a visionary target to transition to clean energy. Reaching the target will require engagement, action and leadership from many sectors. Internally, the City will need to build on its organizational staffing capacity and plan for financial resources to support the efforts. To address resource constraints, the City could consider establishing an interdepartmental working group for implementation or a joint steering committee to leverage both internal resources and foster external partnerships. The steering committee could include residents, representatives from the business community, industry experts, SCE, UCSB, or others to advise City action on specific strategies.

The education and outreach process is an essential component to the success of the Strategic Energy Plan. Conducting regular outreach, soliciting community feedback, and engaging key stakeholders such as commercial property owners through regularly scheduled roundtable discussions, as suggested during the commercial property owner workshop, can assist Goleta in the design and implementation of recommended strategies and programs. Additionally, with the City's stated commitment to equity, future outreach can and should be language inclusive for all Goleta residents.

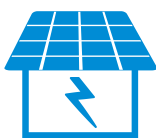
NEXT STEPS

REGIONAL COLLABORATION

Two existing regional efforts that the City can leverage now to support the renewable energy goals are the Tri-County Regional Energy Network (3C-REN), and the Santa Barbara County Climate Collaborative.

TRI-COUNTY REGIONAL ENERGY NETWORK

The Tri-County Regional Energy Network (3C-REN) is a partnership among the Counties of San Luis Obispo, Santa Barbara, and Ventura. These three local government agencies are working together to deliver rate payer funded, energy efficiency programs across the Central Coast region. 3C-REN will administer three programs: (1) Workforce, Education, and Training (WE&T); (2) Codes and Standards (C&S); and (3) Residential Direct Install (RES DI) for Hard to Reach Customers. 3C-REN's RES DI program will help Hard-to-Reach residents underserved by existing utility programs make free and low-cost improvements to their homes that save them money and energy, and improve the health, safety, comfort, and durability of their homes, and reduce carbon emissions[6].



SANTA BARBARA COUNTY CLIMATE COLLABORATIVE

The Santa Barbara County Climate Collaborative is an initiative led by the County of Santa Barbara with participation by multiple jurisdictions in North and South County as well as regional agencies such as the Santa Barbara County Association of Governments and the Santa Barbara County Air Pollution Control District. The intent is to formalize a way to work together at a scale needed to address climate change. The Collaborative began meeting in November 2018 and is currently focused on the identification of shared goals and activities, a potential structure, developing a joint greenhouse gas inventory, and public stakeholder involvement.

NEXT STEPS

WHAT'S IN THE PLAN?

The attached SEP includes an Executive Summary and six chapters with appendices as summarized below.

Project Origin and Objectives

The primary objective of the SEP is to help the City identify ways in which it could meet the 100% renewable electricity goals, while also recognizing other benefits such as the importance of identified actions to help address regional reliability and resiliency concerns.

Analysis of Renewable Energy Potential in Goleta

The SEP assesses the availability of renewable generation within the City, focusing on distributed solar photovoltaic (PV) potential.

Meeting the 100% Renewable Energy Goal

The SEP identifies the gap in forecasted electricity demand and baseline growth in renewable energy and energy efficiency to determine the necessary scope of the City's actions.

Obstacles to & Opportunities for Renewable Energy Development

The SEP identifies obstacles for renewable energy and energy efficiency development that are most important and unique to Goleta. One or more potential solutions or opportunities to address each obstacle is suggested and analyzed.

Recommended Sites for Development

The SEP provides a detailed technical assessment and financial analysis of potential public solar PV project development opportunities in the City of Goleta.

Specific Recommended Actions and Timeline

The SEP identifies strategies in five program areas for the City to prioritize in order to meet its goal, including regulatory policy-driven actions, actions aimed at changing the electricity supply to Goleta, actions related to financing renewable projects, actions at City Facilities, and actions related to outreach and advocacy. For each strategy, the funding and staffing requirements, associated timeline, and energy impacts are estimated.

Appendices and References

Included in the appendices are the detailed statistical solar analysis including a description of the methodology and assumptions; key terms and definitions; and a list of references cited.

ACKNOWLEDGEMENTS

The City of Goleta would like to thank the many community members, project partners, and individuals who participated in the formation of the Strategic Energy Plan, setting Goleta on the path to 100% renewable electricity.

GOLETA CITY COUNCIL

Paula Perotte, Mayor
Kyle Richards, Mayor Pro Tempore
Roger S. Aceves, Councilmember
Stuart Kasdin, Councilmember
James Kyriaco, Councilmember

CITY OF GOLETA PLANNING

AND ENVIRONMENTAL REVIEW

Peter Imhof, Planning Director
Cindy Moore, Sustainability Coordinator
Angeline Foshay, CivicSpark Climate Fellow

COOPERATING PARTNERS

CITY OF CARPINTERIA

Erin Maker, Environmental Coordinator

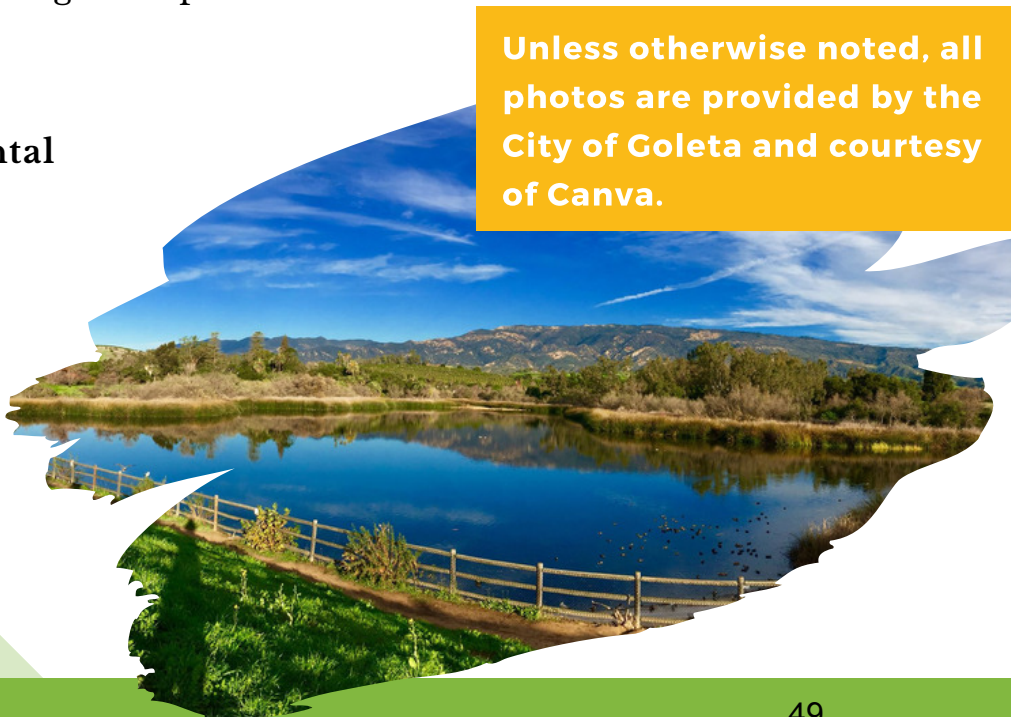
COUNTY OF SANTA BARBARA

Ashley Watkins, Co-Division Chief, Sustainability Division
Jen Cregar, Co-Division Chief, Sustainability Division
Marisa Hanson-Lopez, Senior Program Specialist

CONSULTANTS

Optony Inc.
Blue Strike Environmental

Unless otherwise noted, all photos are provided by the City of Goleta and courtesy of Canva.



REFERENCES

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EXHIBIT 3

Strategic Energy Plan: City of Goleta (Optony, Inc.)

The Plan is also available online at
<https://www.cityofgoleta.org/projects-programs/sustainability-climate-adaptation/strategic-energy-plan>



Strategic Energy Plan: City of Goleta



Prepared by Optony Inc.

June 25, 2019

Strategic Energy Plan: City of Goleta

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Executive Summary

ES.1 – Project Origin and Objectives

In December 2017, the City of Goleta City Council unanimously adopted a goal of 100% renewable electricity supply for the community by 2030 with an interim goal of 50% renewable electricity for municipal facilities by 2025.¹ Following the adoption of this goal, the City of Goleta partnered with the County of Santa Barbara and the City of Carpinteria to commission the creation of a Strategic Energy Plan (SEP) to meet its 100% renewable electricity goals and improve the resiliency of the local electricity system by promoting local renewable energy development and energy efficiency deployment. Increasing the ability of the electricity grid to operate in emergency scenarios, like recent wildfires or the Montecito debris flows, where transmission of electricity to Goleta and the South Coast could be cut off, will improve reliability for residents and businesses.

Due to Goleta's unique location close to the end of the Southern California Edison (SCE) service area, the emergency scenarios that are addressed by the SEP extend far beyond natural disasters. There is lower resiliency at the end of the SCE grid because most of the utility generation is coming from only one southeasterly direction, placing higher emphasis on reducing electrical load and hardening a few key sections of the transmission grid. Furthermore, as a measure to proactively prevent wildfires and other natural disasters, SCE has implemented a protocol called the Public Safety Power Shutdown (PSPS; see this and other Key Terms and Definitions in Appendix B).² The PSPS allows and requires SCE to turn off sections of the transmission grid during high-risk periods, such as high-wind events, which could result in an induced power outage locally.

Additionally, in 2018, SCE released a Request for Offers (RFO) to fulfill local capacity requirements, but its "Least Cost Best Fit" selection methodology provided no additional consideration for the renewable content of energy.³ As such, none of the selected projects included renewable energy generation despite strong community interest in the development of local renewable resources.

The objective of the SEP is to help the City of Goleta meet its 100% renewable electricity goals and address these resiliency concerns by promoting renewable energy development in Goleta in five ways:

- 1) Identifying the gap in forecasted electricity demand and baseline growth in renewable energy and energy efficiency to determine the necessary scope of the City's actions
- 2) Identifying a set of policy measures and strategies in diverse program areas ranging from drafting regulatory frameworks to creating new financing mechanisms
- 3) Evaluating the ability of these policy measures and strategies towards closing this gap and meeting the City's 100% renewable electricity goals
- 4) Identifying total resource potential for distributed solar development in Goleta on rooftops and parking lots
- 5) Creating a list of priority sites for renewable energy development throughout Goleta

¹ Sierra Club, 'Goleta, California Commits To 100% Clean, Renewable Energy', 2017 <<https://www.sierraclub.org/press-releases/2017/12/goleta-california-commits-100-clean-renewable-energy>> [accessed 10 April 2019].

² Southern California Edison, 'SCE Proposes Grid Safety and Resiliency Program to Address the Growing Risk of Wildfires', 2018 <<https://newsroom.edison.com/releases/sce-proposes-grid-safety-and-resiliency-program-to-address-the-growing-risk-of-wildfires>> [accessed 10 April 2019].

³ California Public Utilities Commission, 'Utility Scale Request for Offers (RFO)', 2019 <http://cpuc.ca.gov/Utility_Scale_RFO/> [accessed 10 April 2019].

ES.2 – Renewable Energy Potential in Goleta

Table ES.1 summarizes the estimated maximum realistic distributed solar potential in Goleta. Although most of the potential is on rooftops, roughly 20% of the potential is in parking lots, where solar carport structures could provide shade for vehicles while simultaneously creating energy. Due to Goleta's constrained geography and generally urban/suburban make-up, alternative renewable energy sources, such as wind, biogas/biomass, hydroelectric, and geothermal hold minimal potential for local development, and solar photovoltaic (PV) energy is the primary target for local renewable electricity generation.

Table ES.1: Distributed Solar Potential in Goleta

Solar Resource		Potential Generation Capacity (MW)	Potential Annual Generation (GWh)	Households Powered
	Rooftop	79 – 107	107 – 155	38,000 – 55,000
	Parking Lots	22 – 26	30 – 38	10,000 – 14,000
	Total	101 – 133	137 – 193	48,000 – 69,000

ES.3 – Barriers to Renewable Energy Development in Goleta

The table below summarizes the key barriers to renewable energy development identified in Goleta. These barriers were determined through engaging both City staff and members of the Goleta community, including regional renewable energy project developers, through public workshops, individual communications, and feedback opportunities on draft versions of the SEP. Although some of these barriers are state or federal concerns, such as the decrease in federal tax credits, many are unique to or heightened in Goleta.

Table ES.2: Barriers to Renewable Energy Development in Goleta

Type of Barrier	Barrier(s)	Description
 Property Ownership	Split Incentive	Landlords do not have any incentive to undertake energy upgrades on behalf of tenants.
	Load Constraints and Rooftop Leasing Challenges	Many high-potential areas do not have the load to install a maximum-sized PV array and rooftop leases do not provide enough financial benefit to make up for the additional liability.
 Financial / Funding	Financing Mechanisms	Several programs to finance energy projects have not achieved desired outcomes
	Altered Time-of-Use (ToU) Rate Schedules	Recent changes in electricity rates lower the value of solar production.
	Funding Sources	The City lacks diverse funding sources due to its size and having a limited number of facilities.
 Institutional City	Energy Assurance Plan (EAP)	The City does not have a formal EAP to ensure electricity reliability at critical facilities.
	Regional Collaboration	There is limited regional framework for municipal collaboration on energy, climate, and resiliency issues in southern Santa Barbara County.
 Educational / Public Awareness	Cost Awareness of Renewable Energy	Public awareness of the costs and benefits of renewable energy can be outdated due to technology improvements and ever-changing electricity rates and programs.
 Regulatory / Utility	SCE RFO Process	SCE's RFO process for increasing local electrical resiliency does not place additional value on renewable energy.
 Technical / Infrastructural	Distribution Grid	Parts of the distribution grid in western Goleta may not support additional renewable electricity due to low-capacity
 State and Federal Policy	Federal Investment Tax Credit (ITC)	The federal ITC is currently planned to drop down and then phase out, which will reduce project viability.

ES.4 – Recommended Actions to Overcome Barriers

The strategies in Table ES.3 on the following page were developed to directly target the barriers identified in Goleta. These strategies span five major program areas: regulatory policy-driven actions to drive new local development, actions aimed at changing the electricity supply to Goleta, actions related to increasing options for financing renewable projects, actions to address electricity usage and supply at City facilities, and actions related to outreach and advocacy both inside and outside Goleta.

Table ES.3: Recommended Actions to Overcome Renewable Energy Barriers in Goleta

Program Areas		Strategies	Description	Contribution to 100% Goal
	Regulatory	Streamline Solar and Storage Permitting	Update residential and small commercial permitting ordinances to expand existing regulations.	1.9%
		Commercial Building Energy Benchmarks	Institute energy benchmarks for large commercial buildings to encourage commercial building owners to undertake energy projects.	2.2%
	Utility	Consider Community Choice Aggregation (CCA)	Continue to explore feasibility of a county-wide CCA and implement or consider joining an existing CCA.	30.7%
		Community Solar Project	Develop a community solar project for those without access to on-site renewable energy.	0.6%
		Pilot Back-up Inverter Program	Release an RFO to determine a shortlist of “back-up inverters” that provide resilience benefits in a residential application	0.4%
	Financial and Funding	Financing Mechanisms	Create an improved Property-Assessed Clean Energy (PACE) or On-Bill Financing (OBF) program to finance projects.	1.4%
		Financial Incentives	Provide financial incentives to fill gaps in project viability.	10.4%
		Diversify Funding Streams	Monitor and apply for regional, state, federal, and foundation grants.	
	City Facility	Energy Assurance Plan	Create and implement an energy assurance plan to ensure electrical reliability at critical facilities.	0.6%



Outreach and Advocacy

One-Stop Shop

Support a County-wide
resource & education center
to raise awareness and act as
a hub for regional energy
programs.

0.1%

ES.5 – Meeting the 100% Renewable Electricity Goal

Goleta electricity demand is forecasted to be 218 GWh (gigawatt-hours) in 2030. Under a business-as-usual (BAU) scenario, local renewable generation and SCE renewable generation are forecasted to comprise only 63% of Goleta's electricity mix in 2030. This is because the statewide Renewables Portfolio Standard (RPS)⁴ of 60% utility renewable generation is only credited to the remaining electricity consumption after local renewable generation is accounted for. As such, as local renewable electricity generation increases, utility renewable generation, whether supplied by an investor-owned utility (IOU) or a CCA, decreases. This is shown in Figure ES.1.

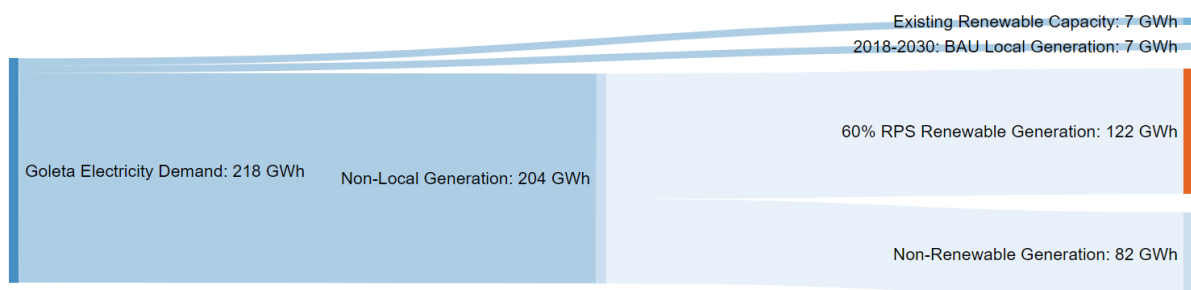
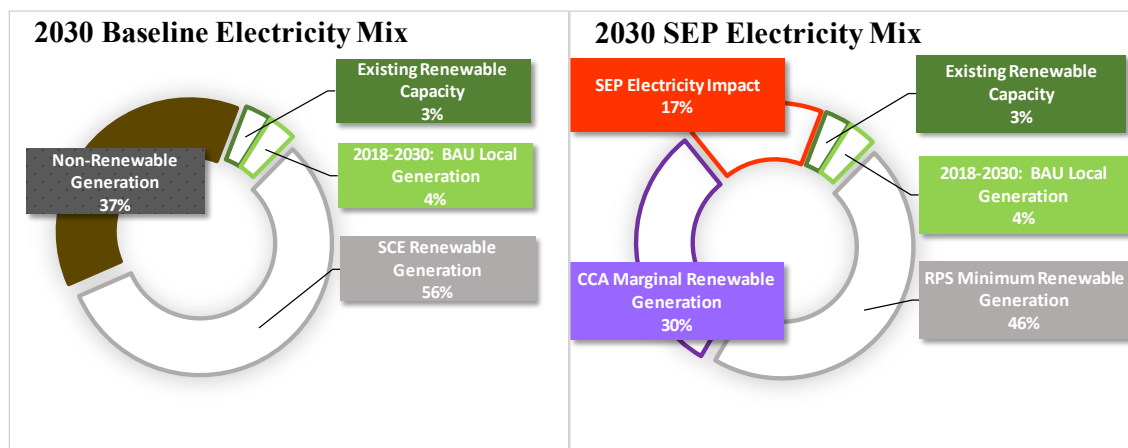


Figure ES.1: Goleta Electricity Demand Flow Chart – Business as Usual Scenario

Figure ES.2 shows a potential pathway for Goleta to fill the remaining gap in its 100% renewable electricity goal through a mix of local distributed electricity development spurred by the SEP and non-local renewable electricity procured by a CCA. In this scenario, increased local generation leads to reduced utility electrical purchases.



⁴ The Renewables Portfolio Standard is the state-wide legislation that defines what constitutes as renewable energy and outlines mandates on utility renewable procurement.

Figure ES.2: Projected 2030 Electricity Mix – Business as Usual vs SEP Scenario

Goleta is helped by two existing factors:

- 1) Due to strong state-wide action on energy efficiency, particularly on new construction, electricity demand is forecasted to decrease over the next 5-10 years, until electric vehicle load begins increasing and the decline in demand flattens.
- 2) Steadily increasing state-wide Renewables Portfolio Standard (RPS) requirements will increase the renewable electricity supply from SCE, even as demand decreases.

In addition, implementing the actions outlined in the SEP and establishing a CCA will bridge the remaining gap. This pathway assumes that a CCA would begin by offering 75% renewable electricity as a default rate, and slowly ramp up to 100% by 2030. To maximize financial viability, it would also slowly increase community enrollment by opening to different customer classes one by one.

If establishing a CCA is not viable in Goleta, one method of meeting its community goal locally would be for the City to increase its funding towards strategies, such as the Performance-Based Incentives, to increase their impact. However, this would likely be extremely expensive for the City. Alternatively, the City could purchase Renewable Electricity Certificates (RECs) from SCE or other sources on behalf of the community. RECs are tradable market-based commodities that represent the intangible renewable attribute of renewable electricity without the electricity itself.⁵ While RECs would offset the non-renewable portion of the electricity supply to Goleta but would not necessarily result in additional renewable generation being installed, in Goleta or elsewhere. This solution also sacrifices all local economic and resilience benefits associated with new renewable generation developed in Goleta.

There are additional options for meeting Goleta's goal for its municipal facilities, due to the smaller number of sites and the control that the City has over them. These options include several new green programs proposed by SCE, such as the Green Tariff and the Green Direct program. However, the cost of these programs is uncertain, and both costs and benefits must be calculated on a case-by-case basis.

ES.6 – Call to Action

The City of Goleta, both its government and its citizens, has taken a bold and ambitious step to commit to a 100% renewable electricity supply by 2030. Although Goleta has a challenging road ahead, strong and immediate action by both the City and the community can result in Goleta meeting its 100% renewable electricity goal by 2030. Strong financial commitment and collaboration internally and externally is necessary for Goleta to take control of its energy future and dictate its path towards meeting its energy, climate, and resiliency goals.

⁵ US EPA, 'Renewable Energy Certificates (RECs)', 2018 <<https://www.epa.gov/greenpower/renewable-energy-certificates-recs>> [accessed 10 April 2019].

Chapter 1 – Introduction

1.1 – Benefits of a Strategic Energy Plan (SEP)

1.1.1 - 100% Renewable Electricity Goals

In December 2017, the City of Goleta passed a resolution to power the entire city with renewable electricity by 2030, as well as all the City’s municipal facilities with renewable electricity by 2025.⁶ In taking its renewable energy future into its own hands, the City of Goleta joined the Cities of Santa Barbara and Monterey to become the third city on the Central Coast of California, and one of 109 cities across the country, to pass this goal.⁷ The main objective of the SEP is to help the City meet this 100% renewable electricity goal by identifying long-term trends in Goleta’s electricity demand, renewable energy deployment, and energy efficiency implementation to determine the forecasted gap and to suggest a list of recommendations to assist the City in bridging this gap.

1.1.2 – Local Prioritization & Available Options

There are several ways in which the city can meet its 100% renewable electricity goal, though the different pathways to reach that goal produce different impacts on the local grid and community resilience. A focus of the SEP will be to prioritize policy measures and strategies that result in locally-sited renewable energy and energy efficiency deployment to achieve these goals.

The most common method for cities in California without municipal utilities to meet renewable energy goals is through a Community Choice Aggregation (CCA) energy supplier. Forming a CCA allows cities to procure their own energy supply while leaving operation of the distribution and transmission grid to the local investor-owned utility (IOU).⁸ Although forming a CCA is the most straightforward method to achieving these goals, recent rules passed by the California Public Utilities Commission (CPUC) have potentially reduced the ability of CCAs to offer renewable electricity at a rate competitive with IOUs.⁹ The County of Santa Barbara, in conjunction with the Cities of Goleta, Santa Barbara, and Carpinteria, has re-commissioned an update to its existing CCA feasibility study to account for these and other recent policy and market changes. The study results are expected in early summer 2019.

Should a CCA be determined unviable, new green energy programs offered by SCE may be another option for meeting Goleta’s municipal facility goal. In August of 2018, SCE proposed five new green energy programs to the CPUC. The purpose of the proposed programs is to offer customers increased options and opportunities to use renewable energy resources to meet their electricity needs. As initially proposed, these programs would be implemented in 2021, but they would not be available to CCA customers. One of the programs includes a Green Tariff in which 100% of the enrolled customer’s energy needs would be met with renewable energy sources through the payment of a premium adder to the energy bill. Another program, called Green Direct, involves SCE procuring renewable energy PPAs customized for the City’s facilities. Various aspects of the proposed tariffs and cost recovery approach are intended to enable SCE to offer a rate that is expected to be more economically viable than SCE’s current Green Tariff portion of the existing Green Tariff Shared Renewables (GTSR) programs. However, even though these programs will

⁶ Sierra Club, ‘Goleta, California Commits To 100% Clean, Renewable Energy’.

⁷ Sierra Club, ‘100% Commitments in Cities, Counties, & States’, 2019 <<https://www.sierraclub.org/ready-for-100/commitments>> [accessed 10 April 2019].

⁸ US EPA, ‘Community Choice Aggregation’, 2019 <<https://www.epa.gov/greenpower/community-choice-aggregation>> [accessed 10 April 2019].

⁹ California Public Utilities Commission, *CPUC ENSURES CHANGING ELECTRIC MARKET IS EQUITABLE FOR CUSTOMERS* (San Francisco, 2018) <www.cpuc.ca.gov> [accessed 10 April 2019].

be SCE programs, the rates will still include the Power Charge Indifference Adjustment (PCIA) applied to departing load, which is used to protect IOUs from increased or sunk electricity procurement costs that cannot otherwise be recovered through customer payments because of the departing load.¹⁰ As such, how the costs of these programs compare to past programs and local siting is unknown. To add additional uncertainty, in April 2019 the CPUC issued a decision putting the approval of these programs on hold. At the time of writing, it is unclear when these programs will be approved. However, prior to submission to the CPUC, the City worked closely with SCE in an attempt to improve these offerings in a way that would work for the City and can continue these efforts as SCE refines the programs.

Some cities and utilities also purchase Renewable Energy Certificates (RECs), which represent the renewable attribute of renewable electricity without necessarily being bundled to the electricity itself.¹¹ Buying RECs will likely be the cheapest method for the City, but REC purchase is more likely to result in the reshuffling of renewable electricity from one section of the grid to another, as opposed to additional renewable electricity being installed. Furthermore, neither a CCA nor RECs are guaranteed to help Goleta meet its resiliency goals, since these strategies would likely procure renewable electricity from outside the region.

1.1.3 – Resiliency and Climate

Adopting and implementing a SEP focusing on local generation would have important resiliency benefits for Goleta. One of the unique energy and resiliency challenges in Goleta is caused by being close to the end of the SCE transmission grid. As a result, Goleta is heavily dependent on a few key transmission lines, as shown with the gold and blue lines in Figure 1.1 below:

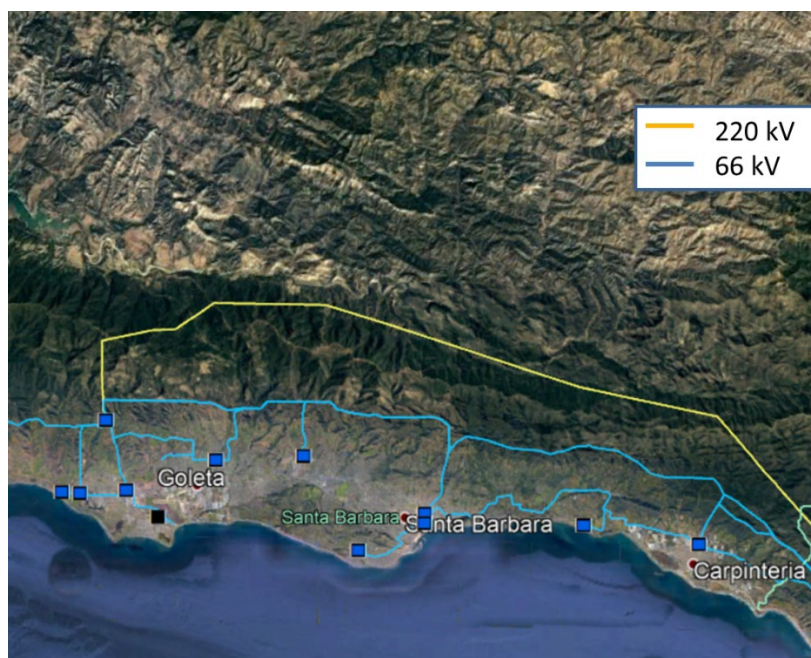


Figure 1.1: Southern Santa Barbara County Electricity Transmission Grid

¹⁰ Application No. 18-09-015 of SCE *U 38-E) for Approval of Green Energy Programs.

¹¹ US EPA, 'Renewable Energy Certificates (RECs)', 2018 <<https://www.epa.gov/greenpower/renewable-energy-certificates-recs>> [accessed 10 April 2019].

Increased local generation would help Goleta respond to power outages during natural disasters, such as those experienced during the Thomas Fire and resulting Montecito mud and debris flows. Local utility-scale generation would improve electricity reliability for residents and businesses in Goleta by reducing outage time caused by lost generation or transmission from outside of Goleta, whereas combined on-site solar generation and energy storage would also potentially allow owners to be self-sufficient.

Natural disasters are not the only disruptions that may impact Goleta's electricity system. In the wake of the Thomas Fire and other wildfires across California, the state's three investor-owned utilities (IOUs) announced Public Safety Power Shut-off (PSPS) protocols.¹² These protocols are designed to preemptively reduce wildfire risk by shutting down sections of transmission lines in dangerous weather conditions, which could create power outages even in non-disaster situations. As Goleta and the southern Santa Barbara County region are served by only a few transmission lines, PSPS protocols could have significant impacts on the local residential and commercial energy users.

Goleta, along with the rest of southern Santa Barbara County, is dependent on the 220-kV (kilovolt) transmission line going through the mountains north and east of the city. Due to its location, this transmission line is at high risk from potential wildfires and landslides or a PSPS shutdown. If that line is shut off, the transmission capacity in the lower-capacity 66-kV lines coming into and through Carpinteria may not be enough to serve the remaining load in southern Santa Barbara County.

SCE recently released a Request for Offers (RFO) to attempt to solve the resiliency issue in southern Santa Barbara County, seeking proposals for new electricity resources in the Moorpark sub-area, which included resources that connect to circuits, loads, or lower-level substations served by the Goleta, Santa Clara, and Moorpark 220/66-kV substations. Any contracted resources will need to be online in 2021. However, only stand-alone battery applications were accepted by SCE through this RFO process. A key goal of the SEP will be to increase the viability of renewable generation applications in the southern Santa Barbara County for future energy procurement or development opportunities.

Increasing the reliability and resiliency of the electricity system will also serve to bolster the economy in several ways. Power outages result in a loss of productivity and can be extremely costly, particularly to critical facilities such as hospitals and water treatment and distribution systems. Furthermore, adding reliability by bolstering renewable energy development will create local jobs in a burgeoning industry. As an unfortunate but inevitable side effect, greater economic growth generally requires greater electricity consumption to support more businesses and more operations, potentially moving Goleta away from its clean energy goals. However, more renewable energy will reduce the extent to which this greater electricity consumption will be accompanied by an increase in greenhouse gas emissions (GHGs).

Lastly, a SEP will help to meet state renewable electricity and emissions targets. California has goals of 100% carbon-free electricity by 2045 and emissions of 80% below 1990 levels by 2050.¹³ These goals can only be achieved if every city plays its part to increase its renewable content and supports distributed electricity development by residents and businesses. Strong action by every city is needed over the next

¹² Southern California Edison. 'SCE Proposes Grid Safety and Resiliency Program to Address the Growing Risk of Wildfires', 2018 <<https://newsroom.edison.com/releases/sce-proposes-grid-safety-and-resiliency-program-to-address-the-growing-risk-of-wildfires>> [accessed 10 April 2019]

¹³ California Senate, *SB-100 California Renewables Portfolio Standard Program: Emissions of Greenhouse Gases*. (Senate, 2018) <https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB100> [accessed 10 April 2019].

25-30 years to achieve this goal and deliver the broad economic, environmental, and community benefits of renewable electricity.

1.2 – Current City Actions Supporting Energy Development

1.2.1 – City Policies

As the City develops its SEP, it is important to take stock of the past and present clean energy and climate policies and programs that the City has already implemented to understand which initiatives have been most and least successful. This will allow the City to model its future actions towards the former and learn lessons from the latter to maximize the likelihood of their success, as well as understand the gaps that currently exist.

In 2014, the City adopted its Climate Action Plan (CAP), which identified measures to help Goleta meet its GHG reduction targets. The CAP established a 2007 baseline inventory and a planning horizon through to 2030 to reduce emissions by 11% below 2007 emissions by 2020, and 26% below 2020 levels by 2030. The voluntary measures identified in the CAP included the building energy efficiency and renewable energy sectors, but the measures were focused mostly at regulatory implementation of state-wide policies, such as an ordinance requiring construction of solar-ready buildings.¹⁴

Prior to that, the City implemented a Green Building Program in 2013 to increase access to green building resources and provide benefits to developers who voluntarily incorporated green building measures. The City also chose to lead by example by adopting a Green Building Policy requiring LEED Silver or higher certification from the US Green Building Council for all new City-owned facilities.¹⁵

In 2012, the City Council adopted an Energy Efficiency Action Plan (EEAP) for municipal facilities consistent with the requirements of the City's General Plan Conservation Element Implementation Action 5, (*CEIA-5*) – *Preparation of a GHG Reduction Plan (also known as the Climate Action Plan)*. The EEAP describes actions that the City could take to improve municipal building energy efficiency, including potential funding mechanisms and suggested protocols for tracking the energy efficiency actions and monitoring electricity usage. The EEAP documented that, through energy efficiency projects completed between 2007 and 2012 using both Energy Efficiency and Conservation Block Grant and other funds, the City reduced electrical consumption by 90,205 kWh (kilowatt-hours).

On November 2, 2010, the City also adopted Ordinance No. 10-06 Local Energy Efficiency Standards – Goleta Reach Code, as allowed in California's Energy Efficiency Standards for Residential and Non-Residential Buildings (Title 24, Part 6 of California Code of Regulations). The code is updated every 3 years, ensuring that California buildings incorporate the latest technologies available in energy efficiency. The City's standards, known as a reach code, were more stringent than Title 24, exceeding its energy efficiency requirements by 15%. Since then, the state Title 24 energy code has become more stringent, exceeding those previously adopted standards, which have sunset.

1.2.2 – City Programs

Many of the City's previous and existing programs supporting energy development have focused on improving local infrastructure and community-scale sustainability.

¹⁴ City of Goleta, *FINAL CLIMATE ACTION PLAN July 2014* (Goleta, 2014).

¹⁵ City of Goleta, 'Green Building Program', 2019 <<https://www.cityofgoleta.org/city-hall/planning-and-environmental-review/green-building-program>> [accessed 10 April 2019].

One of the City's major projects is its acquisition of the streetlighting system serving Goleta. Beginning in 2012, the City Council authorized an annual set-aside in the Capital Improvement Program to fund the acquisition costs for 1,296 of 1,576 streetlight poles from SCE (those without wires or other utility equipment). Once the acquisition process is complete, the City will embark on a multi-phased project to convert the existing lights to high-efficiency light-emitting diode (LED) technology with the goals of improved lighting quality and decreased energy use for illuminating City streets, sidewalks, and crosswalks.¹⁶ The City will also be working with SCE to transition utility-owned lights to LEDs. In addition to that, the City also worked with Santa Barbara County's Air Pollution Control District (APCD) to install a direct-current fast-charger (DCFC) electric vehicle charging station at the Camino Real Marketplace.¹⁷

The City also achieved a 3-STAR Rating from the STAR Community Rating system in 2017. The STAR system measures the work a City has done to achieve 45 sustainability objectives over seven goal areas: The Built Environment; Climate & Energy; Economy & Jobs; Education; Arts & Community; Equity & Empowerment; and Natural Systems. Goleta's rating was driven by its abundant parks, strong economy, and active and healthy lifestyle.¹⁸ In November 2018, the U.S. Green Building Council (USGBC) announced that the STAR Community Rating System will be fully integrated into USGBC's Leadership in Energy and Environmental Design (LEED) for Cities and Communities programs. At the same time, the USGBC recognized the City of Goleta as a LEED City. LEED helps cities and communities benchmark current performance, track performance metrics, communicate continuous improvement, and educate residents, visitors and business owners to demonstrate commitment to sustainability, human health, and economic prosperity.

1.2.3 – City Collaborative Efforts

The City participates in many regional and statewide partnerships that are utilized to share and receive advice and best practices on meeting energy goals.

Green Cities California is a group of 14 cities and two counties, including the City of Goleta, the City of Santa Barbara, and County of Santa Barbara, that creates campaigns and policies centered around sustainability. Examples include creating a comprehensive guide on CCAs, banning the use of city funds for plastic water bottles, promoting sustainable foods and recycled paper, and commissioning assessments on the impacts of single-use bags and methods of consumption.¹⁹ Green Cities California also convenes peer learning exchanges for member jurisdictions such as a recent event on single-use plastics, and hosts regular calls to share best practices between jurisdictions on topics such as land-use planning to reduce carbon emissions, and work to promote renewable energy through collective legislative proposals.

Similarly, the City is part of the Local Government Sustainable Energy Coalition (LGSEC), which grants its city, county, and local agency members a collective voice in lobbying for statewide policy changes. To date, the LGSEC has campaigned for greater local government involvement across broad areas such as climate change, resource management, and alternative-fueled vehicles.²⁰

¹⁶ Paula Perotte and others, *2/5/2019 City Council Meeting Minutes*, 2019.

¹⁷ Santa Barbara County Air Pollution Control District, *Electric Car Show for National Drive Electric Week*, 2016 <<https://www.ourair.org/wp-content/uploads/090116rel-NDEW.pdf>> [accessed 10 April 2019].

¹⁸ City of Goleta, 'STAR Communities & LEED for Cities', 2019 <<https://www.cityofgoleta.org/projects-programs/sustainability-climate-adaptation/star-communities>> [accessed 10 April 2019].

¹⁹ Green Cities California, 'GCC's Impact', 2019 <<http://www.greencitiescalifornia.org/gccs-impact>> [accessed 10 April 2019].

²⁰ The Local Government Sustainable Energy Coalition, 'Regulatory Filings', 2019 <<http://www.lgsec.org/regulatory-filings/>> [accessed 10 April 2019].

Until 2019, the City also collaborated with the County and Cities of Carpinteria and Santa Barbara to participate in the emPower SBC program, which partnered with local utilities and banks to provide low-interest energy efficiency loans to homeowners.²¹ However, this program will be closed in 2019 due to low participation. Due to the various public and private partners administering the loans there were too many administrative hurdles for residents to clear and too many tie-ins to other programs with additional eligibility requirements, such as the Home Energy Upgrade Program. Additionally, due to utility participation, there were very strict guidelines on eligibility placed by the CPUC, and many businesses either could not participate or were dissuaded from even applying.

Finally, the City also partners with the County and the Cities of Carpinteria and Santa Barbara, as well as SCE and SoCal Gas, to participate in the South County Energy Efficiency Partnership (SCEEP). The SCEEP focuses on running smaller energy efficiency programs, certifications, and training seminars and workshops, but this partnership is also anticipated to end in 2019.²²

1.3 – Currently-Installed Renewable Capacity

1.3.1 – Projects at City Facilities

The City of Goleta currently has no PV capacity installed at its facilities. However, in accordance with its Green Building Policy, it is developing two new facilities to act as a clean energy example among local governments, special districts and agencies, and commercial property owners.

The foremost amongst these is the new Fire Station 10, which is planned in Western Goleta. Fire Station 10 is being designed to a LEED Silver standard, which currently includes a conceptual design for a solar installation and a 150-kW capacity diesel generator. It is recommended that battery storage for electricity backup be included in the design considerations, in addition to the diesel generator. It has also been designed to a high standard of sustainability, with extensive thought given to aesthetics and environmental impact.²³

The new train station that is projected to open in 2024 will have a sustainable design, is required to be certified LEED Silver, and provides an excellent opportunity to install a solar power producing facility. The new station will lead to lower GHG emissions by increasing train ridership, reducing local vehicle miles traveled (VMT). Greater use of the station and higher levels of train ridership will result from several factors, including expanded parking, improved bicycle and pedestrian access, and better connectivity between the train station and the neighboring University of California – Santa Barbara (UCSB).²⁴

1.3.2 – Installed Community Renewable Energy Capacity

Figure 1.2 on the following page shows the total installed distributed renewable energy capacity by sector in Goleta, as per Net Energy Metering (NEM) Interconnection data released by the state through the California Distributed Generation Statistics website.²⁵ Net Energy Metering is the program that allows

²¹ emPower SBC, ‘EmPower Central Coast’, 2019 <<https://www.empowersbc.org/>> [accessed 10 April 2019].

²² South County Energy Efficiency Partnership, ‘South County Energy Efficiency Partnership’, 2018 <<https://www.sceep.org/>> [accessed 10 April 2019].

²³ City of Goleta, ‘Fire Station 10 in Western Goleta’, 2019 <<https://www.cityofgoleta.org/projects-programs/building-development/fire-station-in-western-goleta>> [accessed 10 April 2019].

²⁴ City of Goleta, ‘Goleta Train Depot Project’, 2019 <<https://www.cityofgoleta.org/projects-programs/studies-and-other-projects/goleta-train-depot-project>> [accessed 10 April 2019].

²⁵ California Distributed Generation Statistics, ‘CaliforniaDGStats’, 2019 <<https://www.californiadgstats.ca.gov/downloads/>> [accessed 21 March 2019].

customers with solar installations to export excess energy to the grid or import energy from the grid as necessary, receiving credits for excess generation.

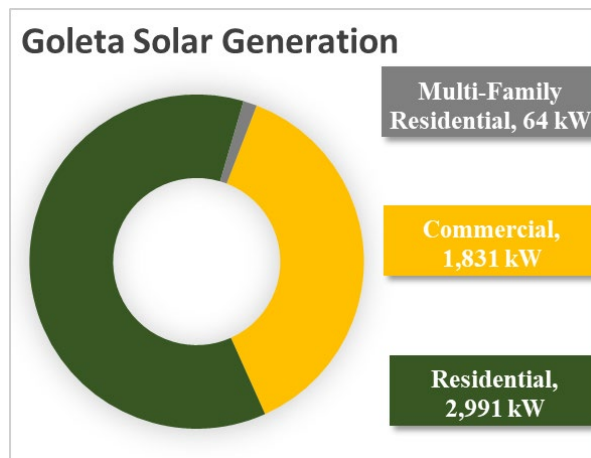


Figure 1.2: Distributed Energy Capacity in Goleta

Most of the solar development in Goleta has been in the single-family residential sector, with a sizable amount in the commercial sector as well. However, the large number of business parks in Goleta represent a significant opportunity or untapped resource that can bring much more commercial solar development in Goleta. The 4,886 kilowatts (kW), or nearly 4.9 megawatts (MW), of deployed solar across Goleta has resulted in a reduction of roughly 1,200 metric tons of CO₂, equivalent to over 250 cars being taken off the road. The energy production of this amount of local solar can fully offset the electrical needs of roughly 1,110 single-family homes. The total renewable energy potential available by sector will be discussed in more detail in Chapter 2, while the contribution of local solar to meeting the city's renewable electricity goal will be covered in Chapter 3.

Chapter 2 – Distributed Energy Resource Potential in Goleta

2.1 – Introduction

The purpose of this chapter is to assess the availability of renewable generation within the City of Goleta. There are five types of power generation eligible under California’s Renewables Portfolio Standard (RPS): solar, wind, biomass/biogas, small hydroelectric, and geothermal.²⁶ This chapter primarily focuses on distributed solar photovoltaic (PV) potential because the remaining types of renewable generation are either not cost-effective or not possible within the City, since they require large amounts of space or access to natural resources such as rivers or high wind. Attention will also be devoted to energy efficiency and battery storage as methods of reducing the need for renewable generation and shifting it to needed times, respectively.

This chapter serves the following purposes:

1. Estimate the quantity of distributed solar energy resource that can realistically be developed in Goleta prior to its 2030 goal;
2. Categorize the potential by customer segment to enable City of Goleta (City) staff to better target policy and programmatic solutions;
3. Identify the geographical locations in Goleta with the greatest availability of resource;
4. Compare the estimated generation potential with the amount of renewable generation needed to meet the City’s renewable energy goals; and
5. Document the technical and administrative barriers to meeting this potential.

The results discussed in this chapter are used to inform the possible impacts of the various policies, programs, and projects recommended as part of the SEP.

2.2 – Current Solar Projects in Goleta

Goleta has a strong history of rooftop solar installations, particularly on residential buildings. Examining this history enables a comparison of different cities and areas in the county.

Approximately 4.9 MW of distributed, net-metered solar PV has been installed to date in Goleta. Over the past three years, roughly 400 – 1,300 kW of distributed solar capacity has been added each year across Goleta. Among similar-sized cities and census-designated places in California, such as Orcutt, Goleta ranks slightly above the median for installed capacity per capita but lags slightly behind the mean average due to extremely high-penetration cities such as Los Gatos, Los Altos, and Spring Valley.²⁷

Over half of the total urban installations to date have been in the residential sector, with nearly 3 MW on residential rooftops and the rest mostly on commercial rooftops. Although residential structures greatly outnumber commercial and industrial structures, these buildings are much smaller and therefore have much less rooftop space, as summarized in Table 2.1 on the following page. This data is estimated by the statistical solar distribution analysis performed for the city, which will be described in further detail in Section 2.3.

²⁶ Christina Crume and Lynette Green, *RPS Eligibility Guidebook, Ninth Edition*, 2017.

²⁷ California Distributed Generation Statistics.

Table 2.1: Estimated Goleta Building Data

Building Type	# of Estimated Structures	Amount of Estimated Rooftop Space (acres)
Residential	~4,500	~200
Commercial	~3,000	~275
Large Commercial / Industrial	~250	~150

Additionally, there is much less rooftop space on residential buildings suitable for solar installation than on commercial and industrial buildings due to a larger number of sloped roofs. As such, there is far more potential on commercial properties in Goleta, and therefore more of an opportunity for development.

2.3 – General Statistical Analysis Method

Given the magnitude of the total number of rooftops and parking lots in Goleta, it was not possible to individually measure the solar potential at each building. Instead, a statistical analysis was conducted for both rooftops and parking lots to determine the estimated solar generating potential. In each case, the total available area was reduced based on relevant exclusions until only likely-viable space was remaining. Following that, rule-of-thumb solar-siting principles were used to calculate the potential in representative samples of the available space. The potential in these samples was then scaled up to determine the total estimated solar installation potential by zone for the whole city. The exact challenges and constraints of solar development on each type of land use will be discussed below, as well as how these constraints informed the relevant exclusions and siting principles.

2.4 – Solar Potential

Solar installations in urban areas occur primarily on rooftops and on parking lot canopies. Although undeveloped urban land can be used for solar power, doing so often conflicts with other uses such as recreation and housing. Therefore, undeveloped urban land was not considered for the statistical modeling in this SEP.

Table 2.2 below summarizes the key similarities, differences, and challenges for solar projects based on whether they are intended for sale of electricity to the utility (wholesale) or for on-site consumption of electricity by the building owner or occupant.

Table 2.2: Comparison Between Urban Solar Arrays for Wholesale and On-Site Use

Consideration	Wholesale Projects	On-site Use Projects
Electricity Off-taker	Utility distribution grid	On-site use
Site-owner Revenue Stream	Rooftop lease to solar system owner	Electricity bill reductions
Electrical Concerns	Costly electrical upgrades may be necessary if utility distribution transformer or feeder is at full capacity	Costly electrical upgrades may be necessary if building switchgear is at full capacity
Load Concerns	California utilities do not allow wholesale generation on a feeder (a section of the electrical grid) if it would exceed total feeder load	SCE Net Energy Metering rules do not allow on-site generation to exceed on-site consumption
Rooftop Availability	Constrained by roof orientation and pitch and presence of Heating, Ventilation, and Air Conditioning (HVAC) equipment	
Shading Concerns	Generation reduced by nearby trees and buildings that would cause shading on installed solar systems	
Structural Concerns	Costly roof replacement may be necessary, based on rooftop age and material	
Geotechnical Concerns	Parking lot canopy may need added structural design if soil is unstable or difficult to drill into	

Many of the challenges with urban solar development are similar regardless of whether the generated electricity is used on-site or sold to the utilities or CCAs through the electric grid. However, not all these concerns can be determined through visual satellite imagery. The diagram below shows how viable solar potential is determined by narrowing down from the total urban area, applying each concern as an individual filter:

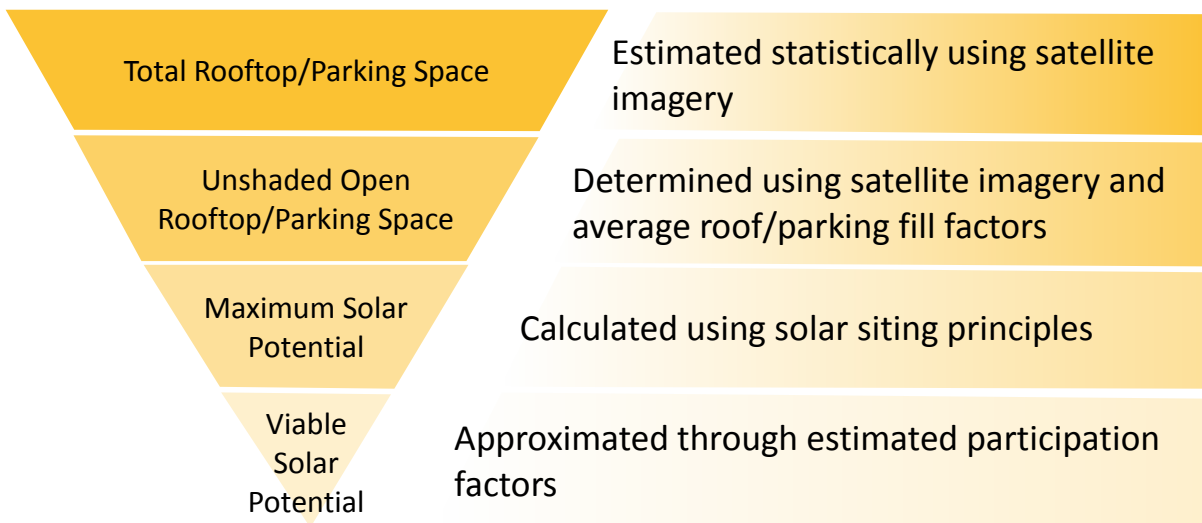


Figure 2.1: Process for Determining Goleta Solar Potential

To refine the analysis, the City of Goleta was split further into “zones” that were similar in building density, use, and geographical location, such as residential or commercial. The total rooftop and parking lot space, as well as concerns that could be identified visually, such as shading, were determined by taking

representative samples of each zone, and then scaling up to the size of the whole city. This available area was converted into maximum solar potential based on typical solar efficiencies, and then narrowed further into a technically viable solar potential estimate through estimated participation factors that accounted for issues or items that could not be determined visually, such as structural, geotechnical, electrical, and load concerns. This analysis is shown in Figure 2.2 on the following page.

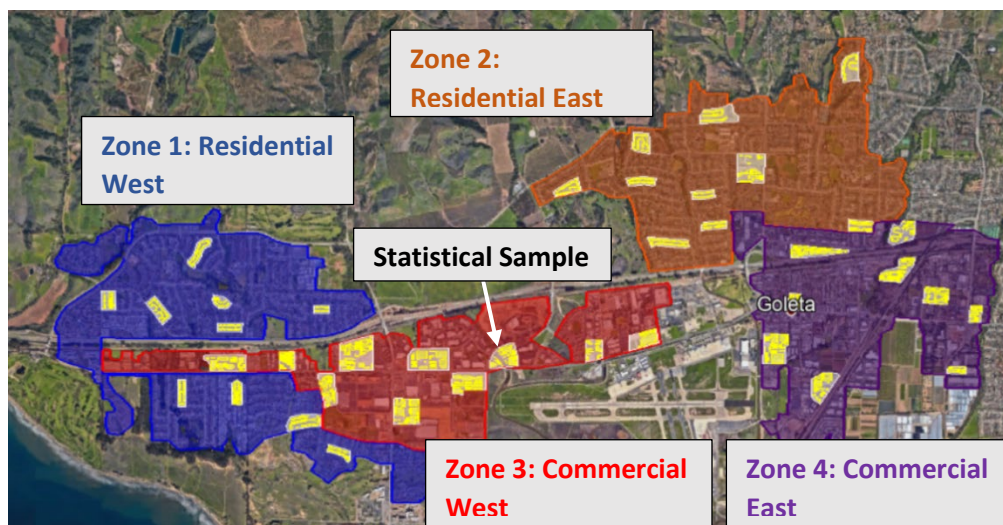


Figure 2.2: Statistical Solar Analysis for Goleta

Goleta was split into four zones: two residential and two commercial, with 10 samples taken of each zone, as indicated by the yellow polygons in Figure 2.2. These zones do not correspond exactly with the boundaries of Goleta, to exclude undeveloped urban land and any agriculture that may exist within City boundaries.

The total potential capacity, by MW, is summarized in Table 2.3 below. Estimated urban solar energy generation from this projected solar capacity, as measured in gigawatt-hours (GWh, equal to 1 million kWh) of electricity produced annually, is shown in Table 2.4 on the following page. As noted in Section ES.5, Goleta's total estimated annual electrical consumption by 2030 is expected to be roughly 218 GWh. The range of the solar power potential calculation is caused by the variance in the statistical estimation and the uncertainty in the participation factor. The energy potential has a slightly larger range due to the additional small variance in solar yield caused by the different orientations or angles at which solar can be installed.

In addition to orientation and tilt, shading also plays a large role in calculating solar potential. Due to the preference in Goleta towards small trees in parking lots, it was found that roughly 35% - 50% of available carport locations were shaded, compared to only 15% - 20% of rooftops, where the solar installation is higher up and can be placed strategically to avoid shading, particularly for commercial buildings. Additionally, it should be noted that, due to participation factors, this analysis represents a conservative estimate of solar potential, particularly for residential installations.

Table 2.3: Summary of Goleta Solar Capacity by MW

Building Sector	Rooftop Generation Capacity (MW)	Parking Lot Generation Capacity (MW)	Total Generation Capacity (MW)
Residential	6 – 8	0	6 – 8
Commercial	45 – 61	7 – 9	52 – 69
Large Commercial / Industrial	28 – 38	15 – 17	43 – 56
Grand Total	79 – 107	22 – 26	101 – 133

Table 2.4: Summary of Potential Annual Goleta Solar Generation by GWh

Building Sector	Rooftop Generation Capacity (GWh)	Parking Lot Generation Capacity (GWh)	Total Generation Capacity (GWh)
Residential	8 – 12	0	8 – 12
Commercial	61 – 88	10 – 13	71 – 101
Large Commercial / Industrial	38 – 55	20 – 25	58 – 80
Grand Total	107 – 155	30 – 38	137 – 213

2.5 – Energy Efficiency Potential

Energy efficiency is a valuable approach that will undoubtedly be used by the community to meet Goleta's 100% renewable electricity goals. By reducing the amount of total electricity consumed, the relative percentage of remaining electrical consumption that can be met by existing and future renewable energy generation is increased. The building number and size distribution estimated as part of the statistical analysis was used to determine the potential energy reduction due to widespread LED retrofits, as a bellwether for realistic community energy efficiency action. It was estimated that there is approximately 30,000 – 32,000 MWh in total projected energy reduction possible across all customer sectors, which corresponds to roughly 12% – 13% of 2019 electricity consumption.

However, it should be noted that, since net-metered solar generation is generally capped at annual electricity consumption, energy efficiency potential and solar generation potential are not mutually exclusive. Undertaking efficiency projects reduces the allowable installed solar capacity if implemented before solar or reduces the value of existing generation if developed after solar PV. Additionally, the load forecast for Goleta already estimates that a large portion of this energy efficiency will take place, since past energy efficiency actions are embedded into the forecast.

2.6 – Battery Storage Potential

Although battery storage cannot directly meet the City of Goleta's renewable energy goals through increased generation or decreased annual load, it can still play an important role by enabling greater penetration of solar generation by shifting the timing of solar export onto the grid to other times of day, when utility needs and credits are higher. Additionally, in some cases, energy storage can help meet the City's resiliency goals for its community by enabling solar power to generate during grid outages. While there have been concerns regarding the safety and reliability of battery energy storage, strong work has been done both on the state and federal level to address these concerns. These support resources include

the U.S. Department of Energy's Energy Storage Safety Strategic Plan²⁸ and best practices for energy storage installation developed by Santa Clara County.²⁹

Unlike solar potential, battery storage does not carry significant constraints due to available space and other site characteristics such as shading, though ventilation and spill management requirements may limit site locations for installations of batteries. In comparison to solar, battery storage requires a relatively smaller footprint and can be placed anywhere on-site that meets the requirements noted above.

However, battery storage constraints do exist, namely from the financial perspective. Although battery storage costs are reducing rapidly, financial feasibility is still variable and is heavily dependent on the range of services being performed by the battery. These services can range from utility bill reductions to performing utility services contracts. California utilities and regulators are still in the process of determining how, and whether, to value some potential grid services available through battery systems, so risk and volatility in these markets remain fairly high. As penetration of batteries onto the electrical grid, and into the public consciousness, increases, prices will continue to fall, and additional value streams will continue to be developed.

A final constraint on battery potential that is important to mention, but is decreasing in importance as policy is adjusted, is distribution grid capacity. While utilities are becoming more comfortable with the software controls that limit the export of energy from battery storage systems to the grid, solar + storage systems are still approached from a worst case scenario, as though both the solar and battery storage systems could discharge at full capacity at the same time, even though this scenario is unlikely to ever occur without equipment malfunction. By treating solar + storage systems as though both could and would export at full capacity at the same time, the utilities effectively restrict the size of and amount of solar + storage systems on their distribution grids.

2.7 – Conclusion

Goleta has had a strong history of residential solar installations: almost 50% of the estimated viable residential solar potential has already been reached. This does not mean that one in two residential buildings have installed solar. Due to the 30% participation factor used for estimating residential installation capacities, this indicates that roughly three in twenty, or 15% of residential buildings with substantive solar exposure have existing solar installations. However, in comparison, less than 2% of the viable commercial and industrial potential has been reached in Goleta. Tapping into this potential is a key opportunity for the City to meet a large portion of its 100% renewable electricity goal and support a cleaner, more resilient future.

²⁸ Conrad Eustis, Imre Gyuk, and US DOE, *Energy Storage Safety Strategic Plan*, 2014.

²⁹ County of Santa Clara, 'Interconnection of Batteries', 2015.

Chapter 3 – Meeting Goleta’s 100% Renewable Energy Goal

There are two steps to meeting any goal: determining the current state and determining how to get from that baseline to the end goal. Accordingly, this chapter will discuss how Goleta can meet its 100% renewable energy goal following four steps:

- 1) Forecasting how Goleta’s electricity requirements will evolve until 2030
- 2) Forecasting business-as-usual (BAU) growth in local renewable generation and utility generation to determine a baseline path towards meeting the 100% goal even if no further actions are taken
- 3) Calculating the impact of strategies recommended in the SEP
- 4) Discussing options for Goleta to bridge the remaining gap

3.1 – Business-as-Usual (BAU) Scenario

3.1.1 – Electricity Demand in Goleta

Figure 3.1 shows how Goleta’s electricity consumption changed from 2010 to 2016. This data is taken from utility billing data,³⁰ which is calculated after deducting distributed solar generation.

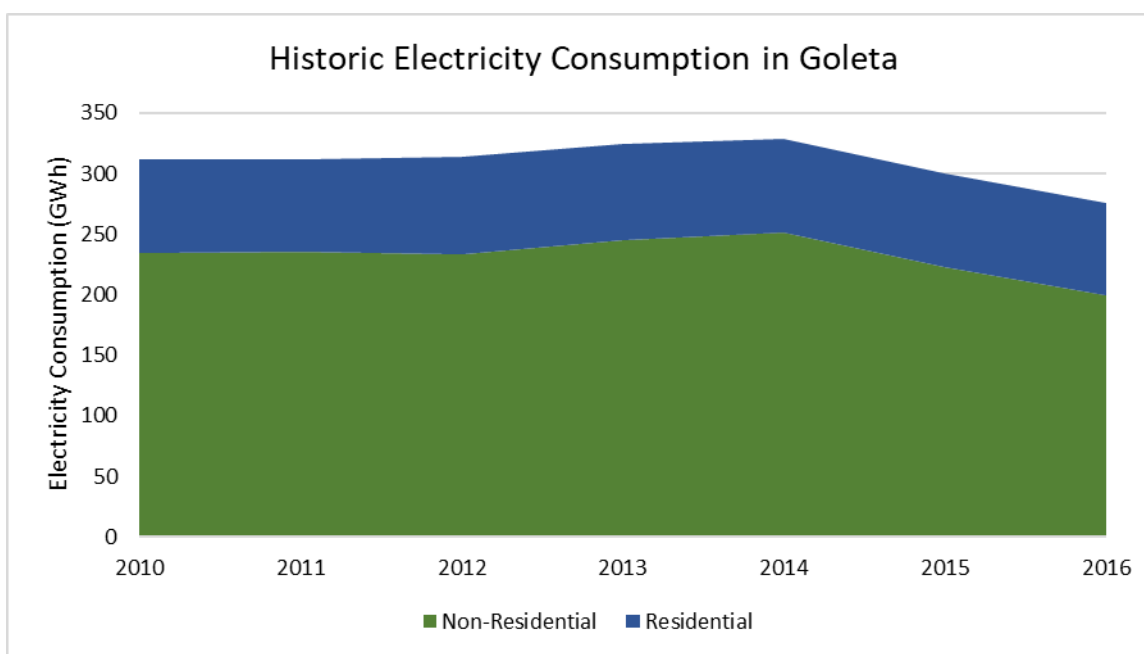


Figure 3.1: Electricity Consumption in Goleta from 2010-2016

Commercial electricity consumption has shown the biggest change; it increased slightly from 2012 to 2014 but decreased rapidly from 2014 to 2016 despite increases in population, potentially due to widespread adoption of energy efficiency measures such as LED lighting. As such, commercial electrical consumption is forecasted to keep decreasing at a lower rate to 2030. In comparison, residential electricity consumption stayed mostly constant, presumably because energy efficiency actions are less common in residential buildings.

³⁰ California Energy Commission, ‘Electricity Consumption by County’, 2018 <<https://ecdms.energy.ca.gov/elecbycounty.aspx>> [accessed 10 April 2019].

However, this residential trend will most likely change as electric vehicle (EV) penetration increases. Since electric vehicles are charged primarily at home,³¹ growth in the deployment of EVs will primarily lead to increased residential electrical load. The impact of EV penetration on community-wide electricity load has been aggregated across the City and treated separately from specific charging locations. Stress on the grid caused by demand spikes from high EV charging loads in targeted locations (likely related to commercial fleet operations) is an important concern but was beyond the scope of this planning effort. Figure 3.2 depicts how electricity demand, prior to an increase in distributed generation installations, is forecasted to change. Residential load is expected to comprise almost half of Goleta’s load by 2030.

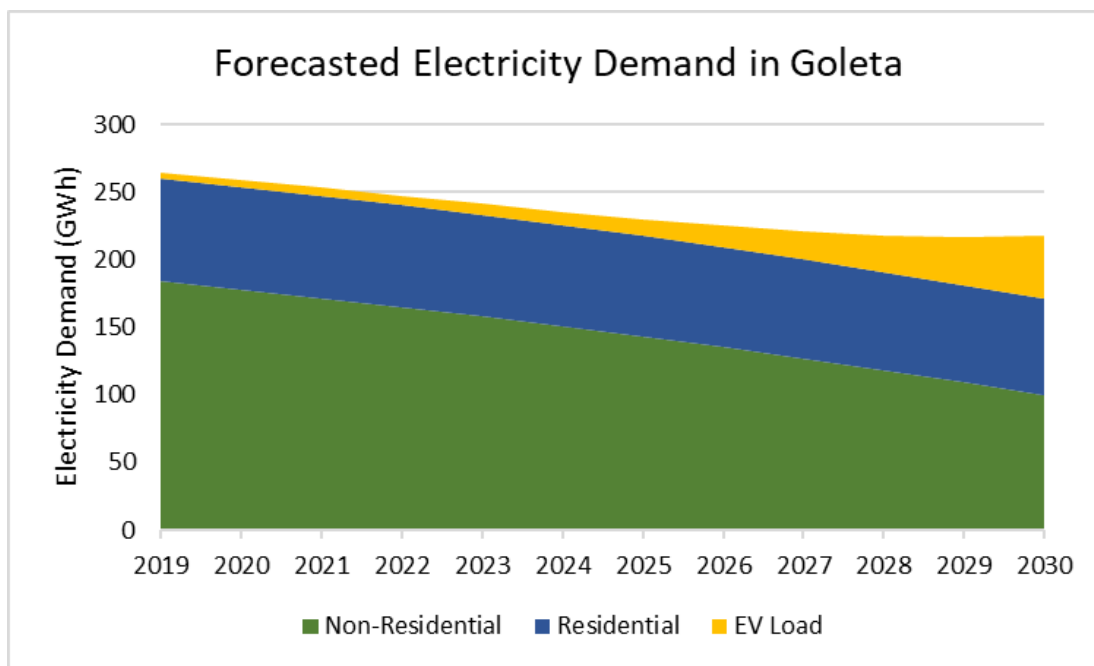


Figure 3.2: Goleta Electricity Demand Forecast to 2030

3.1.2 – Goleta Renewable Electricity

Renewable electricity comes from two sources: residents and businesses installing it to reduce their electricity needs or participating in an SCE program for additional renewable electricity that gets applied to the customer’s bill, and SCE providing it through the grid as part of the state-mandated Renewables Portfolio Standard (RPS). For this first source (local installations), Figure 3.3 on the following page shows how the amount of local renewable generation that has been installed in Goleta has grown over the preceding eight years.

³¹ Idaho National Laboratory, “Plugged in: How Americans Charge Their Electric Vehicles” 2015. <https://avt.inl.gov/sites/default/files/pdf/arra/PluggedInSummaryReport.pdf>

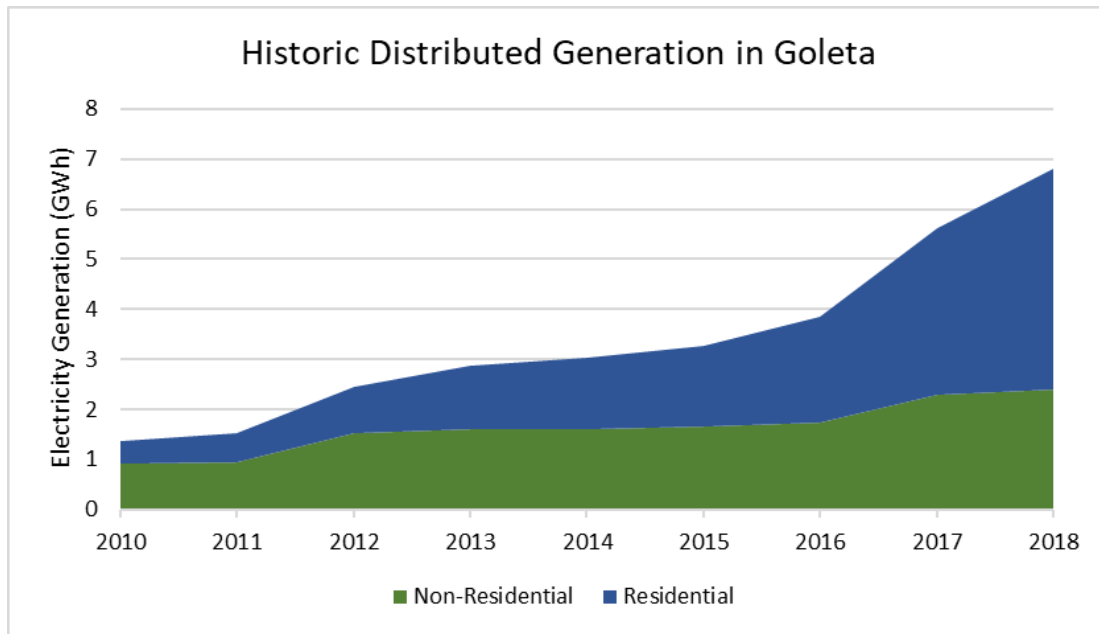


Figure 3.3: Goleta Distributed Solar Installations from 2010-2018

Even though over 70% of the electricity load in Goleta is non-residential, most of the local electricity generation to date has been residential. Although this is also a trend occurring in other nearby cities, such as Santa Barbara, given the larger proportion of commercial buildings in Goleta, this mismatch of local generation and consumption indicates a further need for solutions targeting increased commercial solar generation. The baseline scenario assumes that both residential and commercial generation will continue to increase, but still only result in minor contributions towards the 100% renewable electricity goal.

SCE's renewable mix is also forecasted to increase, largely due to increases in mandated RPS procurement requirements for utilities. However, it should be noted that SCE is currently ahead of RPS requirements, and will likely remain so in the short-term, due to the increasing cost-competitiveness of utility-scale renewable generation. As a conservative estimate, however, it is forecasted that in 2030, SCE will have only the 60% renewable generation required to be compliant with the RPS.

3.1.3 – Business-as-Usual (BAU) Gap in Renewable Electricity

Figure 3.4 on the following page shows the current forecast towards meeting the 100% goal with no further City actions. The forecasted electrical demand is shown with the dotted line, while renewable generation from local sources and from SCE are shown in green and gray, respectively.

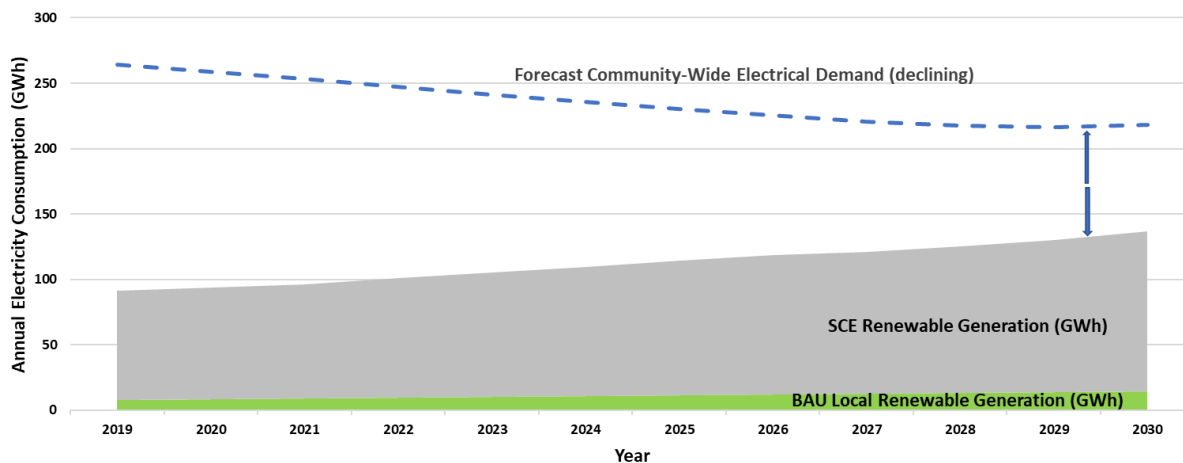


Figure 3.4: Goleta BAU Renewable Electricity Forecast to 2030

In this scenario, roughly 63% of Goleta’s electricity will be renewable, only slightly ahead of the RPS mandate of 60% for SCE. Although local renewable electricity comprises 7% of Goleta’s consumption, the 60% renewable electricity from SCE applies only to the remaining 93% consumption, not the whole 100% consumption. As such, each 1% of local renewable electricity is also accompanied by a reduction of 0.5% utility renewable electricity.

3.2 – SEP Impact

The estimated impact of the SEP strategies towards narrowing this gap between consumption needs and renewable supply, which are discussed in further detail in Chapter 6, is shown in Figure 3.5 below.

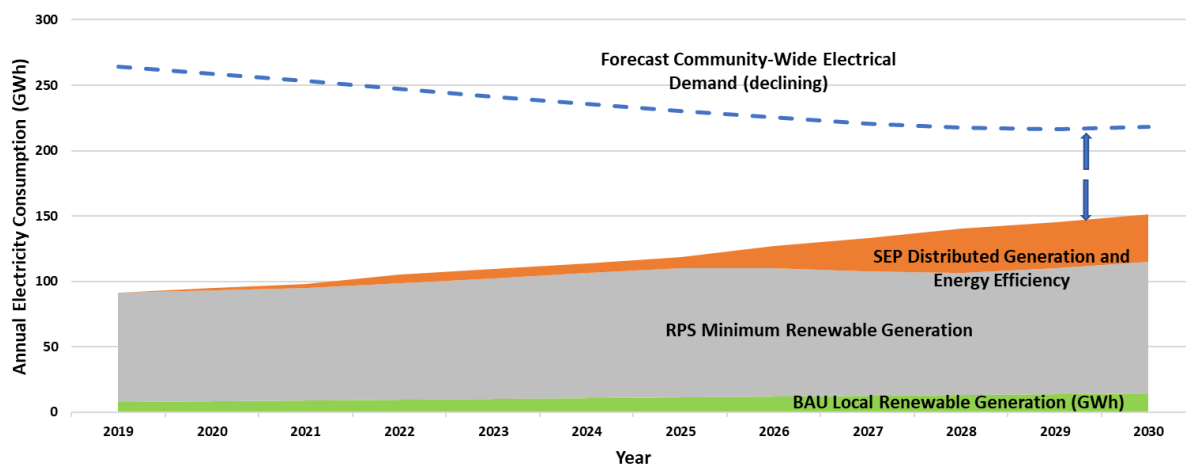


Figure 3.5: Goleta Renewable Electricity Forecast to 2030 with SEP

Implementation of the recommended SEP strategies takes Goleta to roughly 70% of the 100% Renewable Electricity goal. While the strategies contribute to 17% of Goleta’s electricity supply in 2030, as local

electricity contributes more of Goleta's electricity supply, less of it is supplied by the utility. Therefore, increasing local renewable generation has diminishing returns: Goleta can only meet its goal if local renewable generation supplies the entirety of Goleta's needs, or if the incoming utility electricity supply is completely renewable.

3.3 – Options for Bridging the Remaining Gap

Short of Goleta supplying all of its own renewable energy needs, the City can bridge the remaining gap either by purchasing Renewable Energy Certificates (RECs) or by forming a Community Choice Aggregation (CCA). As discussed in Section 1.1.2, "Local Prioritization & Available Options", RECs represent the renewable attribute of electricity generation from a renewable source. They are usually purchased from renewable energy projects that have already been constructed, and therefore generally do not result in additional renewable electricity being generated. Through the purchase of RECs, the renewable attribute of the RECs, and thus the credit for that renewable electricity, is merely reshuffled. However, as discussed in Section 1.1.2, depending on action by the CPUC, proposed SCE programs may offer the opportunity for the purchase of RECs through new dedicated utility-scale solar developments in the region. For a short-term or long-term method of reaching the city's 100% renewable energy goal, these SCE programs may be considered as the 2030 deadline approaches.

Alternatively, CCAs procure electricity supply instead of a utility, while leaving the utility to manage the electricity grid and wires. As a quasi-governmental Joint Powers Authority, a CCA is governed by member jurisdictions, giving members significant control over the energy procurement approach, including the purchase or development of utility-scale renewable projects, either inside or outside the County. The County of Santa Barbara, in conjunction with the Cities of Goleta, Carpinteria, and Santa Barbara, commissioned a study testing the viability of a CCA spanning the unincorporated County and the three southern Santa Barbara County cities. The feasibility study assessed a potential CCA under three different renewable procurement scenarios:

- 1) The CCA procures only the RPS-mandated minimum amount of renewable electricity
- 2) The CCA's default electricity offering is 50% renewable, staying so until the RPS mandates an increase
- 3) The CCA's default electricity offering is 75% renewable, staying so until 2030

Due to regulatory changes on the charge that a CCA must pay the utility for taking over a portion of the utility's electric demand (the Power Charge Indifference Adjustment, or PCIA, as discussed in greater detail in Section 6.2), this study is being re-commissioned, and will be completed in the first half of 2019.

Figure 3.6 on the following page shows how a CCA that goes beyond the scenarios listed above to help Goleta meet its goal:

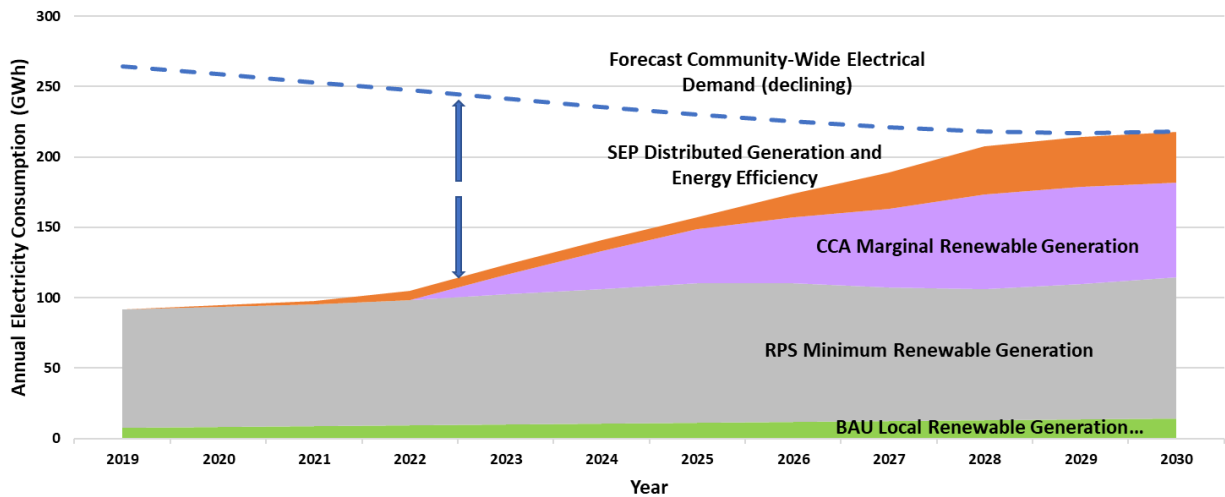


Figure 3.6: Goleta Renewable Electricity Forecast to 2030 with SEP and CCA

This hypothetical CCA begins at 75% renewable, and slowly ramps up to 100% renewable by 2030. To improve viability, it rolls out to the various customer classes one by one. The benefits of this delayed rollout are discussed in further detail in Section 6.2.1.

A CCA would likely not procure all its electricity locally and would therefore not immediately resolve local resiliency issues. The exact percentage of renewable electricity procured by a CCA that would be local has not been considered in the SEP and would depend upon CCA procurement programs and approach that have yet to be determined. However, compared to an IOU, a local CCA may be more mission-driven to focus on local solar siting, and could work more directly with local stakeholders to develop local renewable electricity programs.

Chapter 4 – Obstacles and Opportunities for Distributed and Utility-Scale Energy Resources

This chapter will discuss the various obstacles for renewable energy and energy efficiency development that are most important and unique to Goleta. One or more potential solutions or opportunities to address each obstacle will also be suggested and analyzed. This list of barriers and solutions was developed by working closely with City officials, public agencies, community environmental advocacy groups, residents, and businesses through a series of public workshops and individual meetings.

4.1 – Property Ownership, Structural, and Locational Barriers

4.1.1 – Split Incentive

Obstacle

One of the key obstacles to solar development, particularly in commercial and multi-family residential buildings, is that the site owner is often different from the site user. In rental situations, while the landlord often has final say over capital improvements such as solar or energy efficiency projects, the tenant is often responsible for paying utility bills. Therefore, while the tenant has the incentive to lower their electricity consumption and their bills through energy projects, the landlord does not. Even if the tenant pays for the project, the landlord may have to take on the associated structural risks for no additional benefit. This creates a situation where the landlord does not take any energy-saving actions even when a project would be financially viable for the tenant.

Solutions

There are three main ways through which the City can try to resolve this issue:

- 1) Facilitate green leases, where the tenant pays a higher rent per square foot to account for lower utility bill costs due to actions taken and paid for by the landlord
- 2) Institute energy benchmarking requirements for commercial building owners
- 3) Institute feed-in tariffs (FIT) either through a CCA or by lobbying SCE

The first solution is geared towards bridging the split incentive by having tenants and landlords share the benefits of energy projects, while the second solution aims to side-step the issue entirely by requiring action be taken by building owners independent of tenants. These solutions do not have to be exclusive—green leases can be a method through which landlords can benefit from the actions required of them by the energy benchmarks.

The third solution would enable property owners to sell solar generation to the local utility at a rate higher than the wholesale rate. However, this generation would be distributed across the entire load served by the utility. Therefore, if the utility is SCE, this new generation would have only a small impact on Goleta's renewable electricity goal. Additionally, SCE has not indicated interest in establishing a new feed-in tariff so it is unlikely that a new program will be established in the near-term. However, if a CCA is present, there would be little preventing the establishment of a new FIT and this renewable electricity would be credited only to customers in Goleta, or elsewhere in the county for a larger CCA.

4.1.2 – Load Insufficiency

Obstacle

Most distributed solar installations are currently under a net-metering arrangement, where system owners can sell excess generation to the utility at the same retail rate paid by the utility customer and apply the revenues as a credit to energy provided by the utility at other times in the day, when the solar system is not covering all of the building's needs. However, SCE net-metering requirements do not allow residents and businesses to install solar systems for on-site consumption if the expected annual generation of the solar system is greater than the annual load at the site. As a result, many sites with large rooftops and/or large parking lots, but relatively low load, cannot install an equally large system. This results in both lower benefits for the site owner and a lower utilization of available rooftop or land space.

Although rooftop leases are a preferred way for solar developers to use these sites when an appropriate energy off-taker program is available, leases are not popular among site owners because the payment amount of the rooftop lease is often not high enough for the property owner to want to take on the associated risk of structural damage.

Solutions

One possible solution is:

- 1) Create a program where the City partially or fully insures rooftop replacements for commercial property owners with solar rooftop leases.

This solution would enable the City to lower the risk of rooftop leases for property owners. However, it could also result in a large cost outlay in a worst-case scenario, so the City would need to judiciously determine the correct amount of insurance liability to take on. It should also be noted that as with the feed-in tariff discussed in Section 4.1.1, this would not help the City meet its 100% renewable electricity goal without a CCA, because excess generation sold directly to SCE would count toward the utility's RPS mandate rather than offsetting the city's consumption.

4.2 – Financial and Funding Barriers

4.2.1 – Financing Mechanisms

Obstacle

As noted above, there is a large gap in solar development for commercial buildings between what has been installed and what could be installed. Initial outreach to commercial property owners to determine the cause of this gap has indicated a lack of viable financing mechanisms, as many commercial buildings are built or purchased through a mortgage loan, and lenders are often not willing to allow mortgaged buildings to take on a second loan. Meanwhile, residential homeowners do not always have access to low loan rates. This lack of financing options is particularly the case for solar projects, which are not as well supported by utilities as energy efficiency projects.

Solutions

There are two main recommendations for potential new financing mechanisms to help residents and businesses:

- 1) Work with private foundations to create a low-interest source of funding for residential and commercial Property Assessed Clean Energy (PACE)

- 2) Work with private foundations and local water or sanitation utilities to create a low-interest source of funding and repayment mechanism for a community solar on-bill financing (OBF) program

Both scenarios involve partnering with a local private foundation, trust or other source of no- or low-interest funds to create a low-interest source of funding for residents and businesses. A PACE program would enable customers to finance loans through increased property tax payments,³² whereas an OBF program would enable customers to finance loans by offsetting higher water or sanitation bills with a lower electricity bill until the loan is paid off and the water or sanitation bill loses the embedded energy loan repayment.³³ Traditional OBF programs offered by utilities use electricity bills as the mechanism of loan repayment and the loan payments are structured such that they are equal to the bill savings associated with the energy efficiency upgrade being financed. This “bill neutrality” mechanism cannot be utilized under the proposed solutions because they hinge on using a local utility bill (water or sanitation), in place of a utility-controlled electrical bill, to create a local program targeted toward renewable development in Goleta. However, loan repayments could still be calculated with respect to expected electricity savings, so residents and businesses experience no net increase in their overall utility costs, even if the breakdown of those costs shifted.

4.2.2 – Altered Time-of-Use Rate Schedules

Obstacle

Traditionally, as a warm weather state, California has had electricity loads that peak during daytime in the summer with air conditioning usage, which were well-aligned with solar production. This was a key driver for payback analysis, as solar panels produced during times with high economic value. However, with the proliferation of solar PV and personal electronic devices throughout California, electricity loads have shifted to peaking later in the day. Accordingly, as of March 1st, 2019, SCE released new electricity rate schedule time periods with peak time-of-use (ToU) rates in the late afternoon and evening, which have very little overlap with solar production. This shift causes a drop in value of solar production, thus negatively affecting the payback analysis of solar investments. This shift of ToU periods and the reduced overlap with solar production times is shown in Figure 4.1:

³² PACENation, ‘PACENation: Building the Clean Energy Economy’, 2019 <<https://pacenation.us/>> [accessed 10 April 2019].

³³ Office of Energy Efficiency and Renewable Energy, ‘On-Bill Financing and Repayment Programs’, 2019 <<https://www.energy.gov/eere/slsc/bill-financing-and-repayment-programs>> [accessed 10 April 2019].

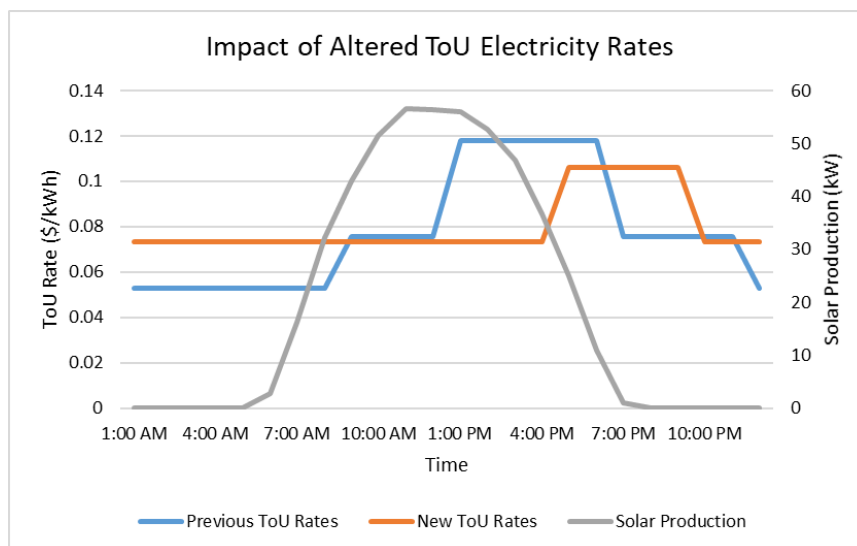


Figure 4.1: Impact of Time-of-Use Rate Changes on Solar Production Value

Solutions

There are several ways for the City to improve the economics of solar projects:

- 1) Host collaborative procurements to bargain for better prices from solar vendors
- 2) Streamline permitting requirements to increase the speed of developing projects
- 3) Institute a Performance-Based Incentive (PBI) that rewards combined solar + storage installations

Recommendations 1 and 2 are aimed at lowering solar PV costs for the system owner, while Recommendation 3 is aimed at increasing revenues for the owner.

Current permitting requirements for solar installations under Assembly Bills (AB) AB2188 and AB546 require residential (<10 kW) solar and solar + storage projects respectively to receive over-the-counter responses to in-person permit applications, with a 3-day turnaround for online permit applications.^{34, 35} However, there are no specific requirements for larger systems.

Although the City is up to date with AB2188 regulations, its battery storage permitting processes need to be reviewed to ensure they are up to date with the relatively new AB546 regulations. Potential methods of streamlining this process will be discussed further in Section 6.1.1.

Using a Performance-Based Incentive to spur solar + storage projects helps to mitigate the devaluation caused by the ToU period shift by enabling solar production generated during the new off-peak periods to be stored in the batteries until the energy is more urgently needed by—and therefore more valuable to—the utility. By timing export of the solar energy to coincide with peak periods, solar value can be increased. The structure of a proposed PBI is discussed in further detail in Section 6.3.2.

³⁴ California Assembly, *AB-2188 Solar Energy: Permits*. (Assembly, 2014)

<https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB2188> [accessed 10 April 2019].

³⁵ California Assembly, *AB-546 Land Use: Local Ordinances: Energy Systems*. (Assembly, 2017)

<https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB546> [accessed 10 April 2019].

4.2.3 – Funding Sources

Obstacle

A review of the City's various funding streams for energy-related policies and programs indicated that it is mostly dependent on IOU funds for any energy efficiency upgrades and incentives. The City currently receives no federal or private funding.

Dependence on one type of funding can lead to an inconsistent funding stream. For example, PG&E recently filed for Chapter 11 bankruptcy protection as part of the ongoing lawsuits against it related to wildfire damages. Although already approved programs are unlikely to have their funding revoked, there may be a downturn in future programs as PG&E tries to regain solvency. While SCE does not currently have this issue, similar fire- or disaster-related lawsuits or judgments are possible in the future. A reduction in the funds the City receives could reduce the City's ability to implement and administer programs and policies.

Solutions

There are several ways for the City to diversify its funding sources:

- 1) Aggressively pursue new federal, state, and private foundation funding sources, as well as explore new mechanisms of raising municipal revenue
- 2) Continue to work closely with the CPUC and existing IOUs to maximize the City's share of existing and future renewable program funding
- 3) Partner with other nearby local and regional governments to create energy programs
- 4) Continue to monitor the costs and benefits of a potential CCA to determine viability
- 5) Earmark a portion of the recently passed cannabis tax towards supporting local renewable energy programs
- 6) Use savings from the tariff switch related to the streetlight acquisition to fund projects at City facilities, as well as energy savings once LEDs are installed

Various programs and funding opportunities that are currently available for the City to pursue under Recommendation 1 have been delivered to City staff separate from the SEP. Strategies to raise additional municipal revenue are discussed in Section 6.7. Recommendations 2 and 3 are aimed at maximizing IOU funding, either directly or by-passing IOUs altogether. Under Recommendation 4, a CCA would enable the City to create a separate entity to lead energy programs with less need for outside funding, as programs that support CCA-member goals could be funded through customer payments. Lastly, Recommendations 5 and 6 involve using new parts of the City general fund that may not yet have been allocated or that may be able to be re-allocated to financially support the City's clean energy efforts.

4.3 – Institutional City Barriers

4.3.1 – Energy Assurance Plan (EAP)

Obstacle

The goal of energy assurance planning is to improve the robustness, security, and reliability of energy infrastructure by creating plans to protect key sites so that they continue to operate in the event of any disaster or electricity outage, ensuring the ability to restore services as rapidly as possible. EAPs are therefore a key step in building a resilient local electricity grid.

As more and more aspects of the transportation and building sectors are electrified, with fossil fuel reliance being reduced or eliminated, the importance of having a resilient electricity grid is magnified. For example, the Santa Barbara Metropolitan Transit District (MTD) recently announced a goal to fully electrify its fleet by 2030. In this scenario, an electricity outage in southern Santa Barbara County could result in major disruption to regional mobility.

Although the City has several emergency preparedness plans and has recently hired an Emergency Services Coordinator, the City does not currently have a formal EAP. Traditional methods utilized to address resiliency have included purchasing diesel generators for electricity backup at important facilities. Although diesel generators are inexpensive, they do not offer any benefit during non-emergency scenarios and emit carbon dioxide and other local pollutants.

Solutions

There are two main recommendations:

- 1) Undertake a formal EAP process to evaluate each existing and under-construction critical site and its current level of emergency preparation, adding backup power capabilities where possible
- 2) Evaluate opportunities to supplement diesel generators with battery storage

The goal of Recommendation 2 is not to replace current diesel backup, but to supplement it where possible with solar and battery storage, where the battery storage can be used daily to achieve electricity bill reductions while also providing backup capacity for shorter outages. Battery storage can achieve these savings in two ways: by shifting solar generation to more valuable time periods (also known as energy arbitrage) or reducing charges related to the maximum electricity demand.

4.3.2 – Regional Collaboration

Obstacle

While City and Santa Barbara County staff have frequent communication on energy and climate issues, the patchwork nature of the many special districts and public agencies has resulted in a lack of formal regional collaboration on climate and resiliency projects. To date, formal collaborations around energy issues have included the South County Energy Efficiency Partnership (SCEEP), the CCA feasibility study, and the SEP process.

Recently, the County has begun efforts to form a Regional Climate Collaborative to coordinate climate mitigation and adaptation (or action) efforts across several sectors, including transportation and waste. It will also focus on electric reliability and resiliency.

Solutions

The main recommendation to increase regional collaboration is:

- 1) Continue collaboration with the County and other Cities around the County's efforts to create a regional energy and resiliency working group.

The City has been a part of the County's efforts to create this collaborative and should continue to do so.

4.4 – Educational and Public Awareness Barriers

4.4.1 – Cost Awareness of Renewable Energy

As solar PV is still a relatively new technology, the costs of purchasing equipment and installation decrease every year with falling module and inverter costs and greater competition. Figures 4.3 and 4.4 show historical trends in costs for residential and commercial projects, with data taken from National Renewable Energy Laboratory (NREL) cost benchmarking studies.³⁶

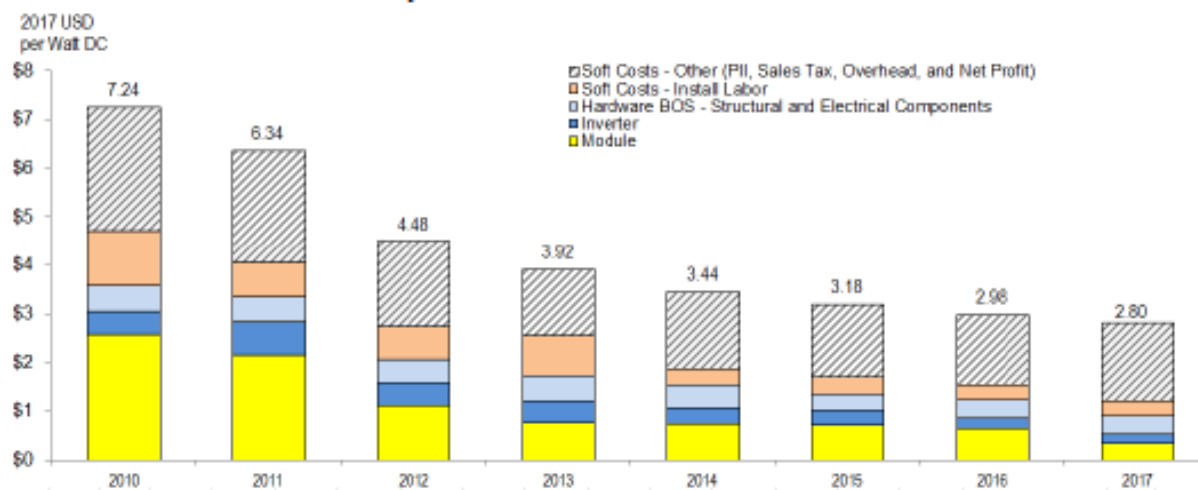


Figure 4.2: History of Residential Solar PV Cost

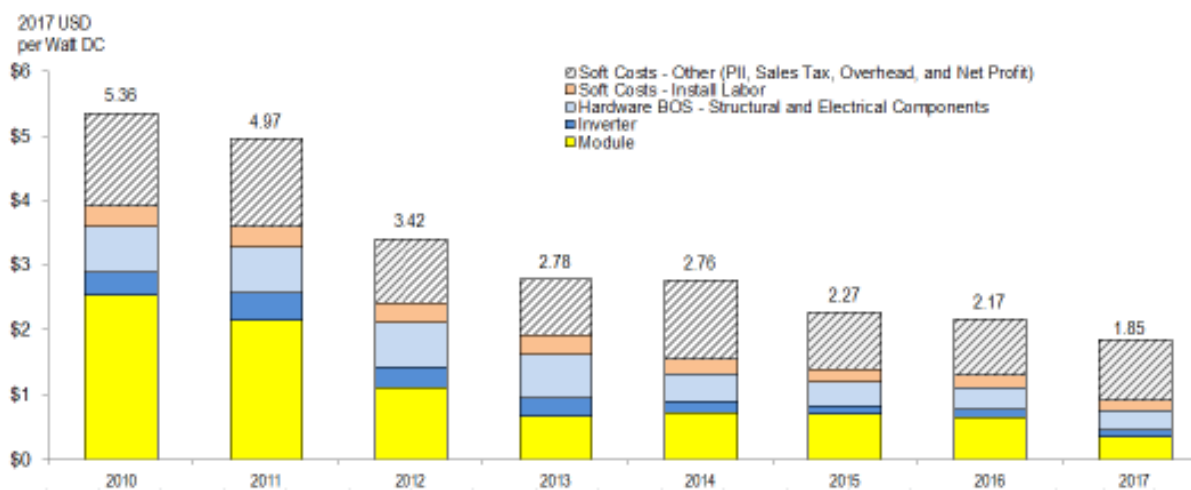


Figure 4.3: History of Commercial Solar PV Cost

Although costs are not decreasing as quickly as they did from 2010-2012, they are still falling 5-10% every year. However, potential customers rarely re-evaluate the economics of a project at their site on an annual basis, and therefore their knowledge of PV costs can lag actual costs. Furthermore, they may not be aware

³⁶ Ran Fu and others, *U . S . Solar Photovoltaic System Cost Benchmark : Q1 2017 U . S . Solar Photovoltaic System Cost Benchmark : Q1 2017*, 2017.

of changes in state and federal policies such as the reduction in the Investment Tax Credit (ITC), which provides 30% of the system value back to the owner through an income tax credit, but which is scheduled to step down to 26%, 22%, and then 10% or 0% over the coming years (See Section 4.7.1 for more details related to the ITC).

Solutions

The main recommendation to increase community awareness is:

- 1) Support a County-wide One-Stop Shop to lead an educational campaign, provide resources to the public, and act as a trusted advisor to citizens and businesses looking to undertake energy actions.

A One-Stop Shop can increase knowledge about the falling costs of solar and energy efficiency projects, as well as informing on the value of having backup storage and resiliency. A One-Stop Shop could also serve as a hub to advertise other programs led by the City, such as financing programs and financial incentives, or promulgate the benefits of a potential CCA. Lastly, a One-Stop Shop can provide neutral and trusted advice for customers negotiating with energy developers.

4.5 – Regulatory Barriers and Solutions

4.5.1 – SCE Resiliency Procurement Process

Obstacle

In 2018, SCE released a Request for Offers (RFO) to procure additional backup power and resiliency in the Goleta-Moorpark transmission area, which represents southern Santa Barbara County. The “Least-Cost Best-Fit” (LCBF) methodology used by SCE to rank projects does not give higher scoring to renewable generation projects unless the procurement is specifically seeking renewable generation, which was not the case in 2018. The LCBF methodology provides benefit to projects that can generate power at on-peak periods.³⁷ However, due to the abundance of solar generation and the resulting SCE policy changes, solar generation no longer aligns with SCE’s defined on-peak periods.

Solutions

There are two recommendations:

- 1) Work with SCE, the County, and the CPUC to design a longer procurement process with an explicit carve-out for renewables;
- 2) Lobby for the institution of a feed-in tariff (FIT) or other form of standard offer for renewable development through SCE.

It is important to note, before discussing the two recommendation in further detail, that these recommendations are not mutually exclusive and address different aspects of the renewable development and interconnection processes. A longer procurement process with an explicit carve out for renewables would increase the likelihood of viable proposals for front-of-meter renewable projects in Goleta. A standard offer for renewable development through SCE would increase the viability of front-of-meter *and* distributed renewable projects in Goleta. However, broad changes to investor-owned utility policies, as discussed here, are often best achieved at the state-level. This does not mean that the City should stop engagement efforts with SCE, but it does lend credence to continued exploration of

³⁷ California Public Utilities Commission, ‘Utility Scale Request for Offers (RFO)’.

community choice energy and add importance to the advocacy strategies discussed in the SEP (Section 6.5.2).

Given increasingly high RPS requirements for renewable generation, procuring additional amounts of non-renewable generation purely for outage scenarios is short-sighted. Although fossil fuel generation sometimes has lower cost than renewable generation, since renewable generation can be run year-round and will eventually need to be procured under the RPS, the value of renewable content should be properly accounted for in an RFO.

Alternatively, Recommendation 2 would allow utilities to consistently procure renewable power through methods other than an RFO. While standard offers such as FITs do not ensure minimum pricing, they are quicker and less administratively burdensome for both utilities and developers. For smaller projects, where administrative costs are a larger portion of overall project costs, the uncertainty of the RFO process can dissuade developers who may not be able to shoulder the administrative costs of a failed bid.

Additionally, it is important to note that SCE has historically not indicated interest in establishing a new FIT, but, rather, seeks to enable more large-scale renewable energy projects through proposed Green Tariff programs. Continued engagement with SCE will be necessary to push these programs toward a structure that supports the City's goals.

4.6 – Technical/Infrastructural Barriers

4.6.1 – Distribution Grid

Obstacle

SCE recently released Integration Capacity Analysis (ICA) maps that show which areas of the distribution grid have additional electrical capacity for high-amperage wholesale connections and which do not. Figure 4.5 shows an example of such an ICA map for the Goleta area. The intent of the ICA maps is to simplify the interconnection process by enabling developers to target areas that are more likely to be approved. Projects that are smaller than the available capacity can be interconnected with no additional study by the utility. These maps show that there are potential constraints in some parts of Goleta, particularly western Goleta.

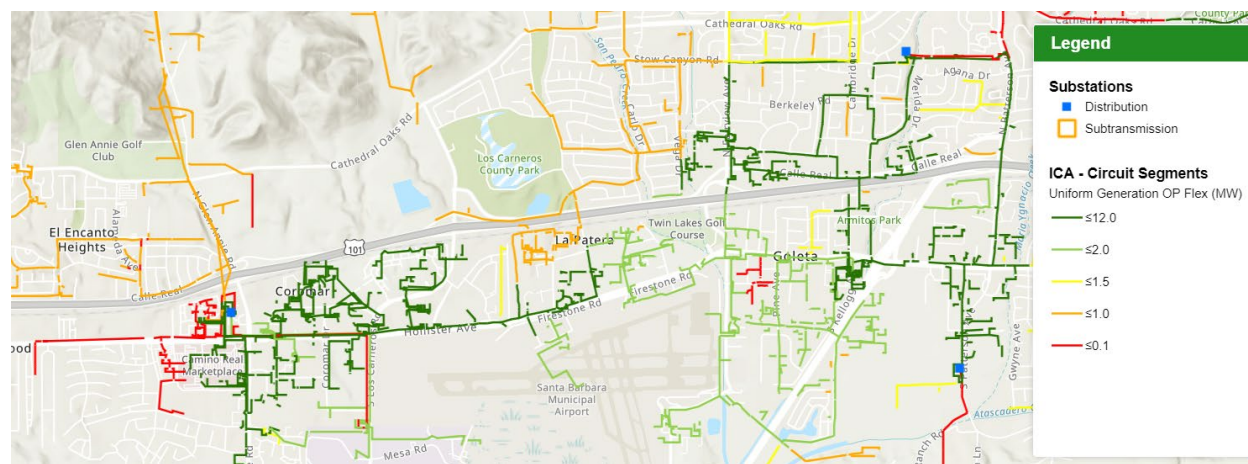


Figure 4.4: SCE ICA Map for Goleta

Solutions

There are several potential solutions to resolve this issue:

- 1) Focus energy efficiency initiatives in distribution-constrained areas
- 2) Provide larger energy efficiency incentives to residents and businesses who have been denied solar interconnection applications due to distribution-level limits
- 3) Approach SCE to upgrade or add additional feeders in the area to increase renewable energy potential

Recommendations 1 and 2 are geared towards energy projects that do not have to proceed through utility electrical interconnection processes, while Recommendation 3 would increase capacity and reduce constraints related to wire and transformer sizing. Recommendations 1 and 2 would be much cheaper and easier than Recommendation 3 but given that low on-site load is often the limiting constraint on renewable generation in ICA maps, failure to address Recommendation 3 would further limit the amount of available distributed generation capacity.

4.6.2 – Solar Automatic Shut-Off

Obstacle

Most solar installations use low-cost inverters that are tied to the grid and depend upon the grid to provide a reference voltage to operate. Therefore, these grid-tied inverters shut off during power outages, preventing the solar panels from providing power to the building during critical times. As a result, although many solar PV owners believe they can be self-sufficient during outages, their system is unavailable.³⁸

Solutions

There are several methods for solar owners to power themselves during outages:

- 1) Supplement solar PV with battery storage backup;
- 2) Install secure power backup inverters for critical circuits; and
- 3) Supplement solar PV with a diesel or propane backup generator.

Inverters used for installations with battery storage are more expensive and allow the power from solar panels to alternate between supplying the grid, the battery, and the building. The battery inverters also come equipped with surge current capability, allowing the battery to power equipment that briefly needs a high start-up power, such as refrigerators. Additionally, battery storage provides savings even in non-emergency scenarios by allowing owners to shift consumption from peak periods to off-peak periods.

In comparison, secure backup inverters do not allow complete operation of a building, and do not have surge current capabilities. However, they can provide a critical outlet for operation of one or two loads, such as internet, and are cheaper than battery storage. Finally, although renewable generation is the goal of this SEP, small backup fossil fuel generators are also much cheaper than batteries and would also allow full operation. However, they can lead to poor air quality if used for prolonged periods of time, and they are a disturbance for neighbors.

³⁸ Energy Sage, ‘Solar Power Systems: What Are Your Options in 2019?’, 2019 <<https://news.energysage.com/solar-power-systems-options/>> [accessed 12 April 2019].

4.7 – State and Federal Policy Barriers

4.7.1 – Federal Investment Tax Credit (ITC)

Obstacle

The federal ITC currently allows the owner of a renewable energy system to take 30% of the value of the system as a tax credit on income taxes. The ITC is extremely critical to renewable energy development by essentially reducing the cost of systems by 30% if the owner has a large enough tax burden, and the ITC is responsible for pushing many projects to financial viability.³⁹ This is a key driver for solar developers, as an important part of their business model involves improving financial return by being large enough to take on the tax credit for site owners that would otherwise be unable to do so, including the residential and public agency or non-profit sectors. However, the ITC is set to begin phasing down after the end of 2019 according to the following schedule in Table 4.1 on the following page:

Table 4.1: Federal Investment Tax Credit Schedule

Year	Residential Systems	Commercial and Utility Systems
2019	30%	
2020	26%	
2021	22%	
2022 and beyond	0%	10%

Although this will be detrimental to commercial and utility systems, the complete elimination of the ITC will be particularly harmful for residential systems. While safe harbors are available to reserve a previous year's ITC level if construction or procurement begins prior to the end of each year, the additional pressing deadline with major financial implications will reduce the number of potential solar projects that prove to be financially viable.

Solutions

These are the main recommendations:

- 1) Support the renewable industry in advocating for a continuation of the current ITC beyond 2019
- 2) Work with the State of California to develop a "Public Power Pool" to aggregate solar projects

Both Recommendations are advocacy solutions, with Recommendation 1 attempting to extend the current ITC, and Recommendation 2 attempting to take advantage of the current ITC while it lasts if those efforts are unsuccessful, by enabling multiple public agencies to proceed with procurement before the planned ITC step-down.

³⁹ Solar Energy Industries Association, 'Solar Investment Tax Credit (ITC)', 2019 <<https://www.seia.org/initiatives/solar-investment-tax-credit-itc>> [accessed 10 April 2019].

Chapter 5 – Recommended Sites for Development

5.1 – Introduction

The purpose of this chapter is to provide a detailed technical assessment, financial analysis, and discussion of the next steps toward development of potential solar photovoltaic (PV) project development opportunities at sites owned by the City of Goleta. These sites will contribute to Goleta’s 100% renewable electricity goal, as well as reliability and resiliency at critical sites.

Additionally, a focus of Goleta’s SEP is identifying viable private-sector renewable energy generation projects within city boundaries. These opportunities were analyzed outside of this report in discussions with private site owners and City staff. A table of identified sites and their potential has been included at the end of the table covering City-owned sites. Due to privacy concerns, these sites have been anonymized while City staff works with site owners to determine the viability and likelihood of development.

This chapter summarizes:

1. Site evaluation methodology
2. A comprehensive overview of types of solar projects, solar financing options, and incentives
3. The best sites for solar PV installations, from both technical and economic perspectives
4. Recommended solar PV system sizes and design characteristics
5. Next steps for pursuing the recommended options with a timeline for implementation

Based on information collected during pre-screen assessments and in-person site visits, high-potential sites for solar PV deployment have been identified. Figure 5.1 summarizes the projects’ total potential economic and climate impact over a 25-year analysis period, assuming a power purchase agreement (PPA) financing structure. PPAs will be discussed further in Section 5.4.

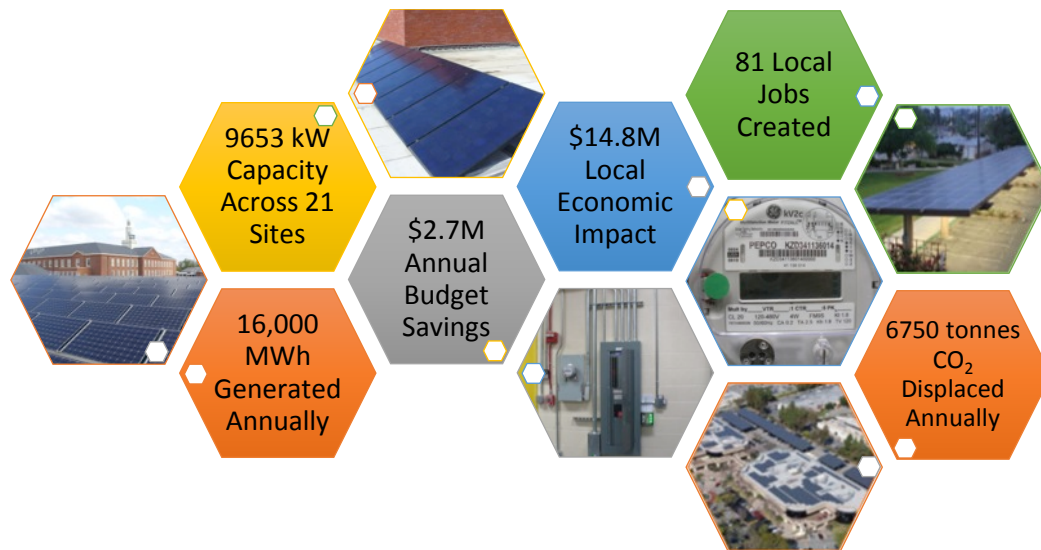


Figure 5.1: Projected Economic and Climate Benefit of Proposed Sites⁴⁰

5.2 – Site Summary and Evaluation Methodology

Using information collected during pre-screening discussions and in-person site visits, viable sites on rooftops, parking lots, and open land have been selected and mapped out using a modular approach to provide system and project design flexibility. Based on the area available for solar at each site, the maximum possible solar PV system capacity has been estimated at 290 kilowatts (kW) to be installed across City facilities. Installing the maximum solar PV capacity at City facilities would offset 36% of current facility electricity use. The table below summarizes each site and whether the systems are expected to be interconnected behind-the-meter and net-metered or interconnected as front-of-the-meter systems selling directly into the electricity grid.

⁴⁰ Economic and climate impacts estimated using the Jobs & Economic Development Impact (JEDI) tool from NREL and based on development of every site at the capacity listed in Table 5.1.

Table 5.1: Site Summary

ID	Name	Priority Score	Site Type	Interconnection	System Size (kW-DC)	Energy Output (kWh/year)
Goleta Municipal Solar Site Potential						
1	Goleta Library	A	Roof / Carport	Behind meter	118	190,911
2	Goleta City Hall	A	Roof / Carport	Behind meter	145	226,867
3	Goleta Valley Community Center	B	Carport	Behind meter	61	116,011
Total Maximum at Municipal Site(s)					324	533,789
Total Recommended for Municipal Site(s) (A+B)					324	533,789
Goleta Solar Site Potential						
4	Public – Commercial Site 1	B	Roof / Carport	Behind meter	300	492,000
5	Public – Commercial Site 2	A	Roof / Carport	Behind meter	630	1,050,000
6	Public – Commercial Site 3	A	Roof / Carport	Behind Meter	548	961,900
7	Public – Commercial Site 4	A	Roof / Carport	Behind Meter	402	657,700
8	Private – Commercial Site 1	A	Roof / Carport	Behind Meter	334	517,000
9	Private – Commercial Site 2	A	Roof	Behind Meter	1,040	1,560,000
10	Private – Commercial Site 3	A	Roof / Carport	Behind Meter	1,180	1,940,000
11	Private – Commercial Site 4	A	Roof / Carport	Behind Meter	400	621,000
12	Private – Commercial Site 5	C	Roof / Carport	Behind Meter	45	68,000
13	Private – Commercial Site 6	B	Roof	Behind Meter	185	286,000
14	Private – Commercial Site 7	B	Roof / Carport	Behind Meter	945	1,510,000
15	Private – Commercial Site 8	B	Roof / Carport	Behind Meter	562	930,000
16	Private – Commercial Site 9	B	Roof / Carport	Behind Meter	949	1,500,000
17	Private – Commercial Site 10	A	Roof / Carport	Behind Meter	1,270	2,072,000
18	Private – MF Residential Site 1	C	Roof	Behind Meter	330.8	496,000
19	Private – MF Residential Site 2	A	Roof	Behind Meter	110.6	168,800
20	Private – MF Residential Site 3	B	Roof	Behind Meter	471.5	700,900
21	Private – MF Residential Site 4	C	Roof	Behind Meter	81.6	119,500
Total Maximum at Private Site(s)					9,653.5	15,516,100
Total Recommended for Private Site(s) (A+B)					9,195.9	14,832,600

In addition to confirming the physical space available for solar PV systems, planned energy and structural renovations and other site-specific issues were assessed. For rooftop sites, existing roof age, condition, and material were evaluated, as well as additional limitations such as the presence of HVAC equipment, parapets, surrounding vegetation, skylights, and conduits—all of which cannot be easily relocated. For parking lot or parking structure solar carport systems, the main site selection issues are the availability of space for construction, geotechnical concerns relating to soil, surrounding vegetation, and distance to the electrical interconnection point. The potential challenges were rated on a scale from *None* (no issues) to *High* (likely to require extensive review or remediation). This siting methodology applied these challenges to municipal sites, but these challenges can, and should, be applied to any site where a solar installation is being considered. Below is a description of each criterion.

Table 5.2: Technical Feasibility Criteria

Criterion	Description
Shading	Survey the surroundings of the usable areas to identify obstructions that could potentially cast shadows on the solar modules and reduce output, such as rooftop HVAC equipment, rooftop access penthouses, antennas, trees, lampposts, and neighboring buildings. Even minor shading can have a profound negative impact on system performance. In order to assess the amount of direct sunlight available at each usable area, the annual sun path is plotted at various points using industry standard tools and software.
Electrical	Inspect electrical rooms for main breaker and switchgear amperage and voltage ratings, as well as availability of space for additional electrical equipment such as inverters. The location of the utility electrical meter(s) is important, as the distance between the solar modules and the point of connection must be minimized to reduce voltage drop, reduce costs, and increase system efficiency.
Structural	Potential challenges such as roof and structural integrity are evaluated, including the age, condition, and material of the roof as well as the building and building layout. Potential shading sources include tall trees, rooftop mechanical equipment, and surrounding buildings.
Geotechnical	Geotechnical issues pertain to the surrounding area of the overall site such as soil condition, water table levels, and presence of fault lines. Structural capacities for soils vary greatly from site to site but, generally, projects seeking underground work of significant depth (i.e. solar carports with piers 8-12 feet below ground) encounter issues around water tables or in areas where soft soils can settle.
Environmental	Environmental criteria relate to environmental impact report requirements and other such considerations. In California this is primarily focused on site characteristics that will trigger review under the California Environmental Quality Act (CEQA).

The table below summarizes this technical analysis for each site:

Table 5.3: Technical Feasibility Site Summary

ID	Name	Shading	Electrical	Structural	Geotech.	Enviro.	Comments
1	Goleta Library	Low	Medium	Low	Low	None	A geotechnical study would need to be conducted for the carport.

							The line of trees at the bottom of the parking lot should be far enough that shading impact is low. The electrical capacity on the switchgear will need to be confirmed, but likely won't limit project development. No apparent structural issues from site visit.
2	Goleta City Hall	Low	Low	Low	Low	None	A geotechnical study would need to be conducted for the carport. Many trees on-site, but mostly small. There is enough electrical capacity on the switchgear. No apparent structural issues from site visit.
3	Goleta Valley Community Center	None	Medium	None	Medium	None	Possible water table issues due to nearby creek, would need to conduct a geotechnical study to confirm. No trees shading parking lot. Electrical switchgear is very old and may need to be updated.

Based on this technical feasibility, each evaluated site was prioritized and scored with an “A” ranking, being most feasible and ready for immediate solar deployment, to a “C” ranking, which would require heavy modifications for solar deployment to be feasible. Below is a description of each category.

Table 5.4: Project Development Priority Ranking

Score	Description
A	Sites with an “A” score have excellent solar potential and current conditions support immediate deployment. Generally, these projects have roofs that are less than five years old and/or have minimal to no shading or other technical feasibility concerns.
B	Sites with a “B” score also have solar potential and could be developed immediately, but have minor site-specific challenges related to roof condition, shading, or other. Generally, these projects have roof layers that are 5-10 years old, experience minimal shading and/or may have issues related to all other technical feasibility criteria, such as the potential need for minor electrical equipment upgrades. Sites with no technical feasibility concerns (and would otherwise be given an A priority ranking) but only allow for a small system size are placed in this category.
C	Sites with a “C” score have high-risk technical issues or are otherwise troublesome sites. While a PV system may still be feasible, it is unlikely that these systems will be able to provide economic savings to justify the cost of the systems at this time. In the event of any near-term procurement, these sites will not be included.

5.3 – Financial Structure Details

5.3.1 – Behind-the-Meter Projects

A cost/benefit analysis was conducted based on the review of the historical energy usage at Goleta’s municipal facilities, when available. This analysis allows for a detailed projection of potential avoided energy and peak demand costs. Financial modeling has been performed for both primary ownership options: a direct purchase and a power purchase agreement. The results are presented within the detailed section for each site. The analysis includes only arrays with development priority scores of “A” which are recommended for immediate deployment.

Avoided costs from energy and demand charges provide the primary financial benefit of a behind-the-meter solar PV system. The key drivers to ensure maximum avoided costs are a proper system design, which affects system production and long-term operations, as well as the utility rate schedule, which determines the value for the energy produced. The financial analysis assumes the solar output reduces kWh energy charges at the retail rate, which is the valuation structure under a net metering tariff in SCE territory. As for demand charges, it is possible for a solar PV system to reduce the maximum demand in a given month and/or year. However, the demand reduction percentage is difficult to reliably predict in any given month due to the variability of energy usage and solar output and no guarantee that they will be coincident, among other factors. This financial analysis assumes a conservative estimate of 10% demand reduction from solar PV – that is, utility demand charges will be reduced by 10% of the PV system nameplate size.

Additional financial analysis and explanation of financing options and incentives is included in the next section.

Direct Purchase Option

With this option, the municipal agency or facility owner would use existing cash reserves to purchase the system outright (or finance the purchase through a loan). Under this scenario, the site owner is responsible for all ownership concerns, including operations and maintenance (O&M), regular system cleaning, insurance, and monitoring of system production. This requires a significant up-front capital expenditure and on-going operational costs.

Third-Party Ownership - Power Purchase Agreement

With this option, the municipal agency or facility owner (site host) would enter into a contract (typically 20 years) with a third-party to purchase all energy produced by a solar PV system installed on the property in question. This third-party would own the solar PV system and be fully responsible for all ownership costs, including financing, O&M, insurance, and system output.⁴¹ This structure enables site owners to receive electricity from a solar PV system at no upfront costs and allows the tax incentives for solar installations to be monetized by the third-party. This is particularly important for economic viability when the site host is a public agency or non-profit that cannot take advantage of the tax benefits.

The site host pays a fixed rate for the electricity produced by the solar array. Ideally, this rate is lower than the current cost for electricity supply. PPA’s typically have a yearly price escalator of between 0-3%. The value of this escalator relative to the rate at which utility prices increase (assumed as 3% in this analysis)

⁴¹ Solar Energy Industries Association, ‘Solar Power Purchase Agreements’, 2019 <<https://www.seia.org/research-resources/solar-power-purchase-agreements>> [accessed 10 April 2019].

will affect the savings in future years. To lower this contracted PPA rate, the site host can also pre-pay a portion of the project at the beginning. This allows site hosts to use up-front capital while allowing a third-party to take advantage of the ITC if they cannot.

In general, the Direct Purchase option provides the greatest savings over the long-term for an entity with a tax appetite, but requires a significant initial project investment and ongoing O&M for the systems. The third-party option typically provides budget certainty and the greatest savings for tax-exempt entities and is thus appealing for local governments. Monthly payments tend to be lower than current or projected utility bills starting on day one.

Hybrid Purchase Options

Hybrid purchase options also exist to allow local governments, in particular, to take the best of the cash purchase and PPA options. Site hosts that have a small amount of up-front capital, but not enough to purchase the whole system, can buy down a portion of the system to lower the PPA rate for the duration of the contract. This enables the third-party developer to still take advantage of the tax credits, while reducing annual costs.

Alternatively, site hosts with no up-front capital but a desire to own the system for greater flexibility and control can sign PPA contracts with buy-out clauses. Buy-out clauses allow the site host to buy the system at a specific later point in time, typically six to eight years after development. This allows the site host to take ownership of the system after the full tax benefits have been exercised.

Table 5.5: Applicable Utility Solar Programs and Tariffs in Goleta

Type	Description
Net-metering ⁴²	<i>Overview:</i> California requires its utilities to offer a net-metering tariff that allows customers to receive the full retail value for solar generation that exceeds their facility's real-time demand. <i>Project Size-limit:</i> Projects are limited to the equivalent of 100% of the customers annual load. <i>Net-Excess Generation:</i> If net-excess generation exists at the end of a billing cycle, it is rolled over and credited to the next billing cycle at the retail rate. If net-excess generation exists at the end of a 12-month period, the customer can opt to roll over the credit indefinitely at the retail rate or receive a payment for that generation at a rate equivalent to the average wholesale spot market price of electricity (between 7am and 5pm) during the year that the excess electricity was generated. <i>Renewable energy credits (RECs):</i> The customer retains the RECs associated with their solar generation unless they choose to receive a payment for their net excess generation, in which case the utility gains the rights to the RECs.

Table 5.6: Applicable Solar Incentives in Goleta

Type	Description
Federal	Investment Tax Credit (ITC): Allows site owner to take 30% of the project value as a credit on their federal taxes. Accelerated Depreciation: Allows the entire system to be depreciated over the first year.

⁴² More information: <http://programs.dsireusa.org/system/program/detail/276>,
<https://www.sce.com/residential/generating-your-own-power?from=/customergeneration/customer-generation.htm>

State	Self-Generation Incentive Program (SGIP): Provides rebates for distributed energy systems, particularly with energy storage. ⁴³ Multifamily Affordable Solar Housing (MASH): Provides a rebate to qualifying multi-family housing tenants (currently a waitlist for new applicants). ⁴⁴
Local	Property-Assessed Clean Energy (PACE) Financing for residential/commercial: Allows owners to finance installations through a loan that is paid back on property taxes. ⁴⁵ On-bill financing (OBF): Allows owners to finance energy projects through loans that are paid back on utility bills; currently only available for energy efficiency projects. ⁴⁶

5.3.2 – Wholesale Projects

The available generation at some of the sites, particularly at commercial buildings, may be much greater than the load. These projects, also called wholesale projects, are interconnected directly to the distribution grid and are built with the intention of selling power directly to the utility, or another off-taker, such as a CCA, or into the wholesale electricity market. In either case, the site host would lease their land (typically for a 20 or 30-year period) to a renewable energy developer to design and build the project.

In most cases, the developer is responsible for finding a project off-taker or determining whether it is financially viable to bid the project's capacity into the wholesale electricity market. In the case of the projects considered in this analysis, the opportunities and solutions discussed in the SEP document are designed, in part, to assist developers in overcoming the challenges of determining a financially viable project structure.

⁴³ California Public Utilities Commission, 'Self-Generation Incentive Program', 2019 <<http://www.cpuc.ca.gov/sgip/>> [accessed 10 April 2019].

⁴⁴ California Public Utilities Commission, 'CSI Multifamily Affordable Solar Housing (MASH) Program', 2019 <<http://www.cpuc.ca.gov/general.aspx?id=3752>> [accessed 10 April 2019].

⁴⁵ PACENation.

⁴⁶ Office of Energy Efficiency and Renewable Energy.

5.4 – Site Evaluations

5.4.1 - Goleta Library

Site Overview

Address: 500 N Fairview Ave, Goleta, CA 93117

Utility Provider:	SCE	Electricity Tariff:	TOU GS-1 D -> TOU GS-1 E
Annual Energy Usage:	193,398 kWh	Monthly Demand Peak:	80 kW

PV System Overview

System Size:	118 kW	Electricity Offset:	99%
Expected Year 1 Output:	190,911 kWh	Expected GHG Reduction:	30 tons/yr

Financial Summary

PPA Rate:	14 c/kWh	Simple Payback Period:	8.2 yrs
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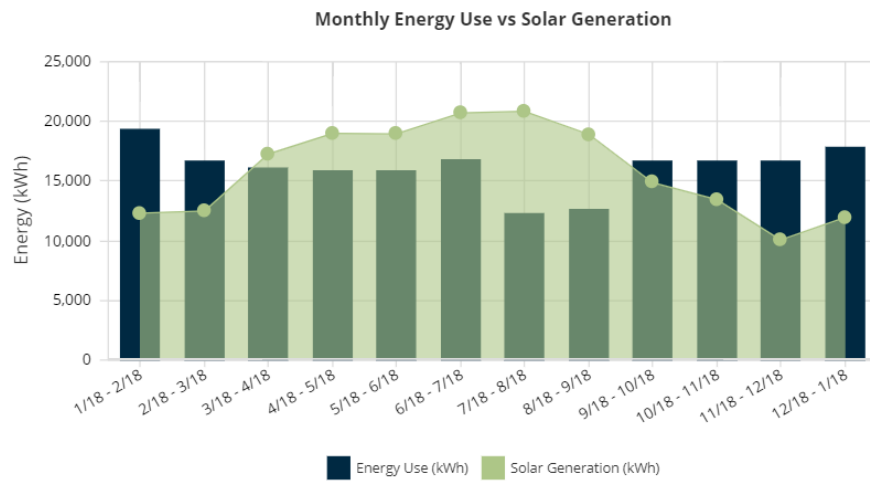
PV System Summary

There are three potential locations at the library for solar siting: the upper roof, the lower roof, and the parking lot. Due to load constraints, the installation was sited on only the upper roof and the parking lot. There are no expected issues with rooftop integrity, but electrical capacity on the switchgear needs to be confirmed and may be an issue, particularly with a battery storage system.

To take advantage of tax credits, the project is shown as financed through a zero-escalator PPA. Due to the recent change in time-of-use electricity rates, a 14 c/kWh PPA will initially be slightly more expensive than current electricity rates during solar production. However, as time passes, rising utility rates will surpass the flat PPA rate, leading to savings. The 8.2-year payback could potentially be improved by reducing the size of the system so that less generation is exported to the grid. However, a fully-sized system was chosen to help the City comply with its renewable energy goal for municipal facilities.

Battery storage systems were analyzed for inclusion in this project but were not found to be feasible at a 3 c/kWh adder to the PPA. The load profile for the library is similar to a traditional office building, with most of the load occurring between regular 9AM-5PM working hours. As such, there is little financial benefit to shifting solar production to the new evening peak period. However, the City may still want to include a battery for resiliency purposes, since the library is an important community gathering site during emergency scenarios.

Energy Use and Solar Generation Profile



Proposed Solar PV Design Layout



5.4.2 - Goleta City Hall

Site Overview

Address: 130 Cremona Dr # B, Goleta, CA 93117

Utility Provider:	SCE	Electricity Tariff:	TOU GS-2 D -> TOU GS-2 E
Annual Energy Usage:	225,772 kWh (projected)	Monthly Demand Peak:	73 kW (projected)

PV System Overview

System Size:	145 kW	Electricity Offset:	100%
Expected Year 1 Output:	226,867 kWh	Expected GHG Reduction:	36 tons/yr

BESS System Overview

System Size:	57 kW	System Duration	4 hrs
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Financial Summary

PPA Rate:	17 c/kWh	Simple Payback Period:	14.7 yrs
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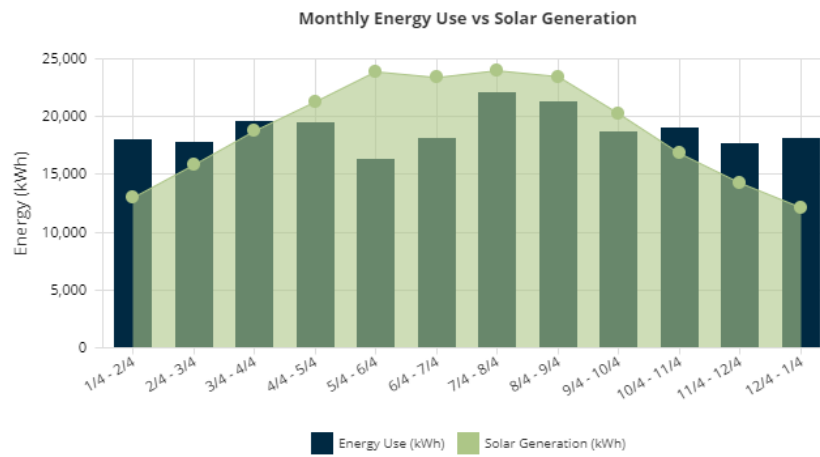
PV System Summary

A solar installation at City Hall can be installed on the roof as well as on part of the parking lot to the east of City Hall that is assigned to it. Due to load constraints, the installation was sited on the roof and a portion of the parking lot. In order to plan for the approved purchase by the City of the entire City Hall building, the design used in this analysis is sized to a *projected* electrical load. This projected load is based on the current electrical load scaled by an increase in square footage to reflect the planned purchase of the entire City Hall building. There are no expected issues with rooftop integrity or with the electrical capacity on the switchgear.

To take advantage of tax credits, the project is shown as financed through a zero-escalator PPA. Due to the recent change in time-of-use electricity rates, a 17 c/kWh PPA (including a 3 c/kWh for storage) will be more expensive than current electricity rates during solar production in the short term. However, as time passes, rising utility rates will surpass the flat PPA rate, leading to annual savings after the 8-year point, and a positive cumulative cash flow after 14 years. The payback could potentially be improved by reducing the size of the system so that less generation is exported to the grid. However, a fully sized system was chosen to help the City comply with its renewable energy goal for municipal facilities.

Preliminary modeling of a battery storage system at a 3 c/kWh adder to the PPA resulted in a payback period of 14.7 years, compared to 15.9 years in a solar-only case. The load profile for City Hall is similar to a traditional office building, with the majority of the load occurring between regular 9AM-5PM working hours. Thus, while there is some financial benefit of using a storage system to shift solar production to the new evening peak period, the benefits are not huge. However, since the modeling did indicate small financial benefits and those, coupled with the important resilience benefits at the facility since City Hall is the Emergency Operations Center for the City, indicate that the City should further explore inclusion of a battery system on site.

Energy Use and Solar Generation Profile



Proposed Solar PV Design Layout



5.4.3 - Goleta Valley Community Center

Site Overview

Address: 5679 Hollister Avenue, Goleta, CA 93117

Utility Provider:	SCE	Electricity Tariff:	TOU GS-1 D + TOU GS-1 E + TOU GS-2 E -> TOU GS-2 E
Annual Energy Usage:	116,011 kWh	Monthly Demand Peak:	49 kW

PV System Overview

System Size:	61 kW	Electricity Offset:	88%
Expected Year 1 Output:	102,296 kWh	Expected GHG Reduction:	18 tons/yr

BESS System Overview

System Size:	33 kW	System Duration:	4 hrs
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Financial Summary

PPA Rate:	17 c/kWh	Simple Payback Period:	6.4 yrs
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PV + BESS System Summary

A solar installation at the Community Center could be located on the roofs, the main parking lot, or the parking lot in the back. However, due to load constraints, the installation was sited only in a portion of the back-parking lot, which is south-facing and unshaded. There may be water table issues leading to higher geotechnical costs for increased support of the carport. In that case, a flush-mount installation on the south-facing rooftops would likely be the next best option. The electrical system has capacity for an installation but is very old and may still require an upgrade.

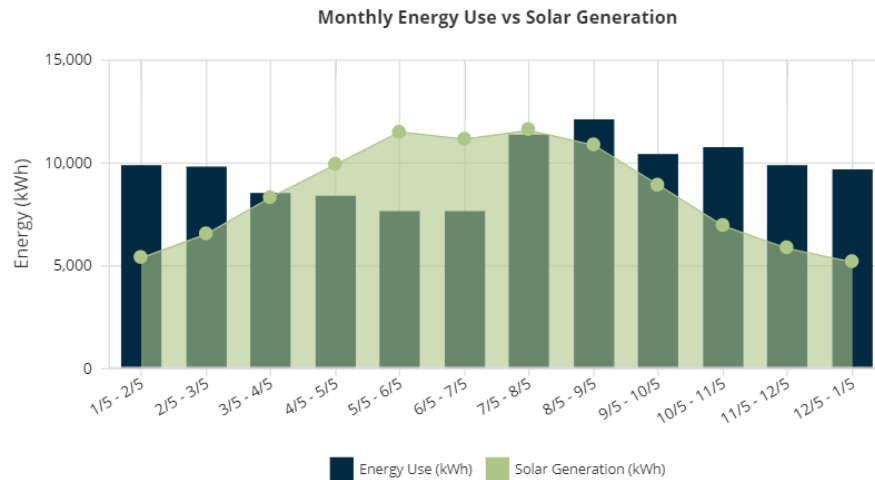
Due to the several different meters located at the site, aggregation of these meters is recommended to allow as large a system as possible. Even then, relatively low load constrains this system to less than 20% of its maximum potential. As such, it could also be used as a site for a potential Community Solar program, which would enable both greater development at the site and would be thematically fitting.

A relatively small battery system accounted for 3c/kWh out of the 17c/kWh PPA. The load at the Community Center has noticeable demand spikes, so a battery system was found to be very strong at reducing demand charges. Additionally, the battery would help for resiliency purposes, since the Community Center is an important gathering spot in emergency scenarios. The battery will likely only be able to sustain full use of the Community Center for a few hours, so a load shedding plan should be designed to operate only critical loads during this time.

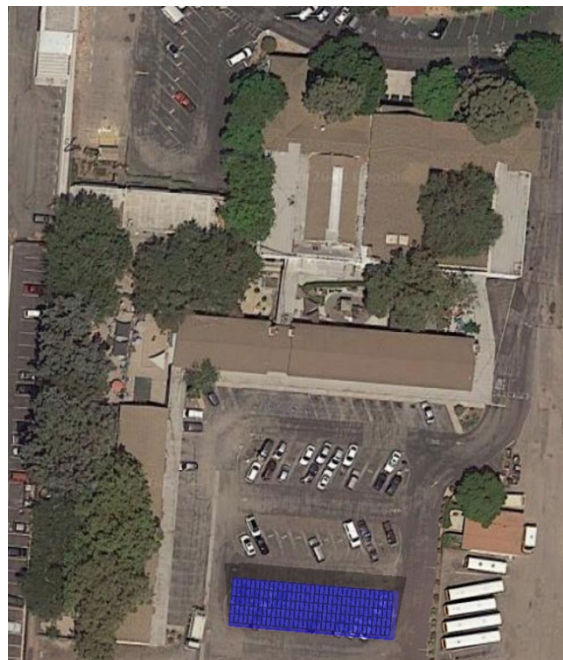
To take advantage of tax credits, the project is shown as financed through a zero-escalator PPA. Due to the recent change in time-of-use electricity rates, a 17 c/kWh PPA will be more expensive than current electricity rates during solar production in the short term. However, as time passes, rising utility rates will surpass the flat PPA rate, leading to savings after the 4-year point, and a positive cumulative cash flow after 7 years. The payback could potentially be improved by reducing the size of the system so that less

generation is exported to the grid. However, a fully-sized system was chosen to help the City comply with its renewable energy goal for municipal facilities.

Energy Use and Solar Generation Profile



Proposed Solar PV Design Layout



5.5 – Next Steps

The SEP represents the final step in the solar feasibility assessment process and now requires internal review by City stakeholders. The next steps differ based on the ownership of the assessed site. For sites owned by the City, the project timeline is as follows:



Figure 5.2: Next Steps in Site Development

If the City decides to move forward with an RFP for selected City-owned sites, the following next steps have been identified to move this project along quickly and achieve the desired impact on cost reduction and renewable energy production before available federal solar incentives decrease.



Figure 5.3: RFP issuance and execution

For the private sites assessed in this report, the next step is to continue the outreach process and engage site owners around the findings of this analysis. This outreach has been initiated by the project team in order to raise awareness and gather necessary information to complete this report and the City can build on these relationships and continue to catalyze development.

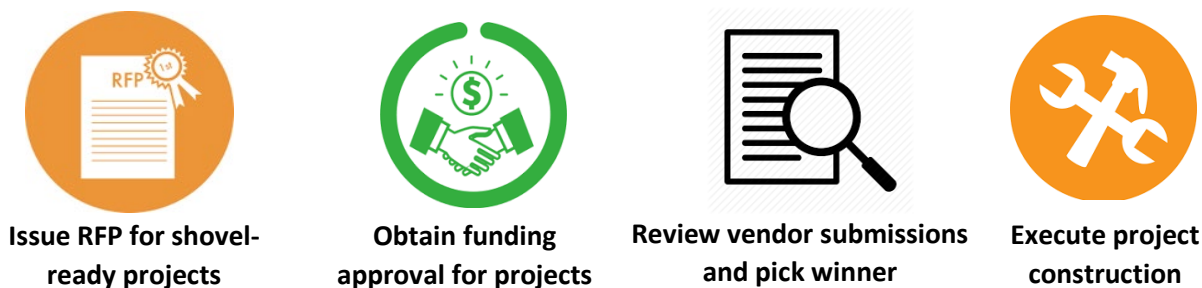


Figure 5.4: Private Site Outreach

5.6 – Methodology

Technical Assessment Methodology Used in this Report:

- A proprietary approach to performing a solar site technical analysis was used, which involves dynamic scenario creation and evaluation processes along with publicly and privately developed software and tools to determine all the relevant variables and trade-offs between options. These tools may include Helioscope, PVsyst, Measure Map Pro, Google Earth, AutoCAD, and others.
- Solar access is defined as the availability of direct sunlight that reaches the photovoltaic panels. A higher solar access percentage reflects fewer shading obstructions. Shading obstructions may include surrounding buildings, mechanical and other equipment on rooftops, architectural features of the building, tall trees, and other surrounding vegetation. To calculate available space at each site, the site is visited, where possible, with available areas compared to aerial views from Google Earth. Shading analysis is performed using Solmetric SunEye.
- Optony uses industry standard tools as well as proprietary financial modeling software with local utility rate schedules and typical meteorological year (TMY) 3 data, and neutral to conservative inflation, renewable energy certificate/credit and Investment Tax Credit assumptions in all financial modeling. This approach allows Optony to present the client with realistic forecasting that reduces risks and estimates realistic project returns.
- Project timing is very important in the overall economics of a solar system installation due to the time-sensitive nature of the various federal, state, utility, and local incentives, particularly the ITC, which is set to reduce after the end of 2019. Projects have been analyzed based on construction completing in 2019.

Financial Assumptions Used in this Report:

The assumptions and price points used in the financial modeling are based on current local market conditions in southern Santa Barbara County as of January 2019.

- **Utility Supply and Delivery Rates:** Obtained from customer's electricity bills and/or utility tariff.
- **Utility Escalation Rate:** 3% per year. While difficult to predict on a year-to-year basis, 3% is the long term (50+ year) historical average.
- **O&M Cost:** \$3/kW/yr.
- **O&M Escalation Rate:** 0%.
- **Panel Degradation Rate:** 0.5% per year. This is the industry average for well-maintained systems.
- **Discount Rate:** A discount rate of 6.5% was used.

Chapter 6 – Specific Recommended Actions and Timeline

The recommendations listed in Chapter 4 were compiled and organized into a small number of strategies, divided into 5 key program areas. Not every recommendation is described in further detail, such as those already being undertaken as part of the SEP, and those which were deemed to be relatively simple with pre-existing City precedents, such as continuing to support regional collaboration. This chapter addresses remaining recommendations with more details and suggestions for future implementation planning.

6.1 – Regulatory Program Area

6.1.1 – Update Residential and Commercial Solar and Solar + Storage Ordinances

Strategy Description

The goal of this strategy is to turn the City into a desirable area for solar developers to operate by greatly reducing permit barriers. There are two key steps to updating residential and commercial ordinances for stand-alone solar systems and combined solar and storage systems, to take the City beyond what is purely required by state regulations:

- 1) Implement electronic submission for energy storage permitting
- 2) Create a new solar ordinance that also streamlines permitting for larger sized systems, up to anywhere between large residential (<20 kW) to small commercial systems (<100 kW), with a checklist of requirements that must be, and typically are, met to make projects eligible for the streamlining.

Some potential methods to streamline permitting beyond current requirements are listed below:

- 1) Enable online permit submissions and over-the-counter permits for larger PV systems (beyond the <10 kW systems currently fast-tracked)
- 2) Use public-private partnerships to pilot solar design software that uses integrated City-approved design parameters to only create designs that are already permit-approved with respect to the City's requirements.
- 3) Enable virtual safety inspections for solar installations through mobile phone video calls that can be scheduled and conducted on short notice

Currently, AB2188 requires over-the-counter permit approval and a 3-day turnaround for online submissions for all systems under 10 kW. Table 6.1 below shows how much further potential would be enabled by an expansion of this threshold⁴⁷:

Table 6.1: Solar Fast-Track Approval Potential by Streamlining Threshold

Solar Streamlining Threshold	Cumulative Additional Solar Capacity (MW)	Cumulative % of Total Commercial and Industrial Solar Capacity
< 20 kW	16 – 21	16%
< 30 kW	27 – 36	29%
< 40 kW	31 – 41	33%
< 50 kW	43 – 57	45%
< 60 kW	50 – 66	53%
< 70 kW	55 – 72	57%
< 80 kW	57 – 75	60%

⁴⁷ Data based on statistical solar potential estimates based on building sizes

< 90 kW	61 – 81	65%
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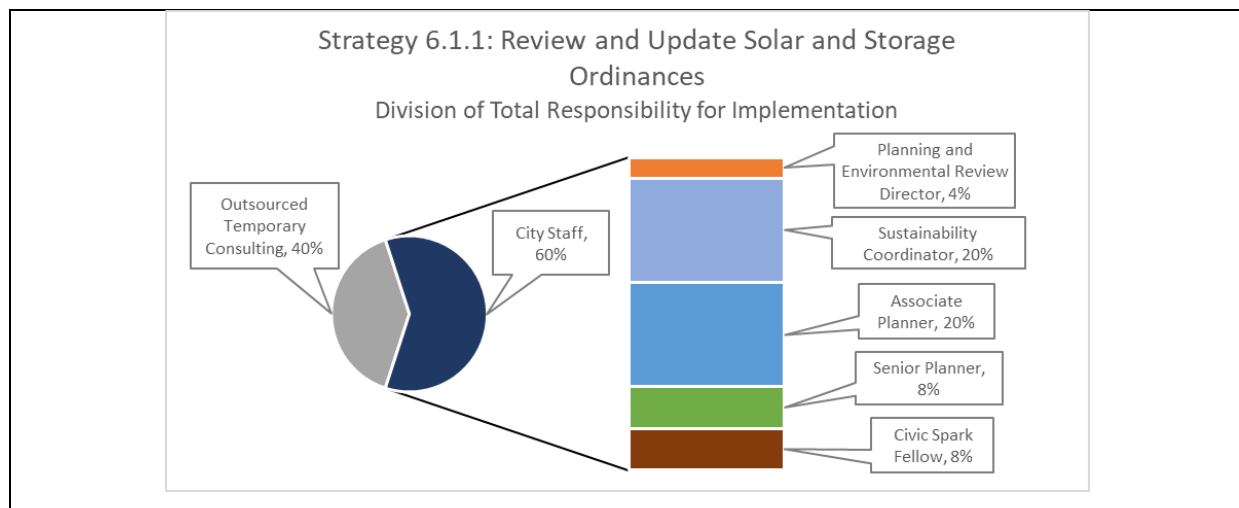
Contributions to the goal, as modeled below, are currently shown for a 40-kW threshold for streamlined expansion, to target roughly 1/3rd of the commercial solar installation potential in the city.

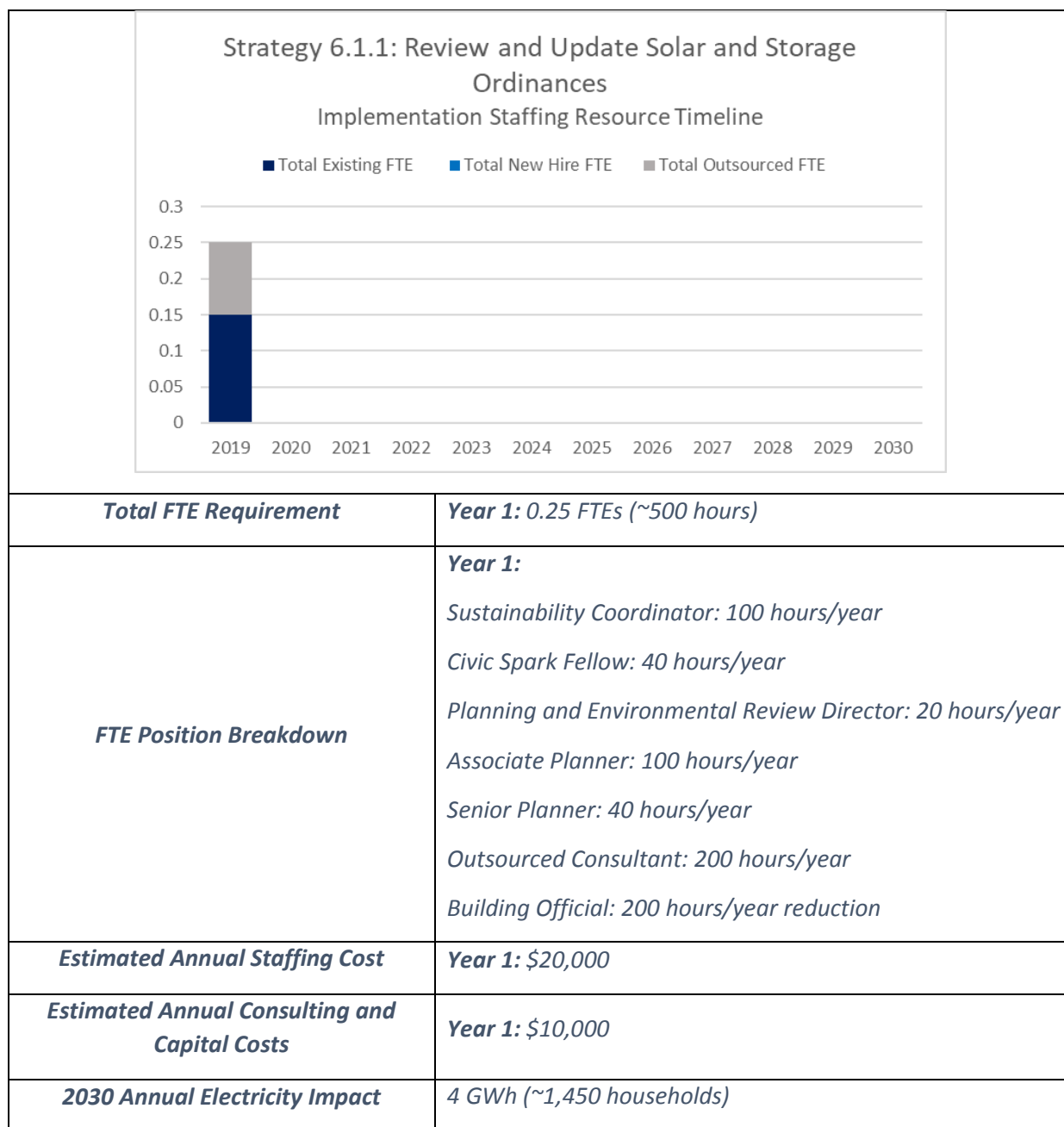
Action Plan – Project

2019

1. Explore funding strategies for municipal projects
2. Compile outstanding questions and list of necessary Request for Proposal (RFP) materials for inclusion in a scope of work for site assessment consultants
3. Conduct best practices review of residential and small commercial solar and solar + storage permitting processes of other cities
4. Use the results of the SEP statistical analysis to identify solar potential at each new system size threshold (e.g., MW potential < 10 kW, < 20 kW, < 30 kW, etc.)
5. Work with Building Official and other members of the Building and Safety Division to draft revised ordinances for solar and solar + storage
6. Circulate draft ordinance to all relevant City stakeholders for written feedback
7. Obtain approval from City Council

Funding Requirements, Staffing Requirements, and Energy Impacts





Case Study: Streamlined Permitting through Virtual Inspections

Los Angeles County has recently launched a virtual inspection program for residential photovoltaic installations. This program is not mandatory and must be agreed to by the inspector. The process requires that the applicant have an active valid permit for the work, a flashlight, and an approved application for a video call such as Skype or Facetime. As opposed to examining the system in person, the inspector instructs the applicant to show the important aspects of the system virtually, through the phone's video application. Then, the inspector sends a copy of a correction notice within 30 minutes and updates inspection records as necessary. The program is expected to achieve reductions in soft costs for both applicants and safety inspectors. The program is set to be evaluated in a few months to determine

inspectors' comfort level towards virtual inspections, as well as their efficacy compared to in-person inspections.

6.1.2 – Institute Energy Benchmarking Policy for Large Commercial Buildings

Strategy Description

While state-wide building codes are aimed at making new construction more energy-efficient, energy benchmarking is aimed at reducing the energy use of already constructed buildings. Energy benchmarking involves comparison of how much energy buildings use, normally specified per square foot so that it applies to buildings of different sizes. Depending on the implementation, the benchmarking can be either voluntary or mandatory. Currently, AB802 requires all buildings greater than 50,000 ft² to benchmark their energy consumption by June 1st, 2018.⁴⁸ This requirement could apply to between 36 – 89 buildings in Goleta, based on JDL mapping data⁴⁹ and SLED data, taken from CoStar Realty Information.⁵⁰ Impacts are currently estimated based on the latter data.

The state can levy fines against those who do not comply, although no specific levels are stated. Benchmarking policies can also penalize building owners who do not meet certain energy thresholds per square foot, or reward buildings who do meet them.⁵¹

Impacts currently assume a mandatory requirement operating along the following schedule:

Table 6.2: Proposed Energy Benchmarking Intensity Schedule

Year	% Over Average Usage	Energy Intensity Benchmark (kWh/ft ²)
2022	50%	9.6
2023	45%	9.2
2024	40%	8.8
2025	35%	8.3
2026	30%	7.9
2027	25%	7.4
2028	20%	6.9
2029	15%	6.4
2030	10%	5.8

Energy benchmarking is generally only applied to buildings of a certain minimum size. The lower the threshold for applicability, the more buildings are included, and therefore the more impact this policy can have. However, as more buildings are included, additional administrative burdens also exist. Additionally, since larger buildings use more energy than smaller buildings, they comprise a proportionally larger amount of Goleta's energy use, furthering the impacts of this strategy. The table below shows how many buildings and how much square footage would be included under various applicability thresholds:

⁴⁸ California Assembly, *AB-802 Energy Efficiency*. (Assembly, 2015)

<https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB802> [accessed 10 April 2019].

⁴⁹ JDL, *Building Sizes in Goleta*, 2019.

⁵⁰ US Department of Energy, 'State & Local Energy Data', 2018

<<https://apps1.eere.energy.gov/sled/#/results/transportation?city=Lafayette&abv=CO§ion=electricity¤tState=Colorado&lat=39.9935959&lng=-105.08970579999999>>.

⁵¹ California Energy Commission, 'Building Energy Benchmarking Program', 2019 <<https://www.energy.ca.gov/benchmarking/>> [accessed 10 April 2019].

Table 6.3: Goleta Commercial Building Data

Energy Benchmark Threshold	% of Commercial Buildings	% of Commercial Square Footage
> 5,000 ft ²	64%	95%
> 10,000 ft ²	37%	86%
> 15,000 ft ²	28%	81%
> 20,000 ft ²	22%	76%
> 25,000 ft ²	19%	72%
> 30,000 ft ²	16%	68%
> 35,000 ft ²	14%	66%
> 40,000 ft ²	12%	63%
> 45,000 ft ²	12%	61%
> 50,000 ft ²	11%	60%

Although only roughly 1/10th of commercial buildings are greater than 50,000 ft², these buildings comprise 60% of the total commercial building space, and therefore roughly 60% of the total commercial energy use. Modeled impacts from this strategy are currently shown with a threshold of 10,000 ft² to reflect the ambition of Goleta's goal, but a higher threshold would come with lower administrative costs. It should be noted as well that this data reflects the significant number of large commercial buildings in Goleta. In comparison, only 4% of the commercial buildings in Santa Barbara City are greater than 50,000 ft².

Action Plan - Project

2020

1. Assemble an internal team with the Chief Building Official to review current and potential energy disclosure policies and best practices
2. Engage local realtor associations and large commercial property owners to gather feedback on implementation
3. Formulate draft disclosure and benchmarking policy based on best practices review
4. Circulate draft disclosure and benchmarking policy to relevant stakeholders for feedback.

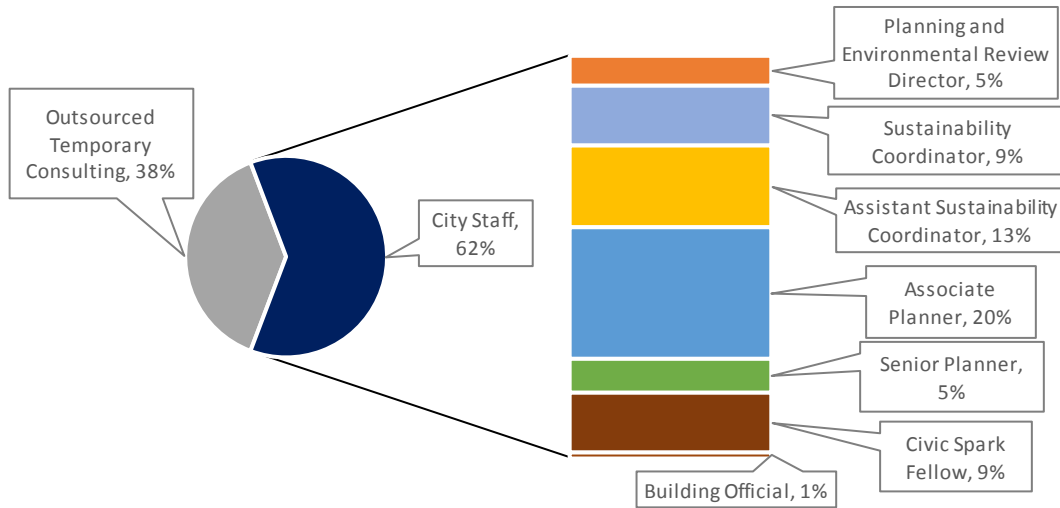
2021

5. Create ordinance template based on feedback.
6. Present template to relevant commissions and subcommittees.
7. Present ordinance to Council for approval.

Funding Requirements, Staffing Requirements, and Energy Impacts

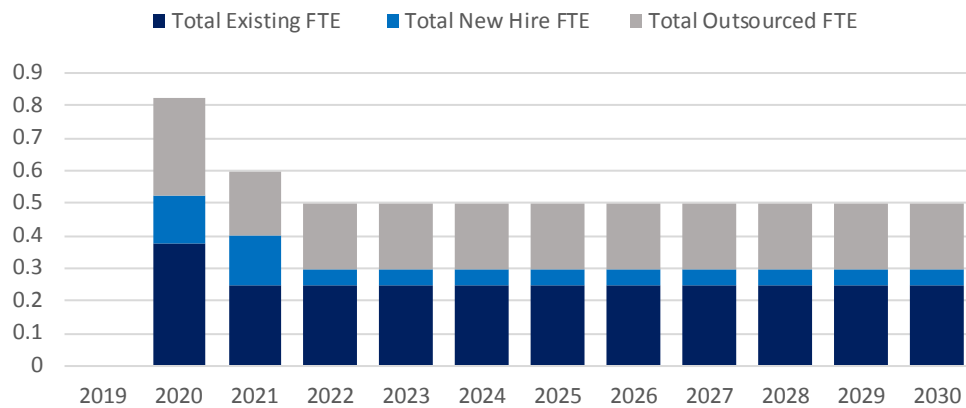
Strategy 6.1.2: Implement Energy Benchmarking Policy

Division of Total Responsibility for Implementation



Strategy 6.1.2: Implement Energy Benchmarking Policy

Implementation Staffing Resource Timeline



Total FTE Requirement

Year 1: 0.825 FTEs (~1650 hours)

Year 2: 0.6 FTEs (~1200 hours)

Continuing: 0.5 FTEs (~1000 hours)

FTE Position Breakdown

Year 1:

Sustainability Coordinator: 100 hours/year

Assistant Sustainability Coordinator: 300 hours/year

Civic Spark Fellow: 100 hours/year

	<i>Planning and Environmental Review Director: 50 hours/year</i> <i>Associate Planner: 300 hours/year</i> <i>Senior Planner: 100 hours/year</i> <i>Building Official: 100 hours/year</i> <i>Outsourced Consultant: 600 hours/year</i> Year 2 <i>Sustainability Coordinator: 100 hours/year</i> <i>Assistant Sustainability Coordinator: 300 hours/year</i> <i>Civic Spark Fellow: 100 hours/year</i> <i>Planning and Environmental Review Director: 50 hours/year</i> <i>Associate Planner: 200 hours/year</i> <i>Senior Planner: 50 hours/year</i> <i>Outsourced Consultant: 400 hours/year</i> Continuing: <i>Sustainability Coordinator: 100 hours/year</i> <i>Assistant Sustainability Coordinator: 100 hours/year</i> <i>Civic Spark Fellow: 100 hours/year</i> <i>Planning and Environmental Review Director: 50 hours/year</i> <i>Associate Planner: 200 hours/year</i> <i>Senior Planner: 50 hours/year</i> <i>Outsourced Consultant: 400 hours/year</i>
Estimated Annual Staffing Cost	Year 1: \$60,000 Year 2: \$40,000 Continuing: \$35,000
Estimated Annual Capital and Consulting Costs	Year 1: \$30,000 Continuing: \$20,000
2030 Annual Electricity Impact	5 GWh (~1,750 households)

Case Study

Several cities have instituted energy disclosure and benchmarking policies, including Berkeley, CA, and Boulder, CO. Berkeley's Building Energy Saving Ordinance (BESO) has required disclosure and reporting for buildings greater than 25,000 sq. ft. starting July 1st, 2019.⁵² However, there is no requirement to meet any specific energy efficiency retrofits or energy intensity targets. In comparison, Boulder's Building Performance Program initially requires only disclosure and reporting but will begin requiring lighting upgrades and retro-commissioning⁵³ from 2021 – 2023 and implementation of retro-commissioning from 2023 – 2027, with smaller buildings having more time to comply. Boulder's program does not specify exact energy intensity targets to hit, only that these actions be taken.⁵⁴

6.2 – Utility Program Area

6.2.1 – Evaluate the Benefits of a CCA and Consider Establishment

Strategy Description

Community Choice Aggregations (CCAs) provide local governments more authority and decision-making ability over local electricity rates and power content, particularly as it relates to renewable energy content and programs promoting renewable energy development. The methods through which a CCA can help the City meet its renewable energy goals include:

- Creating rates and programs such as a Performance-Based Incentive to boost the financial viability of renewable energy projects
- Developing programs for community solar and microgrid⁵⁵ projects that provide renewable electricity to the community while focusing on resiliency
- Procuring additional renewable power as a default offering for customers through a combination of out-of-county contracts, feed-in tariffs, and RECs. A CCA would not have to procure all its renewable electricity locally but could still do so through introducing new programs such as a feed-in tariff (FIT) rate. The ability to establish a FIT applying to local projects, instead of lobbying SCE, is a significant benefit of a CCA. A FIT would provide a standardized method to find an off-taker for small to medium wholesale projects, which would otherwise not be profitable with SCE due to the administrative requirements of responding to a traditional RFP process for renewables procurement.

The County, in partnership with the Cities of Goleta, Carpinteria, and Santa Barbara, commissioned a study in 2018 to analyze the rates that a CCA could offer in the northern and southern county, and how those would compare to PG&E's and SCE's current rates.⁵⁶ However, in 2018, the CPUC allowed IOUs to recalculate and increase the Power Charge Indifference Adjustment (PCIA) that they were charging CCAs for the loss in customers for previously-procured energy, which may reduce the viability of new CCAs. The County and Cities have already re-commissioned the study to account for the new PCIA rates, the results of which are expected by summer 2019. If the County and Cities choose not to proceed with a CCA at this

⁵² City of Berkeley, 'BESO Benchmarking Buildings', 2019 <https://www.cityofberkeley.info/benchmarking_buildings/> [accessed 10 April 2019].

⁵³ Retro-commissioning is the application to existing buildings of the commissioning process of ensuring that all installed systems are properly functional.

⁵⁴ City of Boulder, 'Boulder Building Performance', 2019 <<https://bouldercolorado.gov/sustainability/boulder-building-performance-home>> [accessed 10 April 2019].

⁵⁵ Microgrids are connected and clustered sets of distributed energy resources and loads that can connect to the grid or disconnect from it as necessary.

⁵⁶ Pacific Energy Advisors, *Technical Feasibility Study on Community Choice Aggregation: All Santa Barbara County Scenario*, 2017 <https://doi.org/10.1142/9781860949371_0008>.

time, Goleta should, given the benefits of a CCA and its importance to reaching a 100% renewable goal, continue to explore alternative pathways toward community choice energy. This could include future commission of an independent feasibility study to provided updated costs and benefits of a potential South County (or Goleta-only) CCA or exploration of joining established CCAs in SCE territory.

The County's study focused on a single set of rates for the entire county, whereas a study focused purely on Goleta or Cities in the southern Santa Barbara County could have different results. While the study focusing purely on the City of Santa Barbara showed less viable results than a county-wide CCA,⁵⁷ delayed rollout scenarios were not analyzed. In most cases, serving certain customer classes can be more profitable for an energy provider due to higher per unit margins embedded in utility rate designs by customer class. As such, a delayed rollout of a new CCA could allow a CCA to serve these classes first to build up greater margins and cash pool for hedging against possible losses from serving less profitable customer classes. The results of the feasibility study currently underway will provide further insight into which customer classes are most viable for near-term versus delayed rollout.

PCIA rates should decrease over time as there will be fewer long-term utility contracts that result in PCIA charges. A delayed rollout would spread out the PCIA over a longer period, reducing the negative impact on customer rates. Additionally, if the PCIA results in a short-term loss of revenue for the CCA, serving a smaller number of customers would reduce this loss. This can be taken full advantage of if a future CCA initially serves only municipal government accounts as part of Goleta's 100% renewable electricity goal.

Goleta could also choose to join an already existing CCA such as the Clean Power Alliance (CPA) in Los Angeles and Ventura Counties, the Monterey Bay Community Power (MBCP) in Monterey, San Benito and Santa Cruz Counties, as well as various cities in San Luis Obispo County or the California Choice Energy Authority led by the City of Lancaster. While this would help Goleta reach its 100% renewable energy goal through a higher rate of renewable procurement, it would not necessarily help Goleta meet its other resiliency goals, as Goleta's leverage within the group would be lessened by the number of other members. The Action Plan below provides guidance for additional scoping of the most viable CCA scenario after the results of the current feasibility study are available. This scoping will enable the City to determine the most realistic path forward. If County-wide CCA does proceed, the City should continue to offer support and staffing where necessary, but the staffing resources listed below, particularly the outsourced FTE cost, will be reduced.

Action Plan - Project	
2019	1. Review commissioned study on CCA viability and compare new rates to those in previously commissioned study 2. Conduct outreach to neighboring cities such as Santa Barbara and existing CCAs such as the Clean Power Alliance and Monterey Bay Community Power to determine viability of being a secondary CCA member.

⁵⁷ Pacific Energy Advisors, *Technical Feasibility Study on Community Choice Aggregation: City of Santa Barbara Scenario*, 2017 <https://doi.org/10.1142/9781860949371_0008>.

IF CCA MOVES FORWARD

3. Identify internal staff lead and outsourced consultant lead
4. Secure remaining formation and early operational budget
5. Create new City department
6. Create educational programs to increase knowledge about CCA benefits and increase buy-in
7. Establish contact with representatives of other CCAs to gather advice and assistance

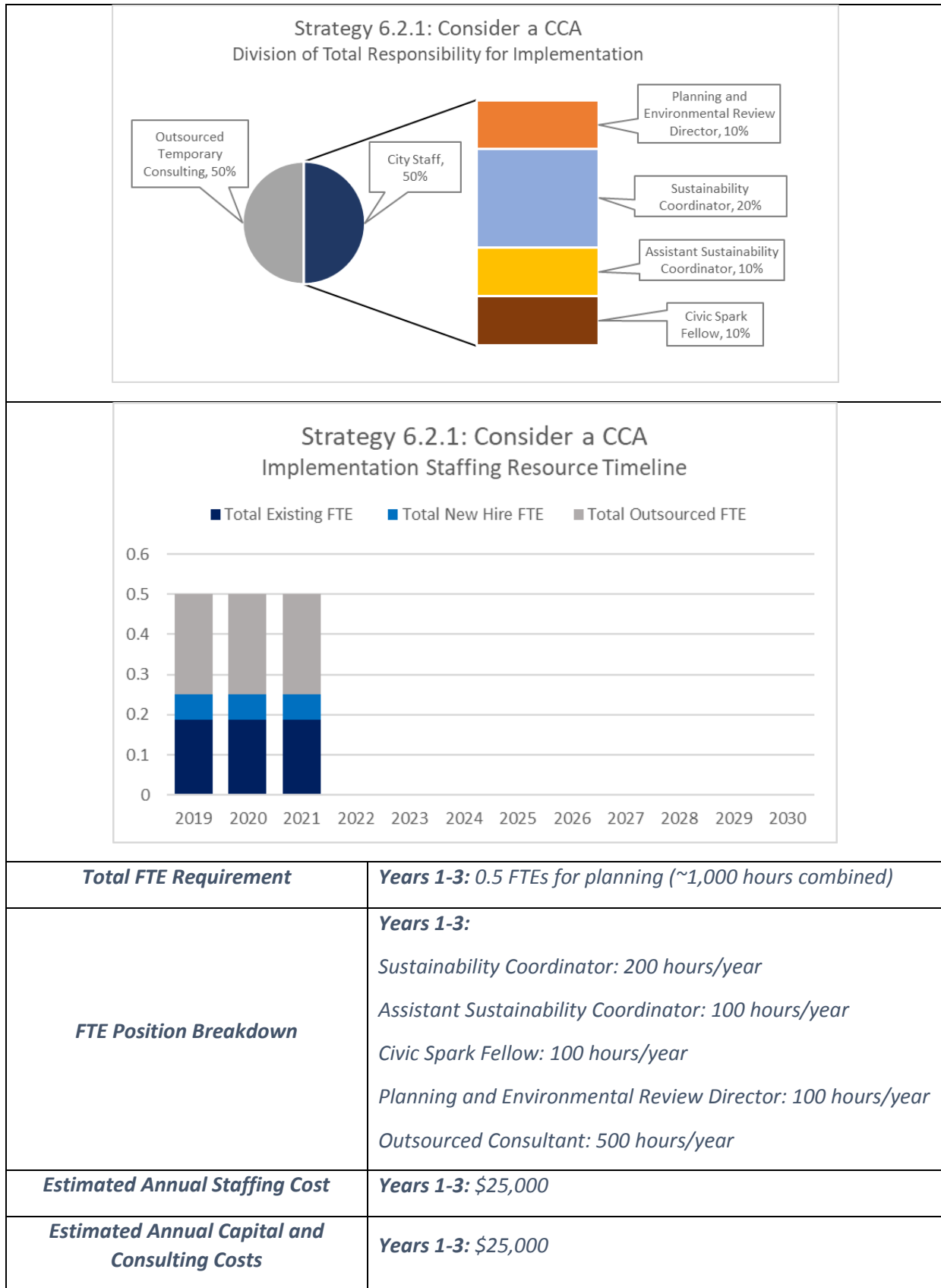
2020

8. Execute service agreements with IOUs
9. Conduct start-up activities such as hiring, securing office space, load forecasting, power procurement, rate-setting, branding, outreach, etc.
10. Provide customer notifications as required by statute
11. Release a Request for Indicative Pricing from independent power producers
12. Work with internal City stakeholders to create a CCA Board
13. Create and issue RFP for further rate and regulatory studies to implementation consultants and advisors

2021

14. Receive approval of CCA rate viability, Board structure, and implementation support contracts
15. Draft and submit implementation plan to CPUC
16. Release RFPs for power contracts
17. Sign power contracts
18. Launch CCA and begin serving community load

Funding Requirements, Staffing Requirements, and Energy Impacts



2030 Annual Electricity Impact	67 GWh (~24,000 households)
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Case Study: Apple Valley Choice Energy (AVCE)

Apple Valley Choice Energy (AVCE) is the best-case study for a Goleta-only CCA as it is the most comparable city-only CCA in population to Goleta, with a population of 71,000. Apple Valley funded start-up costs for AVCE by borrowing \$2.5 million from its General Fund, which began to be paid once AVCE became operational in 2017. Roughly 1.65 total FTEs were required during this start-up process, with 1.3 FTEs being budgeted annually for operation.

6.2.2 – Work with IOUs to Develop a Community Solar Project

Strategy Description

Community solar projects are solar projects sized similarly to large commercial installations, in the 1-3 MW range. These projects can be subscribed to by residents and businesses that cannot install solar PV on their own facilities due to either technical or ownership constraints or a lack of financial capability. They also provide other important benefits to the community by being locally sited, such as resiliency and jobs for the local solar industry. Local siting also reduces reliance on long distance transmission by adding a large project to the regional distribution grid.

A community solar project could be developed in partnership with IOUs or through a CCA. Although a CCA would provide more control, an IOU-controlled project could be developed earlier. SCE has a current pathway for community solar programs, but due to the high administrative burdens placed on the project developer, no community solar projects have proceeded to date. SCE is currently asking for funding from the CPUC to develop a set of alternative community solar programs to begin in 2020. Despite the lack of CPUC approval on SCE’s proposed green programs at the time of writing, due to the uncertainty of a CCA moving forward and the lack of historical precedent for community solar projects in SCE territory, the action plan below is geared towards participating in one of the proposed SCE programs.

The proposed SCE Community Renewables Program would also require an entity such as a City, or a group of entities, to act as “project anchors” to agree to purchase at least 80% of the system output, which greatly reduces the potential for this strategy to meet community goals. Therefore, a CCA would be the preferred implementation option for this strategy.

The proposed SCE program contains the following steps:

1. City partakes in SCE Request for Information (RFI) to assess community requirements such as resiliency and location and find a suitable site host
2. City identifies co-anchors if necessary
3. SCE issues RFP for development of project and selects a winner
4. City collaborates with developer to ensure smooth project installation and program launch

Action Plan - Project

2020

1. Assign a City staff member and team to lead project development and review status of SCE Community Renewables program
2. Conduct an analysis of large City-owned sites and approach other public agencies and large commercial property owners to potentially act as an anchor client and/or site owner for the solar project
3. Conduct outreach to residents and businesses neighboring the project to educate them about the need for solar development in that area
4. Offer assistance to SCE to help with outreach and enrolment in the project
5. Respond to SCE RFI with site details and proceed through process as directed by SCE

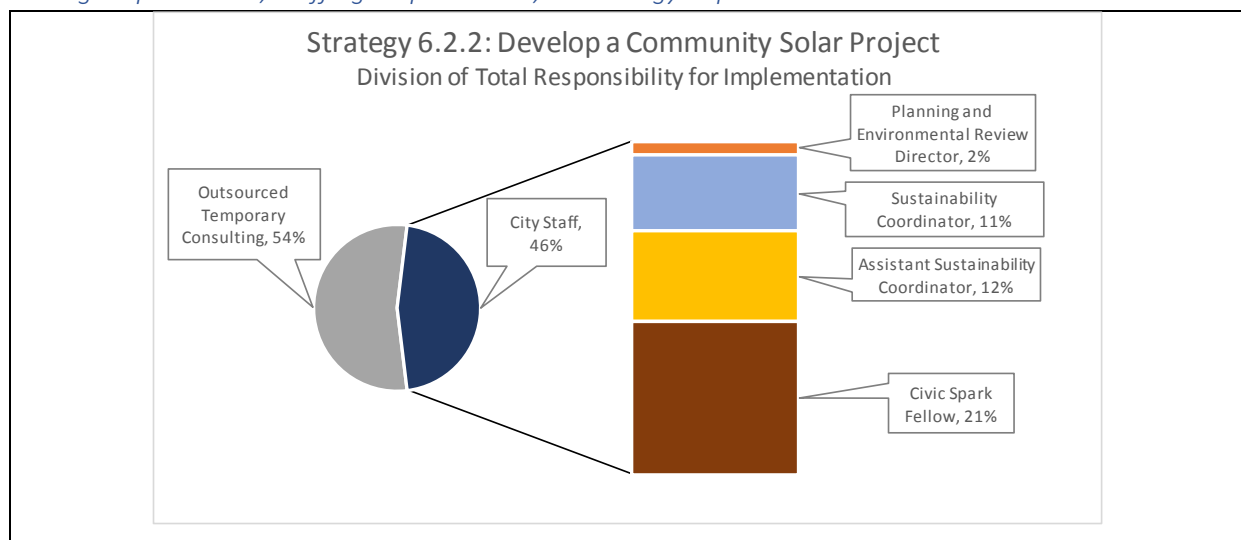
2021

6. Obtain approval for participation in SCE Community Renewables program from City Council
7. Return to Council as necessary for additional contract approvals
8. Begin and monitor project construction

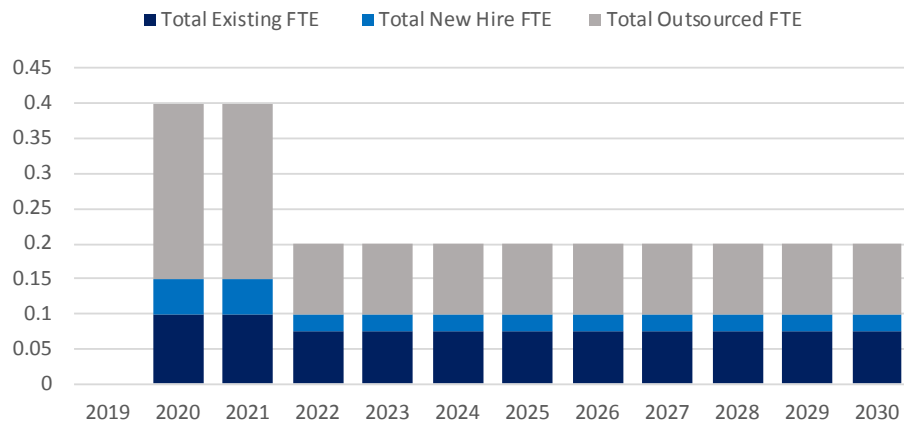
2022

9. Complete construction and interconnection of project and launch program

Funding Requirements, Staffing Requirements, and Energy Impacts



Strategy 6.2.2: Develop a Community Solar Project Implementation Staffing Resource Timeline



Total FTE Requirement	Years 1-2: 0.4 FTEs in planning (~800 hours combined) Continuing: 0.2 FTEs in enrolment and operation (~400 hours)
FTE Position Breakdown	Years 1-2: Sustainability Coordinator: 50 hours/year Assistant Sustainability Coordinator: 100 hours/year Civic Spark Fellow: 100 hours/year Planning and Environmental Review Director: 50 hours/year Outsourced Consultant: 500 hours/year Continuing: Sustainability Coordinator: 50 hours/year Assistant Sustainability Coordinator: 50 hours/year Civic Spark Fellow: 100 hours/year Outsourced Consultant: 200 hours/year
Estimated Annual Staffing Cost	Years 1-2: \$15,000 Continuing: \$10,000
Estimated Annual Capital and Consulting Costs	Years 1-2: \$25,000 Continuing: \$10,000
2030 Annual Electricity Impact	1.4 GWh (~500 households)

6.2.3 – Pilot Backup Inverter Program

Strategy Description

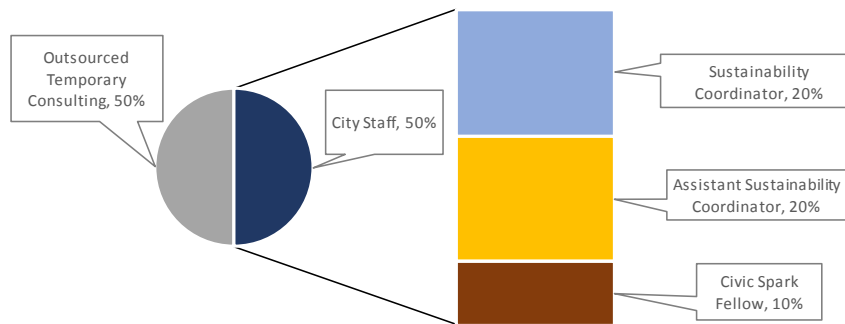
This program is a resilience focused strategy that aims to promote backup inverters to bridge the gap between the low up-front costs and high emissions of a backup generator and the high up-front costs and lack of emissions from battery storage. Backup inverters provide a small amount of power from solar panels while they are active, but as with solar panels without batteries, do not provide power during the night. There is currently only one commercially widespread backup inverter, the SMA Sunny Boy Secure Power Supply.⁵⁸ The City would need to avoid pushing a specific vendor or solution, but if the City releases an RFO for vendors to provide solutions, they may receive more applicants.

Action Plan - Project	
2019	1. Conduct research on possible solutions and vendors for backup power supplies. 2. Create draft RFO with request for solar + backup inverter standard offers, with specifications including amount of backup power and cost. 3. Circulate to vendors and internal stakeholders for feedback. 4. Revise draft RFO based on feedback and present to Council for approval.
2020	5. Release RFO for vendor bids. 6. Review bids and select shortlist of winners. 7. Create website advertising standard offers from selected bids.

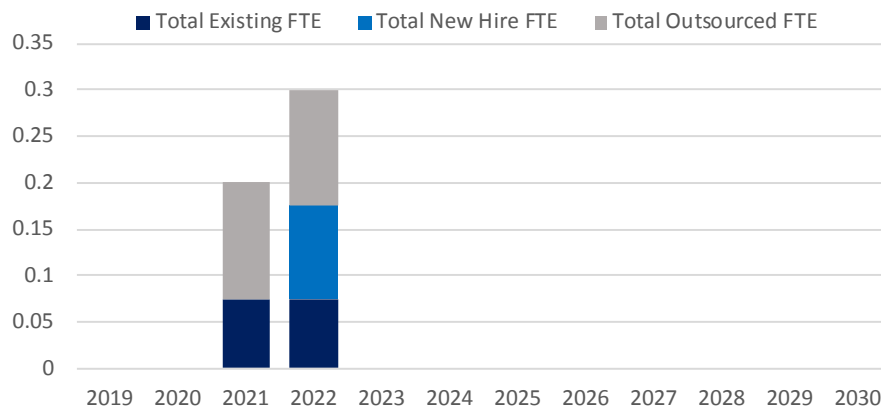
Funding Requirements, Staffing Requirements, and Energy Impacts

⁵⁸ LLC SMA America, *Secure Power Supply - Technical Description*, 2013 <<http://files.sma.de/dl/18726/EPUS-US-TB-en-11.pdf>> [accessed 12 April 2019].

Strategy 6.2.3: Pilot Backup Inverter Program
Division of Total Responsibility for Implementation



Strategy 6.2.3: Pilot Backup Inverter Program
Implementation Staffing Resource Timeline



Total FTE Requirement

Year 1: 0.2 FTEs (~400 hours combined)

Year 2: 0.3 FTEs (~600 hours combined)

FTE Position Breakdown

Year 1:

Sustainability Coordinator: 100 hours/year

Civic Spark Fellow: 50 hours/year

Outsourced Consultant: 250 hours/year

Year 2:

Sustainability Coordinator: 100 hours/year

Assistant Sustainability Coordinator (new): 200 hours/year

Civic Spark Fellow: 50 hours/year

	<i>Outsourced Consultant: 250 hours/year</i>
<i>Estimated Annual Staffing Cost</i>	<i>Year 1: \$10,000</i> <i>Year 2: \$15,000</i>
<i>Estimated Annual Capital and Consulting Costs</i>	<i>Years 1-2: \$12,500</i>
<i>2030 Annual Electricity Impact</i>	<i>1 GWh (~350 households)</i>

6.3 – Financial and Funding Program Area

6.3.1 – Create New Financing Mechanisms for the Community

Strategy Description

The goal of this strategy is to enable residents and businesses without the available cash to buy solar and solar + storage projects up-front. There are two potential pathways for the City to achieve this:

- 1) Work with private foundations to create a low-interest source of funding for residential and commercial PACE
- 2) Work with private foundations and a local water or sanitation utility to create a low-interest source of funding for a community solar OBF program

It is recommended that the City pursue only one of these two scenarios, to create one main financing method. A partnership with a private foundation or bank would allow the City to use a loan loss reserve, as the County did with the emPower program. By using its money only to insure its partner against bad loans, rather than providing loans directly, the City can effectively help write many more loans than it would be able to otherwise with its limited funding, as well as potentially provide a lower rate.

PACE programs are much more established than solar OBF programs, which have few case studies. Given that PACE already exists in the unincorporated Santa Barbara County and the Cities of Lompoc and Santa Barbara, a remodel of the PACE program would be easier than starting an OBF program from scratch. Additionally, an expansion of PACE would result in a single City-sponsored program for both solar and energy efficiency financing. In comparison, a solar OBF program would likely need to begin as a pilot and would require coordination with a public agency such as the Goleta Water or Sanitary Districts, since the City does not administer its own utility bill. However, OBF programs allow residents and businesses to pay for projects with smaller monthly payments, rather than a larger annual payment, a financing arrangement which appeals to many.

Action Plan - Project	
2020	1. Assign OBF staff lead

2. Contact managers of existing OBF programs to gather advice and best practices
3. Explore OBF programs not operated by IOUs, focusing on regulatory and legal requirements for running OBF on non-electricity bills such as waste and water
4. Work with Finance Department to investigate ability to replicate loan loss reserve used in County emPower program
5. Conduct outreach to available funding partners
6. Decide upon a funding partner and program structure regarding whether to use traditional or non-profit capital
7. Conduct outreach to residents and businesses neighboring the project to educate them about the need for solar development in that area
8. Establish most important program components for the county's needs, such as technology eligibility (e.g. solar PV, solar thermal, etc.) and amount of focus on low-income customer segments

2021

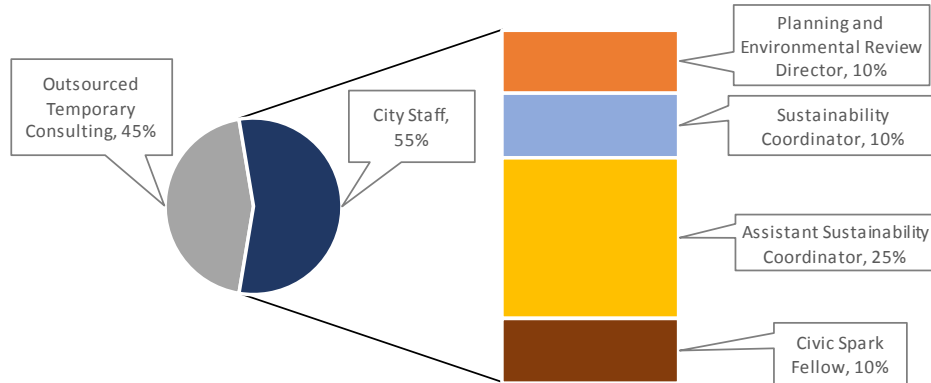
9. Conduct community outreach to gather feedback on program design and iterate upon it
10. Work with 3rd party funding partner and program manager to design parameters of a pilot
11. Work with either Water or Sanitary districts to establish process for including charges on water or waste bill
12. Launch pilot program

2022

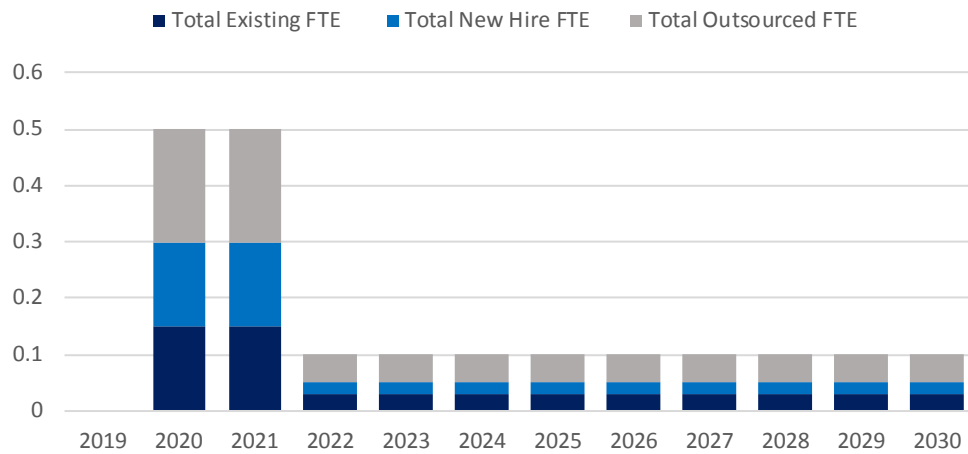
13. Adjust program based on pilot results
14. Launch full program

Funding Requirements, Staffing Requirements, and Energy Impacts

Strategy 6.3.1: Offer New Financing Mechanisms Division of Total Responsibility for Implementation



Strategy 6.3.1: Offer New Financing Mechanisms Implementation Staffing Resource Timeline



Total FTE Requirement

Years 1-2: 0.5 FTEs in planning (~1000 hours combined)

Continuing: 0.1 FTEs in operation and enrolment (~200 hours)

FTE Position Breakdown

Years 1-2:

Sustainability Coordinator: 100 hours/year

Assistant Sustainability Coordinator: 300 hours/year

Civic Spark Fellow: 100 hours/year

Planning and Environmental Review Director: 100 hours/year

Outsourced Consultant: 400 hours/year

Continuing:

	<i>Sustainability Coordinator: 20 hours/year</i> <i>Assistant Sustainability Coordinator: 40 hours/year</i> <i>Civic Spark Fellow: 20 hours/year</i> <i>Planning and Environmental Review Director: 20 hours/year</i> <i>Outsourced Consultant: 100 hours/year</i>
Estimated Annual Staffing Cost	Years 1-2: \$30,000 Continuing: \$5,000
Estimated Annual Capital and Consulting Costs	Years 1-2: \$20,000 Continuing: \$5,000
2030 Annual Electricity Impact	3.1 GWh (~1,100 households)

Case Study: Lafayette Low-Interest On-Bill Financing Pilot

Lafayette, Colorado, is currently running a 6-year pilot project where residents can apply for 1.5% fixed APR loans for energy efficiency improvements through Boulder County’s Energy Smart Program. Participants can pay loans over a 1, 3, or 5-year period through their municipal water utility bill, depending on the loan amount.⁵⁹ The program was kickstarted by a \$30,000 contribution towards Lafayette’s Energy Efficiency and Renewable Energy Revolving Loan Fund from Energy Outreach Colorado.

6.3.2 – Introduce Financial Incentives to Increase Economic Payback

Strategy Description

Performance-Based Incentives (PBIs) can directly fill the loss in economic value for solar PV installation from ToU rate changes or otherwise support marginal projects to move past the tipping point of financial viability. Rather than an up-front rebate or credit, PBIs provide money only per kWh generated, which prevents paying incentives to systems that underproduce or stop working entirely and promotes maintenance. There are also several creative methods in which a PBI can be altered to meet other goals:

- Provide a higher PBI for projects with battery storage
- Vary the PBI with time of generation
- Provide a higher PBI for storage projects that can be used by the community for emergency services during extended outages

Due to capital cost requirements, PBIs are recommended as a later-stage strategy. This would provide the City with more time to gather a funding source and would allow the PBI to be adjusted based on progress towards meeting city-wide solar targets. Additionally, a PBI is more easily offered through a CCA because revenue from electricity sales provides capital to be reinvested in the community. Recommending a PBI as a later-stage strategy allows uncertainty around the City’s CCA pathway to abate and keeps this easier

⁵⁹ City of Lafayette, *Low Cost Opportunity for Home Energy Improvements* (Lafayette, 2018)
https://cityoflafayette.com/DocumentCenter/View/22643/On-Bill-Flyer_100118 [accessed 10 April 2019].

implementation option open. Modeled impacts currently assume a 1 c/kWh PBI for projects without battery storage, and a 2 c/kWh PBI for projects with battery storage.

One interesting additional incentive structure that could be considered by the City is to provide an upfront incentive for customers that are adding a storage system to an existing solar system. This would enable those customers to begin capturing the additional economic benefits associated with storage under the new time-of-use rates and promote resilience. This program may have significant uptake because the target customers have already shown interest in investing in DERs, however, additional outreach and scoping would be needed to determine whether the potential pool of participants is enough to support an investment of City resources.

Action Plan - Project

2024

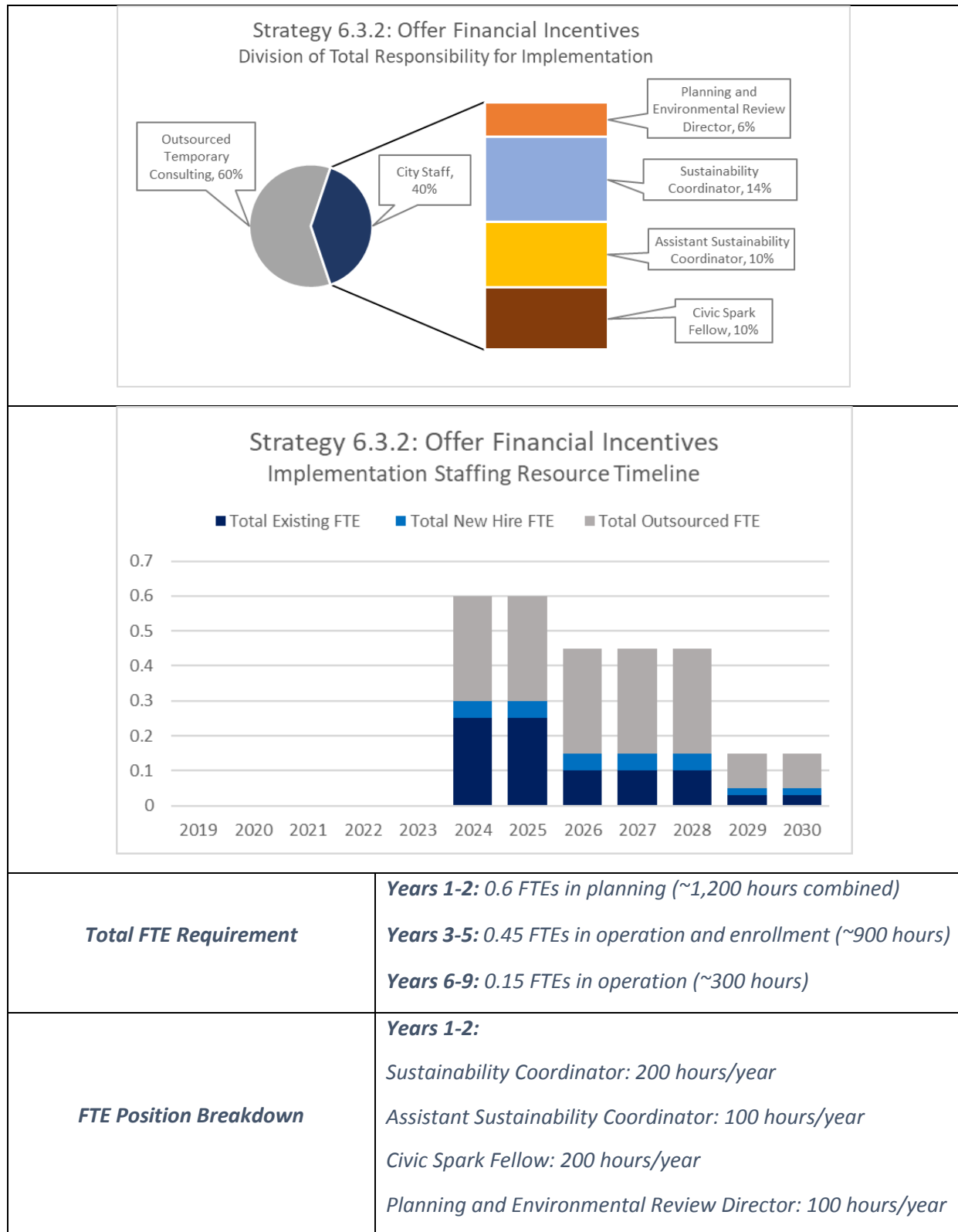
1. Create a program development team to lead the strategy
2. Identify most important customer segments (e.g. single-family residential, commercial, multi-family residential, etc.) and property types to target with the incentive
3. Establish DER target for the incentive program
4. Conduct outreach to local solar installers and other DER vendors to gather their opinions on important program requirements

2025

5. Create program guidelines, including project eligibility, length of program, length of incentive, type of incentive, reporting requirements, and amount of incentive to be offered
6. Assess potential risks and legal protections for the City
7. Determine estimated capital needs
8. Identify gaps in City expertise for implementation and program design
9. Finalize program design based on consultant advice
10. Present draft guidelines to vendor community for feedback
11. Obtain City Council approval for required funding

2026

12. Publish guidelines and conduct outreach campaign to advertise PBI to residents and businesses
13. Launch program city-wide



	<i>Outsourced Consultant: 600 hours/year</i> Years 3-5: <i>Sustainability Coordinator: 100 hours/year</i> <i>Assistant Sustainability Coordinator: 100 hours/year</i> <i>Civic Spark Fellow: 50 hours/year</i> <i>Planning and Environmental Review Director: 50 hours/year</i> <i>Outsourced Consultant: 600 hours/year</i> Years 6-9: <i>Sustainability Coordinator: 40 hours/year</i> <i>Assistant Sustainability Coordinator: 40 hours/year</i> <i>Civic Spark Fellow: 20 hours/year</i> <i>Outsourced Consultant: 200 hours/year</i>
Estimated Annual Staffing Cost	Years 1-2: \$30,000 Years 3-5: \$15,000 Years 6-9: \$5,000
Estimated Annual Capital and Consulting Costs	Years 1-2: \$30,000 Years 3-5: \$160,000 - \$415,000 Years 6-9: \$140,000 - \$395,000
2030 Annual Electricity Impact	23 GWh (~8,100 households)

Case Study: Connecticut Green Bank PBIs

The Connecticut Green Bank was formed by the Connecticut legislature in 2011. It uses a relatively low amount of public investment to achieve a multiplier effect by supporting private lenders rather than directly subsidizing clean energy. For every \$1 of public funding, \$6 of additional private funding occurs due to the CT Green Bank.

Through its Residential Solar Investment Program (RSIP), CT Green Bank offers both an ongoing Performance-Based Incentive and an up-front Expected Performance-Based Buydown (EPBB), depending on whether the homeowner is purchasing the system directly or paying for it through a PPA. The CT Green Bank also offers C-PACE for commercial customers and energy efficiency financing options to spread out overhead costs over a larger number of programs.⁶⁰

⁶⁰ Connecticut Green Bank, 'Green Energy Solutions in Connecticut', 2017 <<https://www.ctgreenbank.com/programs/all-programs/>> [accessed 10 April 2019].

6.3.3 – Diversify City Funding Streams

Strategy Description

Diversifying funding streams is extremely important to ensuring the City has a stable funding stream that is not dependent on any one source. These are methods for the City to diversify its funding stream:

- 1) Aggressively pursue new federal, state, and private foundation funding sources
- 2) Continue to work closely with the CPUC and SCE to maximize the City's share of existing renewable program funding
- 3) Partner with other nearby regional governments to create energy programs

Continuing to work with the CPUC and the IOUs in Santa Barbara County would allow the City both to maximize its intake from a utility funding stream that may decrease and to receive CPUC funding that would otherwise go to utilities to administer local programs.

One method the City could use to directly receive this funding is to increase its involvement in the County's new partnership with the Counties of San Luis Obispo and Ventura as part of the Tri-County Renewable Energy Network (3C-REN). The 3C-REN is currently planning on providing residential and multi-family energy efficiency programs, codes and standards compliance programs, and workforce education and training programs.⁶¹ This scope could be expanded to include a community solar program. SCE recently applied for \$5 million from the CPUC to manage these and other programs such as green tariffs. If approved, it may set a precedent for the County to ask for similar funding on behalf of the City, given that the City has a more direct relationship with residents and businesses.

Additionally, the City of Goleta could use a portion of the new funds from the marijuana business tax passed in November 2018, Measure Z. Measure Z implemented taxes between 1% – 5% on marijuana distributors/nurseries, manufacturers, cultivators, and retailers, and is expected to bring in somewhere between \$300,000 to \$1,400,000 in the first year.⁶² The City is also expected to save a large amount of money in utility bills from its upcoming acquisition, upgrade, and rate switching of the majority of the Goleta streetlighting system. Once this project is paid off, the future savings could be allocated to energy projects and policies.

Action Plan - Project

2019

1. Request a portion of the expected Measure Z revenue in the upcoming budget.
2. Request that excess savings from current and future energy projects go towards the creation of a fund for future energy and climate initiatives.

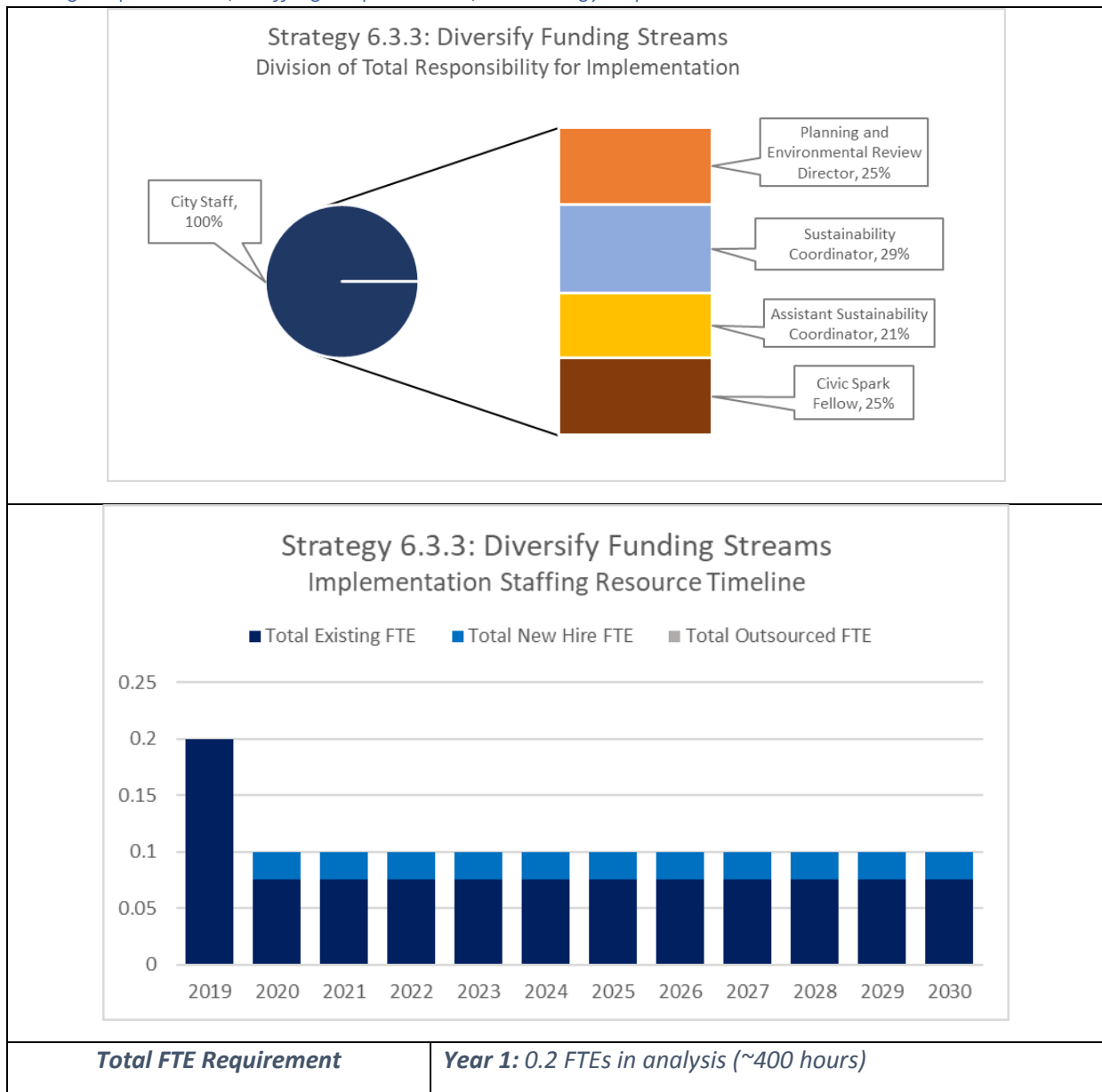
⁶¹ County of Ventura, 'Tri-County Regional Energy Network', 2019 <<https://www.ventura.org/environment/tricountyren/>> [accessed 10 April 2019].

⁶² County of Santa Barbara, *Cannabis Business Tax*, 2018 <[https://countyofsb.org/uploadedFiles/CARE/Elections/Upcoming_Elections/2018_November_6/Z2018 – City of Goleta Cannabis Business Tax.pdf](https://countyofsb.org/uploadedFiles/CARE/Elections/Upcoming_Elections/2018_November_6/Z2018-City%20of%20Goleta%20Cannabis%20Business%20Tax.pdf)> [accessed 10 April 2019].

Ongoing

3. Monitor federal, state, IOU, and private foundation grants and funding programs for applicability to the County
4. Monitor approval progress of IOU requests for funding, particularly the Community Renewables Program
5. Identify best opportunities for the County to request funds from CPUC on behalf of the City to replicate IOU role through 3C-REN

Funding Requirements, Staffing Requirements, and Energy Impacts



	Continuing: 0.1 FTEs in ongoing monitoring (~200 hours)
FTE Position Breakdown	Year 1: Sustainability Coordinator: 200 hours/year Civic Spark Fellow: 100 hours/year Planning and Environmental Review Director: 100 hours/year Continuing: Sustainability Coordinator: 50 hours/year Assistant Sustainability Coordinator: 50 hours/year Civic Spark Fellow: 50 hours/year Planning and Environmental Review Director: 50 hours/year
Estimated Annual Staffing Cost	Year 1: \$25,000 Continuing: \$10,000
Estimated Annual Capital and Consulting Costs	\$0

6.4 – City Facility Program Area

6.4.1 – Create a Formal Energy Assurance Plan (EAP)

Strategy Description

Energy assurance planning is an important step in improving the robustness, security, and reliability of energy infrastructure by creating plans to protect key sites so that they continue to operate in the event of any disaster or electricity outage. This will increase the reliability of critical services and community hubs such as the Goleta Emergency Operations Center or the Community Center. EAPs are therefore a key step in building a resilient local electricity grid. These are the key steps to developing a strong EAP:

- 1) Identify the City-owned buildings, facilities, and infrastructure that are most critical from a resiliency perspective, such as sites used as emergency operation centers or community gathering spots, as well as street and stop lights
- 2) Evaluate each critical site, including its current level of emergency preparation from an energy perspective and the renewable energy potential present
- 3) Evaluate opportunities to supplement diesel generators with battery storage
- 4) Evaluate impact of critical sites on other key resilience requirements such as transportation, to the extent it is applicable within the City

Action Plan - Project

2019

1. Assemble internal energy assurance team with representation from the Fire Department and the Emergency Services Office
2. Create mission and vision statements for the Energy Assurance Plan
3. Conduct external outreach to Cities with existing EAPs to gather advice and guidance
4. Research IOU, state, and federal funding opportunities available for energy assurance support
5. Work with Advance Planning Division to identify existing City plans that could incorporate the EAP
6. Identify key issues and critical facilities and sites to be covered in an EAP

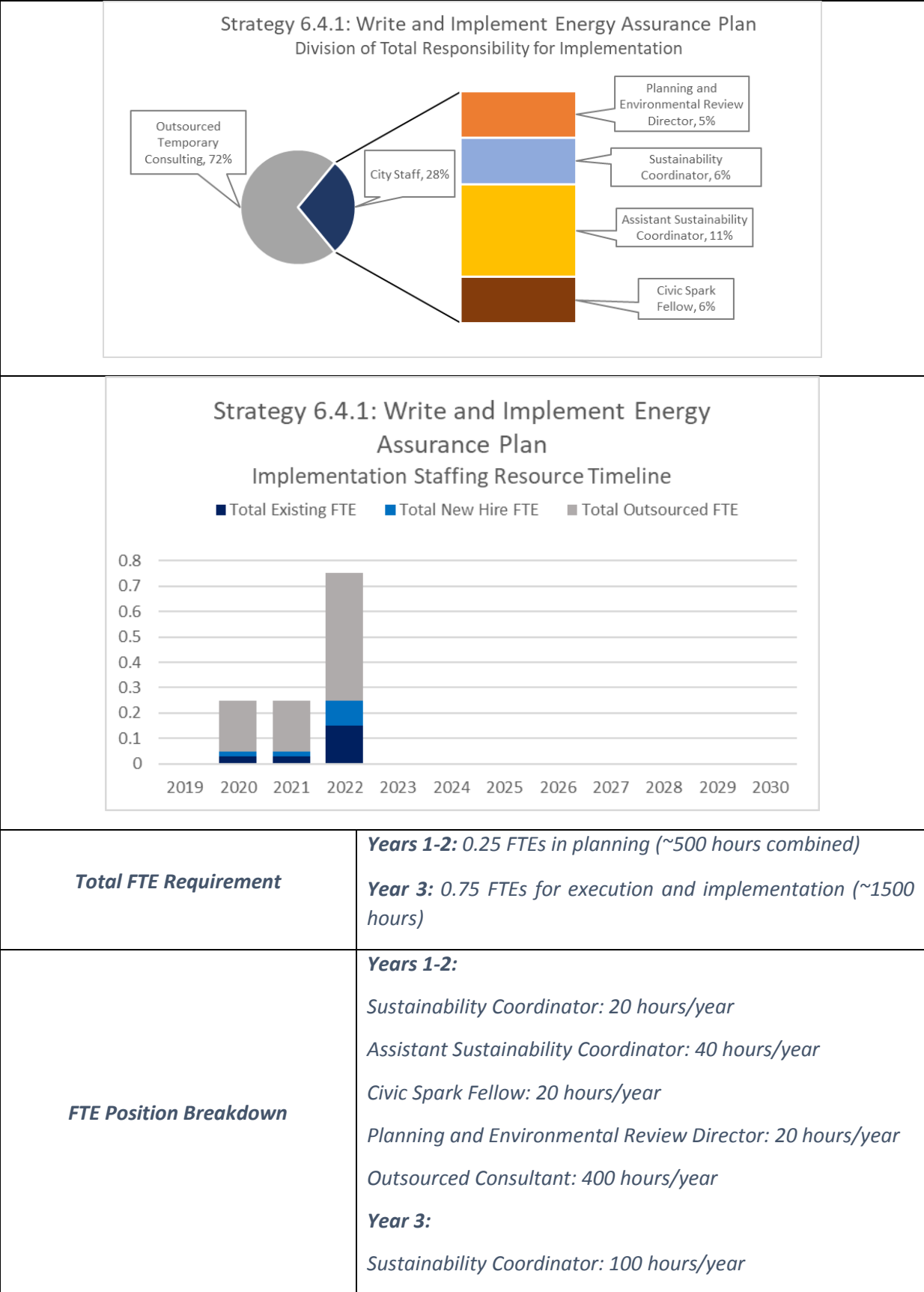
2020

7. Conduct outreach to external community stakeholders for feedback on resiliency issues and challenges faced by the community
8. Create and release RFP to write the EAP
9. Review proposals and negotiate contract with winning bid
10. Obtain City Council approval for contract
11. Work with consulting team to write draft EAP, focusing on opportunities for renewable energy and battery storage at identified sites
12. Circulate draft EAP for comments and feedback from internal and external stakeholders, and iterate upon it

2021

13. Implement EAP recommendations

Funding Requirements, Staffing Requirements, and Energy Impacts



	<i>Assistant Sustainability Coordinator: 200 hours/year</i> <i>Civic Spark Fellow: 100 hours/year</i> <i>Planning and Environmental Review Director: 100 hours/year</i> <i>Outsourced Consultant: 1000 hours/year</i>
Estimated Annual Staffing Cost	Years 1-2: \$6,000 Year 3: \$25,000
Estimated Annual Capital and Consulting Costs	Years 1-2: \$40,000 Year 3: ~\$ 1,200,000 to implement renewable energy recommendations. This cost assumes the use of PPAs, as available. The estimated capital is reserved to maintain flexibility for the City by enabling cash purchase of equipment if a desirable PPA is not available, enabling City to buydown cost of a PPA with upfront investment or enabling the City to buy-out PPAs and own the systems outright (would have payback and resilience benefits)
2030 Annual Electricity Impact	1.3 GWh (~460 households)

6.5 – Outreach and Advocacy Program Area

6.5.1 – Support a County-wide One-Stop Shop to Lead Education Efforts in the City

Strategy Description

Establishing a One-Stop Shop creates a flexible mechanism for community outreach and engagement around energy issues in a range of ways. A One-Stop Shop would act as the main hub and point of contact for information for all new programs and policies implemented due to SEP recommendations. The One-Stop-Shop would also act as the main method for the City to promote the benefits of certain programs such as a CCA and advertise programs requiring community enrollment or participation, such as a Community Solar program or a Performance-Based Incentive program.

The One-Stop Shop can also increase knowledge about clean energy technologies and the industry as a whole, such as opportunities to participate in regional or state energy programs, alerting local residents and businesses to the falling costs of solar and energy efficiency projects and the role that local utility-scale generation and distributed backup storage can play in increasing resiliency, and therefore reliability, of the electricity supply.

Additionally, representatives from a One-Stop Shop can act as trusted representatives to facilitate energy projects in the following ways:

- Provide energy advice and comparisons between wholesale electricity projects and projects for on-site consumption
- Support the use of “green leases” for commercial properties that allow building owners to charge higher rates to tenants in exchange for undertaking energy projects

A One-Stop Shop could serve as a method through which to target specific stakeholders, as well as continue the outreach that has already begun through the workshops conducted as part of the SEP process. Essential stakeholders include Goleta's largest commercial property owners, realtors, and investors, local environmental groups, and non-profits. In public workshops, these key stakeholders expressed interest in participating in quarterly learning sessions with renewable energy developers, with facilitation by the City.

Continued general outreach to the residential community to maintain grassroots enthusiasm and participation in meeting Goleta's goals is important, as well, and can be conducted through social media marketing and engagement campaigns conducted with schools to reach local youths. Messaging to the general residential community should focus on simple actions residents can take, likely in the energy efficiency realm, to align their energy usage habits with the City's goal. With additional funding, the One-Stop Shop could also host targeted behavior change programs that create competitions between community units (such as schools or neighborhoods) that incentivize reductions in electricity usage.

Due to Goleta's small size and limited funding, providing support to a County-wide resource center would allow Goleta to receive the benefits with less investment in staffing and other resources.

Action Plan - Project

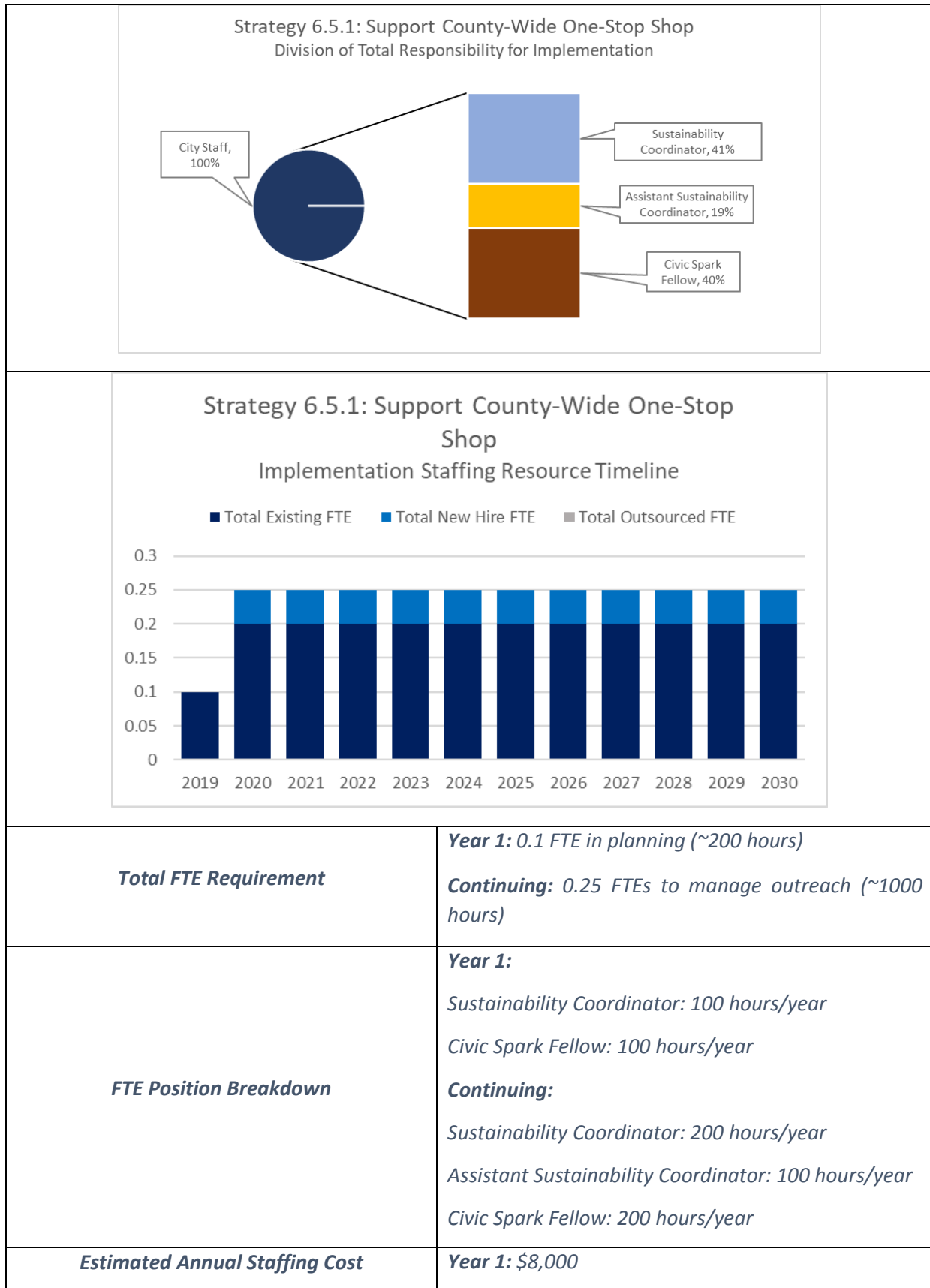
2019

1. Use SEP process to execute initial outreach and promotional campaign through a series of workshops targeted at different customer segments such as commercial property owners, agricultural land owners, special districts and other public agencies, and opportunity zone investors
2. Continue building relationships with partners across the city to extend reach of One-Stop Shop
3. Assemble internal team and hire staff if necessary to administer and lead promotional and educational programs
4. Compile list of clean energy resources to be included in online resource pages

2020

5. Create and release RFP for web design to create One-Stop Shop
6. Publish online resource page

Funding Requirements, Staffing Requirements, and Energy Impacts



	<i>Continuing: \$20,000</i>
<i>Estimated Annual Capital and Consulting Costs</i>	<i>\$0</i>
<i>2030 Annual Electricity Impact</i>	<i>0.2 GWh (~70 households)</i>

6.5.2 – Advocate for City Goals at the State and Federal Level

Strategy Description

As a relatively small city, Goleta has limited ability to advocate on its own. However, by adding its voice to others such as the County, the City can work to amplify existing advocacy. Some advocacy goals are listed below:

- 1) Support existing efforts at the state level to protect state oversight of streamlined DER interconnection processes, establish a statewide mandate for utilities to remove barriers preventing DERs from participating in the wholesale electricity market and explore the creation of tariffs that value the services DERs can provide
- 2) Work with the State of California to develop a “Public Power Pool” to aggregate utility-scale renewable procurement by public entities

The first objective involves exploring ways to support legislative efforts led by existing groups such as the Solar Rights Alliance to strengthen residents’ and businesses’ right to leverage their solar resource and store electricity they generate. Recent efforts, such as AB 288, to do this have been met with significant opposition from utilities. Preserving and expanding these rights at the state level will enable Goleta residents to effectively support the City in meeting its energy goals.

The second objective involves advocacy for the creation of an aggregated power pool of off-site but in-state renewable projects that can take advantage of the ITC prior to it reducing and that can be bundled together to receive better PPA rates for governments, public agencies and non-taxpaying special districts. Although it is likely too late to implement a Public Power Pool in time for the 30% credit, immediate action could allow implementation prior to the credit reducing to 10%. The recently launched Texas Public Power Pool⁶³ provides an example of this concept in action and is enabling smaller public entities to leverage their shared buying power to capture the economic benefits of renewables.

The Regional Climate Collaborative being explored by the County of Santa Barbara may create one avenue for these advocacy goals to be effectively communicated to decision makers at the state level.

6.6 – Funding and Staffing Summary

For scheduling purposes, it is important to analyze the cumulative requirements across all recommended program areas and strategies. The graph on the following page summarizes total year-by-year staffing requirements.

⁶³ PR Newswire. “Texas Power Pool gathering public entities for renewable electricity aggregation”, January 7, 2019. <https://www.prnewswire.com/news-releases/texas-power-pool-gathering-public-entities-for-renewable-electricity-aggregation-300773960.html> [Accessed 20 June 2019]

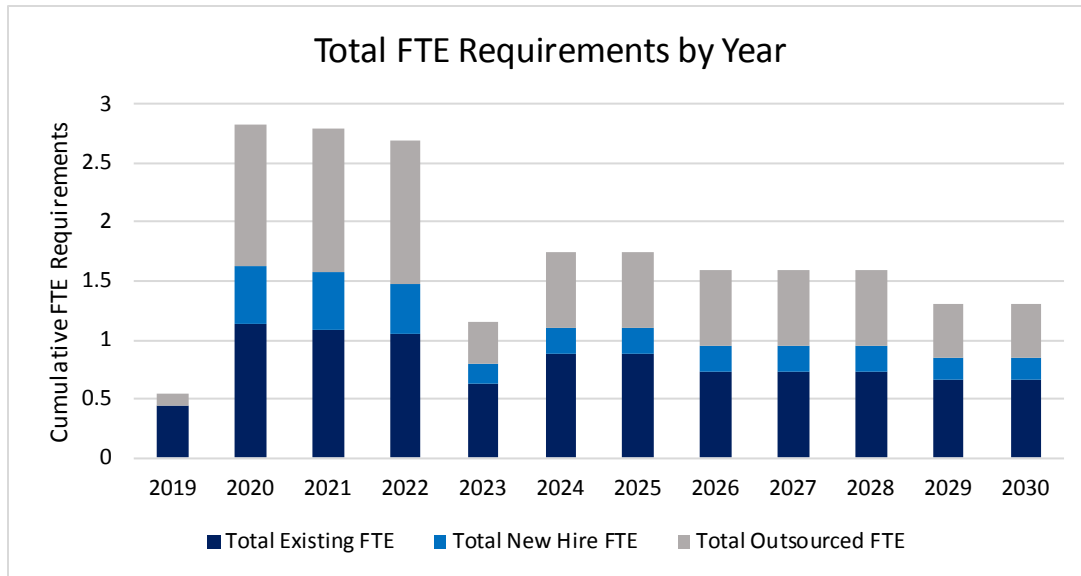


Figure 6.1: Total SEP Staffing Requirements

Strong staffing commitment will be required over the first several years, peaking in the first several years due to the need for strong and immediate action. Relatively less staff time is used in 2019 since SEP implementation will likely not start until the second half of 2019. Additionally, some time is dedicated towards a new Assistant Sustainability Coordinator hire in the Sustainability Division to support initiatives across divisions, including work in the Planning Department, as well as other non-SEP related sustainability issues. Many of the strategies included in the SEP require strong internal collaboration between different departments to implement, particularly in the regulatory program area.

6.7 – Strategies to Raise Revenue

Given the strong levels of staffing and funding required to implement the actions recommended in the SEP, additional sources of revenue may be needed to supplement funding dedicated by the City Council.

There are two broad categories of funding options: taxes and fees. Taxes require a vote to be conducted, but due to this high barrier for implementation, allow wide flexibility in terms of how the gathered revenue can be allocated and the link between the source of the tax and the programs and projects it funds. In comparison, fees can be established by the City Council without a vote, but in exchange for easier implementation, there must be a much stronger link between the source of the fee and its use. As such, due to the broad range of programs recommended as part of the SEP, a single revenue stream would likely need to be a tax rather than a fee.

6.7.1 – Utility Tax

A utility tax can be placed on a utility bill, whether water, waste, natural gas, or electricity. Since the City does not have its own bill, it would need to partner with a public agency or a utility to collect the revenues, or with a potential CCA if formed. The tax could be on a consumption basis—per kWh of electricity consumed or per therm of natural gas, for example, or on the whole utility bill, which is also known as a Utility Users Tax.

Although very similar, the key difference between these two taxes is that the entire utility bill often includes non-consumption charges, such as minimum monthly charges on electricity bills. Therefore, taxing directly on consumption gives customers the ability to respond strongly to the tax by adjusting their usage or undertaking projects such as installing solar panels. Although this may make the tax easier to pass, it may also result in decreasing revenues, particularly if the tax is on electricity consumption, since SEP strategies will lower electricity use through the proliferation of DERs. In comparison, a Utility Users Tax would still give customers some ability to respond, while maintaining a base level of revenue.

Goleta does not currently have any level of Utility Users Tax, but Santa Barbara City places a tax of 6% on all of water, electricity, waste, and natural gas, through which it raises roughly \$14M annually. With a similar rate, Goleta could raise approximately \$5M annually with a tax on all four sectors, or approximately \$2.5M on only the electricity bill.

A consumption-based electricity tax has existed in Boulder, Colorado since 2007, called the CAP tax. As opposed to being an equal percentage of all bills, the CAP tax is set at a different rate for each customer segment, with residential customers paying \$0.0049/kWh, commercial customers paying \$0.0009/kWh, and industrial customers paying \$0.0003/kWh. These numbers equate to roughly 1% of electricity costs, or \$450,000 - \$500,000 annually in Goleta. These rates could be raised to match the amounts raised by a Utility Users Tax.

6.7.2 – Sales Tax Increase

A sales tax increase could be implemented in two different ways:

- A tax on gross retail sales of large corporations
- A special or general Sales and Use Tax increase

The former would target specifically corporations over a certain size. In Portland, Oregon, a 1% tax was passed in 2018 on corporations having over \$500,000 of annual sales within City limits and \$1 billion in total annual sales. This tax, called the Portland Clean Energy Initiative, is expected to raise \$30 million annually to fund renewable energy programs and policies. If deemed a good fit, City staff should review business activity in Goleta to determine the appropriate local threshold, as well as if any exemptions could be necessary.

One of the main objectives of this type of tax is to focus on equity by redistributing revenues from large corporations. Portland mandates that a certain portion of the funds be spent in developing energy programs for disadvantaged communities most affected by climate change.

In comparison, a use tax would be placed on all purchases made within Goleta and would place a comparatively larger burden on lower-income communities. Sales tax increases are common among municipalities as a method to invest in key community needs such as infrastructure and public health and safety. The resilience and reliability benefits of SEP strategies could fall under a similar category and reason to implement a use tax increase.

Appendix A: Detailed Statistical Solar Analysis Description

A ground-up statistical analysis of rooftop and parking lot solar potential was conducted. A total of 753 such representative rooftops and 241 representative carport locations were measured, and the resulting solar potential scaled to the full city.

To conduct this analysis, the city was divided into 4 regions based on geography, zoning types, and building stock. These zones were defined using the City zoning maps and aerial imaging to visibly confirm boundaries of building type and density. The four zones included 2 residential zones and 2 commercial zones. The two commercial zones and the two residential zones differ from each other in their building density, parking lot density, and roof structure.

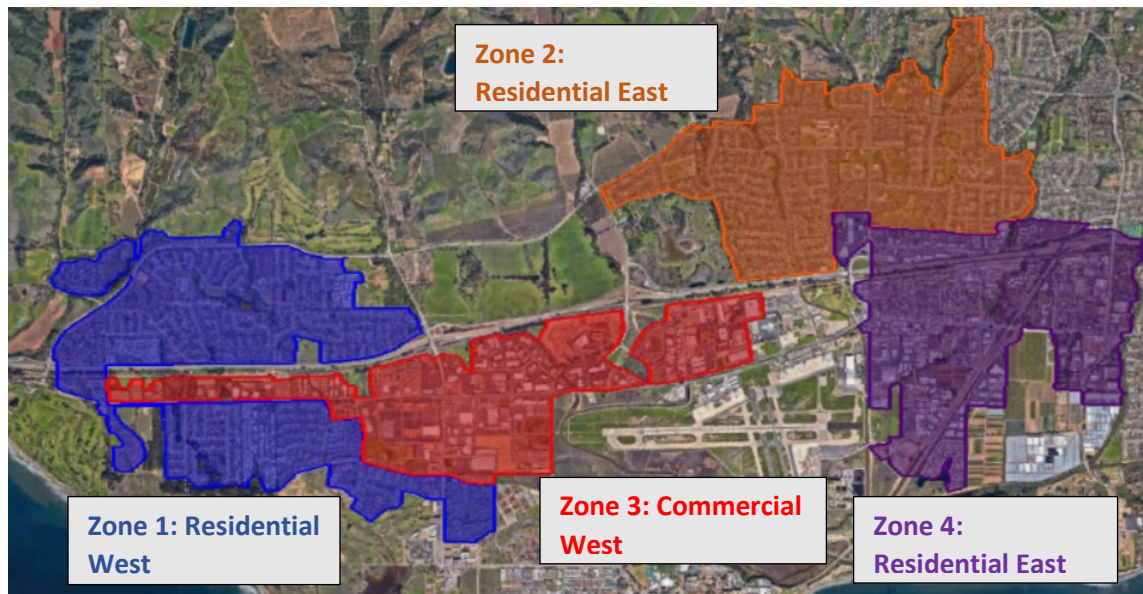


Figure AA.1: Statistical Solar Zones in the City of Goleta

Importantly, the boundaries of these sample zones did not exactly follow the City limits, to exclude areas containing large spaces unusable for solar PV installations. Since this methodology scaled PV potential based on the physical size of the zones, including these areas would have overestimated solar potential. For example, the area of Bishop Ranch is excluded, since it represents a significant size of land that is set to remain undeveloped. However, where possible to determine, areas that were undeveloped but set to become developed were included. As such, the analysis accounts for future in-City development (but not City boundary growth)

Within each zone, a representative sample of 10 blocks was selected. These blocks were chosen to best reflect both building density and solar access within the entire zone. This is shown in more detail in Figure AA.2



Figure AA.2: Commercial West Solar Zone with Statistical Blocks

The blocks varied in both area and the number of buildings. The residential zones were larger in area, but had lower building density and higher shading, whereas the commercial zones were the opposite, and had much more carport potential. The average block had roughly 19 structures and 6 potential carport locations, whereas the densest block had 48 structures and 28 potential carport locations. Within each block, the physical rooftop and parking space was measured:



Figure AA.3: Statistical Samples in a Block

The table below provides a summary of the estimated area of each zone and the number of structures:

Table AA.1: Statistical Structural Estimates in Goleta					
	Area (sq. miles)	Measured Structures	Total Structures (est.)	Measured Carports	Total Carports (est.)
Zone 1: Residential West	1.61	236	~4,300	3	~50
Zone 2: Residential East	1.43	234	~2,650	7	~100

Zone 3: Commercial West	1.15	98	~550	131	~750
Zone 4: Commercial East	1.33	185	~1,850	100	~1,000
TOTAL	5.53	753	~9,350	241	~1,900

The figure below shows the structural distribution by size on a city-wide scale. Small and medium structures dominate, with a long tail of larger structures. Gaps occur in the measured structure data for larger buildings due to smaller sample sizes. This does not necessarily mean that there are no structures of those sizes- most likely, there would be a re-distribution of the large buildings to fill in those gaps. This increases the potential variance in solar potential for those sizes.

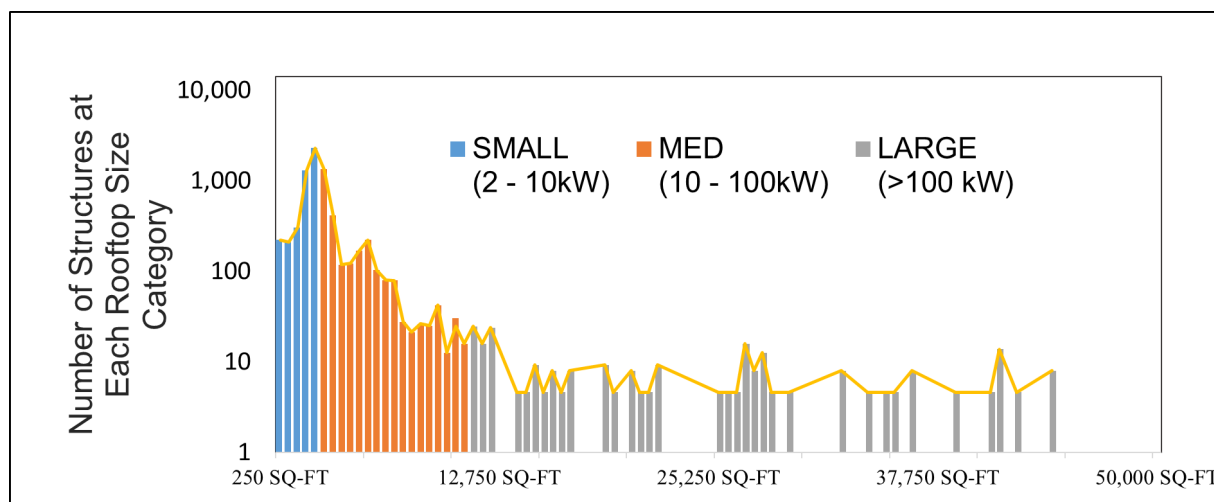


Figure AA.4: Estimated Distribution of Structures by Rooftop Size in Goleta

The roof/parking lot area of each structure and the number of them ill-suited for solar PV systems due to shading or poor roof orientation were catalogued and categorized. After discounting for these losses, the total usable rooftop area of each block was calculated. The usable area from each block was summed, and then scaled up to define the total usable area of the whole zone.

Once the total area was known, the solar potential could be calculated. Fill factors were applied to the roof area to account for the fact that solar cannot cover the entire roof. The fill factors used were based on rooftop size: 10-30% for small roofs (defined as roofs <2500 ft²), since residential roofs are typically pitched and have only one face available, 54-66% for medium roofs (<11000 ft²), 66-70% for large roofs (>11000 ft²), and 80% for carports. These fill factors yield a total solar coverage area, and from there, standard efficiency solar modules were assumed in calculating the total solar potential. Within the statistical model, the results were categorized by building area, providing a picture of system size distribution throughout the city, shown in Figure AA.5.

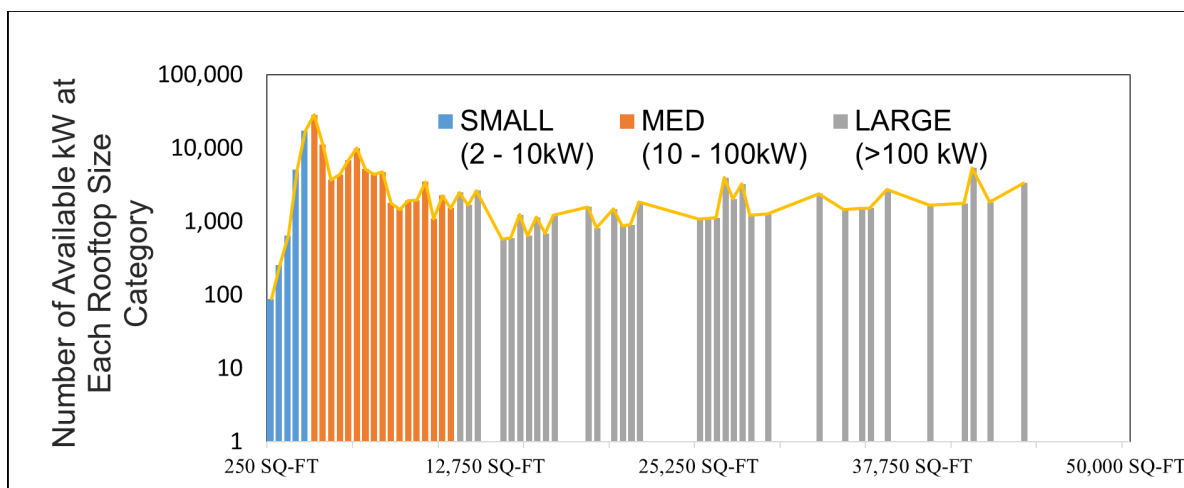


Figure 5: Estimated Distribution of Solar Potential by Rooftop Size in Goleta

Total citywide rooftop solar potential, assuming every single viable rooftop and parking lot installed solar PV, was calculated through this method to be roughly 215 MW, equating to generation potential of 301,000 MWh. The breakdown of potential by sector is summarized below. It is important to note, however, that achieving 100% participation is unrealistic. Even among viable rooftops and parking lots, many sites will not be able to install solar due to load, electrical, or structural constraints that cannot be determined through aerial imagery. As such, participation factors have been added that attempt to account for these. Residential systems use much lower participation since they are generally less able to bear electrical or structural upgrade costs.

	Maximum Potential (MW)	Participation	Final Potential (MW)
Residential	23 – 24	25 – 35%	6 – 8
Small Commercial	82 – 94	55 – 65%	45 – 61
Large Commercial/ Industrial	51 – 58	55 – 65%	28 – 38
Carports	39 – 41	55 – 65%	22 – 26
TOTAL	195 – 217	52 – 61%	101 – 133

Levelized costs of energy can also be estimated but depend heavily on capital cost assumptions. Different sources report very different installation costs. Based on NREL data, avoided utility energy costs, or levelized benefits, exceed levelized solar costs at every size, whereas based on LBNL data, utility energy costs are lower than levelized solar costs for large systems. In contrast, Optony historical data from past consulting experience indicates costs between LBNL and NREL data for medium and large systems, but higher costs for small systems.

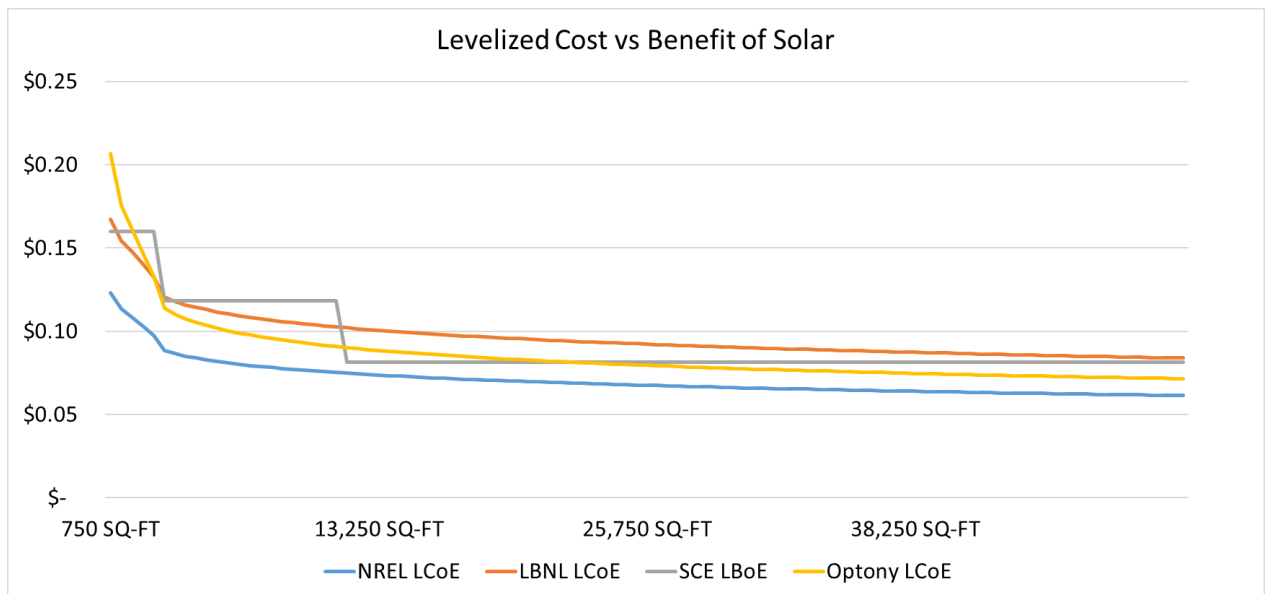


Figure AA.6: Cost vs Benefit of Solar Installations

Lastly, Figure AA.7 shows how local SCE distribution-level feeder constraints on wholesale renewable energy map onto the various solar zones in Goleta. Red feeders have immediate constraints, orange feeders may face constraints in the short-medium term, and green feeders are not expected to face constraints in the short-medium term. The majority of Goleta, including the commercial load centers, are not near constrained feeders, but some feeders in the Residential West zone may constrain solar development. However, there are unlikely to be wholesale projects in this zone.

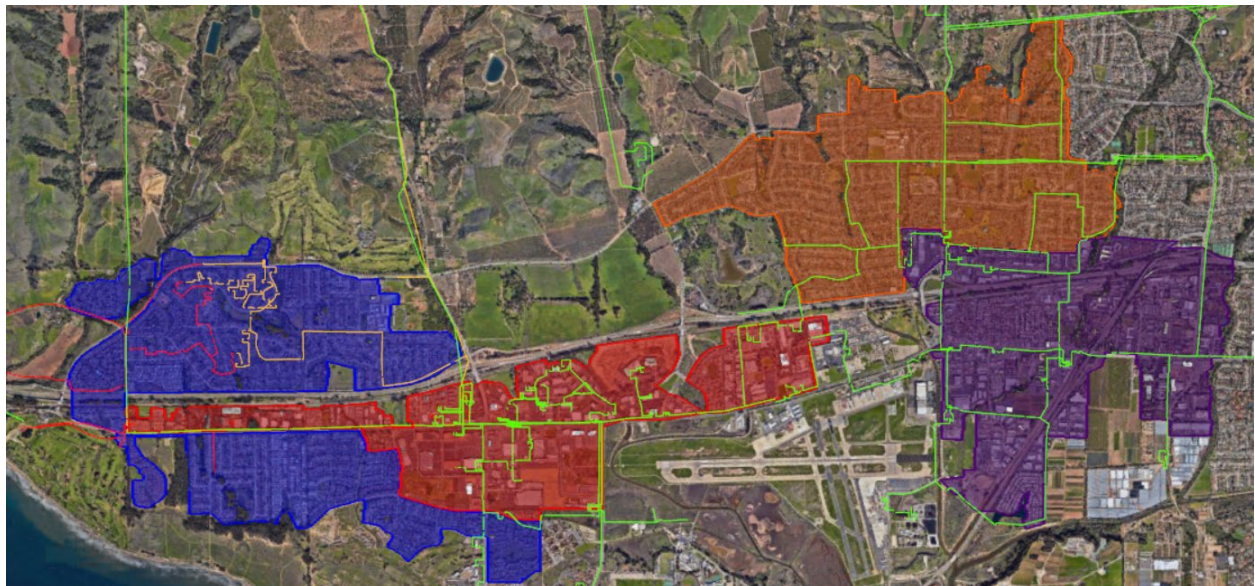


Figure AA.7: Goleta Distribution System Renewable Capacity

Some final notes and assumptions associated with the numbers in this report:

- Estimates include only shade-free and correctly-oriented roofs (shaded and north-oriented roofs are counted as unviable in these results).
- This analysis does not account for systems that may need to be downsized for budgetary reasons.
- The solar fill factor on each roof accounts for good design principles. Only south-facing residential roofs are considered, and for larger flat roofs, space is left open for existing equipment and obstructions. A setback from the roof edge is maintained on all structures.
- Does not discount totals for existing solar installations, so this number represents the total realistic rooftop capacity (not incremental additional capacity), including the already existing solar capacity within the city limits.

Appendix B: Key Terms and Definitions

Behind-the-meter: Behind-the-meter refers to Distributed Energy Resources that are interconnected to the electrical grid on the customer's side of the meter. The electricity generated (or saved) by these resources offsets the utility bill that the customer pays to the utility.

Building Electrification: The conversion of natural gas loads in buildings to electricity loads. It is most commonly achieved by converting furnaces, boilers, and other equipment used for space and hot water heating to electric heat pumps and is a key strategy to reduce emissions. While solar thermal projects also reduce natural gas use, they are generally not included under the umbrella of building electrification as they do not result in a significant electricity load.

California Energy Commission (CEC): Formally the State Energy Resources Conservation and Development Commission headquartered in Sacramento, this agency was created in 1974 to address energy challenges facing the state. They provide technical guidance, stakeholder outreach and coordination, and administer grant funding.

The California Public Utilities Commission (CPUC): The state regulatory agency that sets rules and performs oversight on privately-owned public utilities and some aspects of CCA, including approval of formation.

California Solar Rights Act: The California Solar Rights Act was originally passed in 1978 and is a combination of California Civil Code Sections 714 and 714.1, California Civil Code Section 801, California Civil Code Section 801.5, California Government Code Section 65850.5, California Health and Safety Code Section 17959.1, California Government Code Section 66475.3, and California Government Code Section 66473.1. It limits codifies a citizen's right to solar access and right to install a solar system by limiting installation restrictions placed on solar systems.

Community Solar: A large, or community-scale, solar installation or set of installations that residents and businesses can subscribe to for the purposes of receiving local solar electricity even if their own sites are unsuitable for solar development. It can also provide other community benefits such as resiliency if connected at the appropriate point in the distribution system and if other features such as battery storage are present.

Community Choice Aggregation (CCA): A form of electric power procurement, enabled in 2002 under Assembly Bill 117, in which a city or county (or joint powers agency) serves residents, businesses and municipal facilities within its jurisdiction by removing the responsibility of aggregating electricity supply from the existing Investor Owned Utility.

Design Integrated Permitting: This is a form of permitting where solar designs that adhere to a preset of pre-approved design parameters and conditions are automatically eligible receive a municipal permit, thereby reducing permitting time and costs. These designs can potentially also be integrated into commercially available solar design software, which would ensure permit approval by preventing vendors from creating project designs that do not adhere to the guidelines.

Distributed Energy Resources (DERs): Small renewable energy and energy efficiency devices that are interconnected to the grid in a decentralized manner and provide more local energy control and reduce

reliance on the utility. The category of DERs can also include services such as Demand Response (DR), when many electrical loads are aggregated and reduced in response to a grid signal.

Energy Benchmarking: A policy or program for comparing energy use of buildings or appliances with the goal of achieving reductions in usage. On a building scale, it is typically defined on a square foot basis to allow larger buildings to use more energy.

Energy Storage: A technology that can store energy to be used at a later point in time. It is particularly useful when paired with renewable energy sources, since many renewable energy sources are intermittent.

Front-of-meter: Front-of-meter refers to energy generating resources that are interconnected on the utility's side of the meter and feed directly into the electricity grid. These projects receive compensation for the electricity they generate directly from the utility or another off-taker who has agreed to purchase the electricity.

Full-Time Equivalent (FTE): Staffing by the number of hours a full-time employee would work over the course of a year. This is taken to be approximately 2,000 hours.

Feed-In Tariff (FIT): A Feed-in Tariff is a mechanism to incentivize the development and interconnection of renewable energy generation by offering an incentive for every kilowatt hour of renewable electricity added to the grid. FITs often operate by providing a long-term contract that guarantees the incentive over a set number of years in order to provide economic certainty for the developer and system owner.

Grid Assistive Design: Grid assistive design refers to the ability of properly controlled DERs to provide services in support of the electricity grid, both during normal operation and emergency situations. Usually, DERs, such as rooftop solar, are load-following and automatically power themselves down when the grid is deenergized. Resources designed to island will automatically disconnect from a deenergized electricity grid and continue operating. Grid assistive design allows DERs to function in either of these modes and to be dispatched or automatically provide responsive support and services to the grid during both normal operation or a period of emergency.

Home Energy Score: Developed by the US Department of Energy, it is a measure that provides home owners, renters, and prospective buyers with a score that credibly indicates the energy use of a home. The calculation of this score is standardized to enable direct comparison between various different homes, similar to fuel efficiency ratings for cars.

Interconnection: The process through which an energy resource is connected to the grid according to applications, permissions, approvals, inspections etc. as required by utility procedures.

kV: A unit of voltage that describes the electric potential at a given point. A traditional wall outlet provides 120 V. 1000 volts (V) equals 1 kilovolt (kV). When multiplied by the electricity current, it provides power.

kW/MW: A unit of power that describes the amount of energy being used at any given moment in time. A traditional incandescent lightbulb uses approximately 60-100 W. 1000 watts (W) equals 1 kilowatt (kW), and 1000 kW equals 1 megawatt (MW).

kWh/MWh: Units that describe the energy used by load or produced by a generator over a given period of time. For example, 1 kilowatt-hour (kWh) is the energy consumed by a 1 kW load over 1 hour. 1000 kWh equals 1 megawatt-hour (MWh).

Microgrid: A miniature electric grid consisting of DERs that can connect or disconnect to and from the utility grid as necessary. This enables buildings and loads served by the microgrid to operate independently of the utility grid in power outage events if there are sufficient energy resources on the microgrid.

On-Bill Financing: On-bill financing (OBF) is a common tool for funding energy efficiency upgrades that has been used by utilities in the United States since the 1990s. Upfront capital for energy efficiency upgrades and renewable energy systems is provided to property owners and repayment is facilitated through monthly payments on the customer's utility bill.

Property Assessed Clean Energy (PACE): PACE is a financing mechanism to finance renewable energy projects and energy efficiency upgrades at homes and businesses. Loans are repaid through a new line item on the property owners' property tax assessment bill. PACE programs are sponsored by public agencies and administered and funded through private capital. Interest rates are similar to fixed rate, fixed term home equity loans, generally ranging from 6% to 9%.

Public Safety Power Shutoff: A new utility protocol enabling utilities to proactively turn off transmission lines in advance of dangerous weather, such as high winds, to protect against forest fires and other natural disasters. This policy could result in blackouts for customers served by these transmission lines.

Reliability: In the context of electricity, the consistency in providing high-quality energy at all times, in terms of both voltage and frequency, as required by applicable regulatory standards.

Renewable Energy Credit (REC): A REC is a tradeable certificate that represents the generation of 1 megawatt-hour of renewable electricity. RECs can be bought and sold to transfer which entity holds the credit for generation of the renewable electricity associated with the REC.

Regional Energy Network (REN): Partnerships of county and local governments who deliver or coordinate energy efficiency programs, often for hard-to-reach populations. RENs are approved, regulated, and largely funded by the CPUC.

Resilience: In the context of electricity, the ability of an electricity system—whether on a local or utility scale—to maintain reliable service for the purposes of public safety by withstanding disruptions, responding to faults, and recovering rapidly from failures.

Water-energy nexus: The connection between the resources and equipment that deliver water and those that deliver electricity. For example, water is used to create electricity through hydroelectric power; and electricity is used to treat, convey, and create potable water. The resiliency, reliability, and cost of electric resources affect sites in the water distribution system which require substantial amounts of electricity to operate; thus, the price and availability of one resource is inseparably linked to the price and availability of the other resource.

Zero-net-energy (ZNE): Used to describe a building that generates as much or more energy as it uses. Achieving ZNE is primarily focused on reducing energy use and serving the remainder through renewable energy.

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ATTACHMENT 2

Public Comments / FAQ

Subject: FW: Feedback for Goleta, CA

From: Goleta, CA [<mailto:webmaster@cityofgoleta.org>]

Sent: Monday, April 22, 2019 6:59 PM

To: Valerie Cantella

Subject: Feedback for Goleta, CA

You have received this feedback from Jeff Hanson <jlh749@cox.net> for the following page:

<https://www.cityofgoleta.org/Home/Components/Calendar/Event/11291/338>

I am surprised there is no mention of the 50MW peaker plant within the city limits on Las Armas ave. This plant could be life-saving if we lose our connections to Santa Clara substation in Ventura where all of our power comes from. I understand that ERG energy is considering replacing the MG set with a large battery system. The infrastructure is already there! It seems to me that the City should be including this facility as a low-cost method of achieving it's goals. Please respond to this comment, thank you.

Cindy Moore

From: Bill Woodbridge <billwoodbridge@gmail.com>
Sent: Saturday, April 27, 2019 10:03 AM
To: SEP
Subject: Energy plan meeting questions

Meeting questions:

Where could a solar farm be built in the City or County? We need a bunch of them in the county, as well as wind farms!

Does the City or County own any land on which power generating wind mills could be placed? They provide much greater energy than solar.

Thanks,

Bill

From: [W Michael Hackett](#)
To: [Cindy Moore](#); [Angeline Foshay](#)
Cc: [W Michael Hackett](#)
Subject: COMMENTS SUPPORTING PROPOSED STRATEGIC ENERGY PLAN
Date: Tuesday, May 14, 2019 12:12:01 PM

Hi, Cindy and Angeline. I appreciated the opportunity to visit with you recently, and attend the meeting of the City's Energy/Green Issues Standing Committee. Since I have a conflict and will be unable to attend tomorrow's SEP Workshop, I wanted to forward some observations/suggestions for consideration.

My interest is on the financing and implementation aspects of both Energy Efficiency (EE) projects, and Renewable Energy (RE) projects - areas that NRG has consulted in for several years with utility companies, financing groups, property owners (private and public), contractors and solar installers/developers. I support the direction outlined in the City's SEP Plan, particularly the 100% RE goal for the City and greater Goleta community, and the community outreach activities referenced in the Plan.

Comments on Solar: The best way for the City to demonstrate its commitment to the Plan goals, and its commitment to RE, is to move quickly to install the solar project at the library referenced in the Plan. With limited City owned facilities, the library is the most logical site. A proactive "lead by example" strategy is particularly critical at the outset. The tax benefits, relied on by solar investors to finance projects for local governments, particularly Investment Tax Credits referenced in the Report, begin expiring this year, and will continue to diminish over the next 3 years. Fewer solar financing groups will be available to fund municipal projects, or offer more attractive rates currently available. Time is of the essence. The same timing issue applies to other non-residential solar projects.

Non-Profit Solar: Often overlooked are opportunities available to non-profits (churches, schools, other NP facilities) that can install solar by deploying the same solar power purchase agreement (PPA) to finance projects at their own locations; receive a fixed cost of power; and eventually own the system - generating their own power over an extended period. There are developers who specialize in developing solar projects for NPs, including the funding mechanism.

Community Outreach: Educating commercial and multi-family property owners and residents about the benefits of solar and available financing options is critical in achieving the community wide 100% RE goal. Forums which address these issues will also help identify and solidify potential solar sites, and move owners and others to support the City's Plan. Essential stakeholders for outreach would include the City's largest commercial property owners/investors, Chamber, local environmental groups/individuals, HOA organizations, non-profits, and others who have expressed

interest in solar or would benefit directly or even indirectly from a well planned project(s)

Priorities: NRG would recommend once the Council formally approves the SEP the City move quickly to the implementation stages - first on solar for the Library - a project demonstrating the City's commitment and viewable by all residents; and, second with community forums designed and promoted to reach particular stakeholder groups as referenced above and in the Plan. Targeted outreach would narrow the issues for each forum and enhance prospects for positive and more immediate outcomes, including commitment and timely installation of projects.

I would be glad to discuss these or related items with you, other staff and Council Members, as appropriate, and be a resource for City's SEP implementation process. Thank you for allowing me to submit this information.

Best Regards,
Mike Hackett
Mike Hackett
NRG Answers, LLC
Santa Barbara, CA
www.nrganswers.com
805.403.6450
mike@nrganswers.com

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From: [Kim Jones](#)
To: mhanson@countyofsb.org; [Angeline Foshay](#); [Cindy Moore](#); erinm@ci.carpinteria.ca.us
Subject: Feedback on SEP meeting
Date: Thursday, May 16, 2019 1:11:45 PM

After the Goleta SEP meeting last night, I was left with some concerns:

- who will lead this effort to further renewables after the consultants are gone? Will the cities and county have dedicated people for this?
- how will citizens stay informed of the progress on removing barriers and opportunities to advocate for further changes like net metering between multiple sites for public entities like schools and water districts or furthering a CCA?

I believe that many people are like me and find it comforting to work on and stay informed about efforts to combat climate change in a meaningful way. I suggest you continue to make opportunities for people to participate in furthering renewables if only for their own sanity to combat the never ending drumbeat of dire climate news.

Thanks for your efforts,
Kim Jones

From: [Robert Perry](#)
To: [SEP; Cindy Moore](#)
Subject: Goleta Strategic Energy Plan Questions/Comments
Date: Friday, May 17, 2019 5:41:53 PM

Hi Cindy and Goleta SEP Team!

Below is an expanded list of comments/questions concerning the draft Strategic Energy Plan (SEP). I may add more comments in subsequent emails. Also, it may be more efficient to schedule a meeting with Optony to discuss some of these items, instead of forcing them to write exhaustive responses. I'm generally available.

1. **Page 4/Table ES-1:** Is there a breakdown available of residential and commercial solar? Why such a low amount for parking lots, which are general large open spaces on commercial industrial sites. How does solar capacity on commercial roofs compare to parking lots on such sites?
2. **Page 4/Table ES-2:** Load constraints: what are the assumptions concerning site load and roof lease revenue and liability? Do these assumptions include energy storage? Have you discussed with SCE the possibility of maximizing roof generation as part of an aggregate IFOM project using a feed-in tariff?
3. **Page 5/Table ES-2:** Where are the interconnection difficulties in Western Goleta? Does it concern the commercial/industrial properties located along Hollister?
4. **Page 7/Figure ES-2:** What percentage of energy procured through a CCA is locally generated?
5. **Page 17/Table 2.1:** Have any generation calculations been made from the 425 acres of commercial rooftops in Table 2.1? Is there corresponding capacity for parking lots on those sites?
6. **Pages 17-18/Table 2.2:** Has the total export capacity of feeders in commercial-industrial sectors been calculated? This would assume elimination of all site load, thereby freeing up export capacity to a substation. Also, is there any general geotechnical soils data available which might require additional structural requirements? Is the weight of such canopies a primary concern?
7. **Page 19/Tables 2.3/2.4:** Why is parking lot capacity less than a quarter of rooftop capacity, particularly on standard commercial sites? My overview of commercial industrial properties indicate that parking lots at least equal that of rooftops.
8. **Page 20/Battery Storage Potential:** Is the following excerpt (my emphasis) an SCE requirement? "Since a storage system could discharge at its peak capacity at the same time as a solar panel also generating at its peak rate, *the combined capacity of the two components is used to determine interconnection viability*. As such, it competes for space on the distribution grid with solar power despite not resulting in additional annual

generation.” Under what conditions would peak solar and storage discharge at the same time?

9. **Pages 22-23/Electricity Demand in Goleta:** What are the assumptions relative to the increase in EV load over time? Have any projections been made concerning the increase in electric fleet vehicles charged on commercial sites with high solar capacity?
10. **Page 26/Figure 3.6:** What portion of CCA Marginal Renewable Generation is local and what portion is delivered via fragile transmission lines?
11. **Page 28/ Land Ownership, Structural, and Locational Barriers-Split Incentives:** Such a green lease should serve to reward property owners through matching system generation against established grid tariffs, with a floor equal to any incurred PPA costs. EE costs should be allocated pro rata over the life of the asset, and disappear once fully paid. IFOM FITs are the most simple, but probably would result in the lowest ROI.
12. **Page 29/Load Insufficiency:** What are the structural damage risks related to rooftop solar? Could owners avoid these risks by just solarizing their parking lots? Could commercial owners be offered rooftop solar to cover site load, then contract to generate maximum parking capacity incorporating increased feeder load? Could the City issue an insurance plan by requiring developers to pay a premium on an aggregated basis to keep rates low?
13. **Page 32/Regional Collaboration:** As the municipal and unincorporated areas of the Goleta 220/66 distribution system are all subject to the same issues, collaboration is critical in order to establish consistency in both process and function throughout the local service area. This will also serve to defray administrative and oversight costs.
14. **Page 34/Educational and Public Awareness Barriers:** I agree that a “one-stop shop” online portal is a good idea, not only for education, resource and advisory services, but ultimately to provide a seamless step-by-step online process for permitting and approval of projects. Forms would be submitted, reviewed and approved online, with transparent pathway that shows all parties the exact status of a project. Issues in form submittal could be handled via online chat or message threads, with an option to discuss problem areas with staff.
15. **Page 34/SCE Resiliency Procurement Process:** For our area, SCE’s recent RFO was an unmitigated disaster. As I have repeatedly told SCE (and anyone else who will listen), the opaque, competitively bid RFO/RFP process simply does not work with the countless number of distributed energy projects. What is needed is a continuous, transparent approval process, dictated by an general energy plan that establishes clear criteria and standards for project approval. Standardization would be encouraged to incentivize a quick, streamlined approval process.
16. **Page 35/Technical-Infrastructure Barriers-Distribution Grid:** Higher capacity feeders should be targeted for initial development, and SCE should be required to upgrade

lower circuits as it has budgeted upgrading all 4KV circuits in its General Rate Case. It should also be noted that as distributed resource decrease site grid load, more development should open up capacity. Question: in a grid modernized circuit, shouldn't a site be allowed to export an amount equal to its prior load profile?

17. **Pages 35-36/Federal Investment Tax Credits (ITCs):** Isn't there currently a way to safe harbor a solar+storage project so long as five percent (5%) of project costs have been implemented by a certain date? Could costs be first applied to pre-installation costs?
18. **Page 37/Recommended Sites for Development:** Primary focus should be on commercial-industrial sites, particularly along the Hollister corridor from Storke to Fairview. According to SCE, C-I account consume almost 70% of system load and have the capacity to become net generators. Properties serviced by a particular segment of a feeder should be approached, with a plan to develop some behind-the-meter interconnection, possibly with a shared energy storage facility. Many business parks should be able to accommodate such a scenario.
19. **Pages 38-39/Site Evaluation Methodology:** Is this being pursued at the County level? It seems that any processes should be uniform throughout the county.
20. **Page 58/ Work with IOUs to Develop a Community Solar Project:** California has to shake its community solar stigma and develop a standard approval process. AS I state in the workshop, school districts share some unique characteristics with distribution grids. Facilities are strategically located equidistant to serve an identified community. School sites are also optimal net generators: facilities high very high potential capacity but require relatively low loads. They also serve as critical facilities in emergency conditions as shelters and staging areas. Lastly, siting advanced distributed technologies on school sites presents an opportunity to develop curriculum to educate and train students, possibly for a vocational career upon graduation from high school or college.
21. **Page 70/ Create a Formal Energy Assurance Plan (EAPs):** Such a plan should be developed, and provide additional funding to develop critical facilities as highly resilient microgrids with high solar generation and storage capacity, including in some cases an electrolysis component to create hydrogen supplied for fuel cell fleet vehicles which could serve as emergency generators. There is R&D showing that Fuel cell vehicles are capable of providing power to facilities. This should be explored and anticipated.

From: Robert Perry

Sent: Wednesday, May 15, 2019 4:24 PM

To: sep@cityofgoleta.org; Cindy Moore (cmoore@cityofgoleta.org) <cmoore@cityofgoleta.org>

Subject: Goleta Strategic Energy Plan Questions

Hi Cindy and Goleta SEP Team!

Below are some comments/questions concerning the draft Strategic Energy Plan (SEP). I will bring a copy to tonight's workshop and will likely add more comments in advance of the submission deadline.

1. **Page 4/Table ES-1:** Is there a breakdown available of residential and commercial solar? Why such a low amount for parking lots, which are general large open spaces on commercial industrial sites. How does solar capacity on commercial roofs compare to parking lots on such sites?
2. **Page 4/Table ES-2:** Load constraints: what are the assumptions concerning site load and roof lease revenue and liability? Do these assumptions include energy storage? Have you discussed with SCE the possibility of maximizing roof generation as part of an aggregate IFOM project using a feed-in tariff?
3. **Page 5/Table ES-2:** Where are the interconnection difficulties in Western Goleta? Does it concern the commercial/industrial properties located along Hollister?
4. **Page 7/Figure ES-2:** What percentage of energy procured through a CCA is locally generated?
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12. **Pages 35-36/Federal Investment Tax Credits (ITCs):** Isn't there currently a way to safe harbor a solar+storage project so long as five percent (5%) of project costs have been implemented by a certain date? Could costs be first applied to pre-installation costs?
13. **Pages 38-39: Site Evaluation Methodology:** Is this being pursued at the County level? It seems that any processes should be uniform throughout the county.

Sincerely,

Robert Perry

Project Manager/Director of Energy Research

World Business Academy

2020 Alameda Padre Serra, Suite 135

Santa Barbara, CA 93103

Phone: [805-892-4600](tel:805-892-4600)

Fax: [805-884-0900](tel:805-884-0900)

Cell: [818-384-4557](tel:818-384-4557)

Email: bob@worldbusiness.org

Website: www.worldbusiness.org

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May 20, 2019

**Re: Santa Barbara County, City of Carpinteria, City of Santa Barbara and City of Goleta
Strategic Energy Plan**

Dear Santa Barbara Strategic Energy Plan Program Managers,

Swell Energy Inc. (Swell) is writing to express our support for your Strategic Energy Plans and to provide comments that may support a more collaborative and holistic outcome utilizing all available resources, technologies, programs, and innovative financing mechanisms available to help solve the problems addressed in your plans.

Swell is a California-based residential energy storage developer and aggregator. Swell offers consumers financed energy solutions including energy storage, solar, and energy management to save homeowners, businesses, and government agencies money and provide smart, clean, and secure energy. Swell also works with electric utilities to develop energy storage and demand response programs that address specified utility needs such as demand response and resource adequacy.

Swell recently was awarded a [contract](#) with Southern California Edison (SCE) to provide 14 MW of behind-the-meter (BTM) demand response to serve the local grid through energy storage in the Southern Santa Barbara County and Ventura regions. We believe that through this contract with SCE and participation with local community stakeholders we can contribute substantially to the success of your plan.

Comments on Proposed Solutions

The following comments are based on your current plans as well as additional recommendations for your consideration regarding the integration of on-site behind-the-meter solar and energy storage throughout Santa Barbara County to achieve success in reaching goals regarding climate change mitigation, electricity reliability and resiliency, emergency preparedness, and economic stability and growth.

Solution: Update Solar and Storage Ordinances and Building Permit Processes

Swell's Comments

Swell has been developing residential energy storage projects throughout California for over 4 years and along the way we have experienced many various interpretations of code, timelines for approval, costs of permitting and inspection hurdles. If the regional governments can work together to align their processes, code interpretations, reduce permitting costs and have consistent inspection methodologies then Swell could would be able to reduce these associated reductions in our soft costs for project development to the consumer thereby increasing adoption of these technologies.

With over 400 projects permitted, installed and inspected, Swell has developed a design and installation manual for residential and small commercial energy storage project development and we'd be happy to share this and support any efforts to streamline and reduce costs for permitting of these projects.



Solution: Financial Incentives to Fill Gaps In Economic Viability

Swell's Comments

Incentives: It was proposed to institute a Performance-Based Incentive (PBI) that rewards combined solar + storage installations. Swell recommends providing up-front incentives for customers to add battery storage to their existing or new solar projects. These energy storage projects, if mandated to discharge during peak hours and charge during non- peak hours during the solar window, will help stabilize the regional grid and allow for increased penetration of solar generation. In addition to this, we'd recommend that the storage projects not only be compensated for their impact to the grid and goals to achieve 100% renewable energy but they also be awarded "micro-grid resiliency participation points" whereby each on-site renewable+storage project could receive additional incentives if their home or building would be listed as a site that could be used by emergency services and the community during the case of extended outages.

Bulk Discounts: A recommendation was made to host collaborative procurements to bargain for better prices from solar vendors. Bulk discounts and community wide partnerships can absolutely support reduced costs for larger projects. However, selecting only one vendor may have negative impacts on local workforce and labor utilization and regional economic development. For smaller scale on-site renewable and storage projects, due to the complex nature of various projects and technologies, along with various business models and financial structures, a bulk purchase with one vendor could limit the potential for commercial and residential on-site developers to provide their unique solutions to the consumers.

Solution 1: Community Choice Aggregation and Community Solar

Swell's Comments

We support the development of a CCA to be able to better control the supply and management of load in Santa Barbara County. A CCA would allow preferred procurement of local resources such as Community Solar and Demand Response solutions. With more local resources for renewable energy generation and energy storage, the CCA could then manage these resources directly and even develop the ability to isolate the community at the primary substations through a community scale Micro-Grid during emergency situations such as wildfires, mud-slides, earthquakes, terrorism/war, or any other emergency event that would warrant local control of energy infrastructure.

If a CCA is created Swell is able to support the CCA in planning for the development of local, low-cost, renewable resources to serve customers a lower cost of power while maintaining local supply and grid resiliency.

Solution 2: Financing Programs to Increase Access and Adoption

Swell's Comments

Loan Loss Reserve: Based on our experience, loan loss reserve programs to reduce a regional lender's interest rates on unsecured loans create difficult processing and are only successful if sufficient volume is achieved. If an interest rate for a residential unsecured loan could be between 0% to 4.99% this will

spark interest in the community and within the developer community of partners that would offer the loan. Above 4.99% will begin to compete with other private funds and may be less attractive to the developer partners that would use them if the processes aren't extremely simple to apply for and fund a loan. That said, if the loan loss reserve fund could be used to provide a risk free loan to government agencies to implement on-site solar, efficiency and energy storage solutions then this could catalyze municipal development of energy project.

On-bill Financing: On-bill financing can provide a cost-effective method of financing DER deployment, but has traditionally suffered from high administrative costs and red tape. If SCE were able to implement 0% on-bill financing for commercial energy storage systems and solar through their Express Solutions, this could be a great offer for local governments and other public entities as well as regional businesses to finance on-site energy storage, provided that the funding mechanisms and compliance protocols aren't so onerous as to render the program cost-prohibitive. Additionally, if a 0% residential on-bill financing program existed through SCE (or a future CCA) this would represent an attractive offer that regional developers of energy storage and solar projects would utilize to make projects pencil out for homeowners. Again, in the residential case, the administration of such a program would have to be simplified in order to reach widespread adoption.

Third-Party Ownership - Power Purchase Agreement or Leases: Third party ownership of energy storage assets presents a unique opportunity to offer low cost monthly payments for the "energy storage as a service" to be offered to residential and commercial customers to provide energy savings and backup energy security to consumers while also solving the problems of local renewable energy resiliency and goals to achieve 100% renewable energy. Swell recommends community support and advocacy for these solutions for end-consumers as well as for implementation on public facilities.

Solution 3: Energy Assurance Plan

Swell's Comments

Swell highly recommends considering on-site renewable energy + energy storage for inclusion in the Energy Assurance Plan for local emergency preparedness and we see this as a vital element to consider in creating a resilient and renewable community. Due to the ease of implementation with small scale energy storage projects, < 10 kW, we believe that this technology can support numerous benefits to the on-site user while also serving as a resource for local community preparedness and distributed renewables. The following are some examples of projects that would potentially meet the goals of an EAP while also supporting other items in the strategic energy plan.



- **Residential**

- **Single Family Dwellings:** Energy storage installed on a home can provide savings to the owner by charging the solar during off-peak hours and using that solar energy in the home during on-peak periods. In addition to these benefits of time-of-use (TOU) arbitrage, the system will provide a community node of energy security and when combined with solar can then provide perpetual self-sufficiency entirely during an emergency. This will allow this resident to back up their essential circuits such as lighting, refrigeration, communications and ventilation. This residence can also serve (at the owner's discretion) as a neighborhood resiliency hub whereby residents can go to during an emergency to recharge their phones/devices and have access to energy for any other emergency need.
- **Multi-family dwellings and common space:** Often the high-costs of solar and aesthetic design standards may make solar difficult to develop for the common space/community areas in multi-family housing. A battery, however, can be easily installed to provide TOU arbitrage services to the building while also providing backup energy during an emergency. Without solar, the duration of the energy storage supply will be based on the consumption of the energy. Small refrigeration, lighting and recharging of devices are relatively low consumers of energy so these areas could become safe zones for communities during emergencies.

- **Public Infrastructure and Services**

- The following public infrastructure could benefit from having small scale energy storage with local energy backup by both providing TOU arbitrage and bill savings for the agency that owns this infrastructure while also maintaining essential services during grid outages.
 - Street lighting
 - Water and Gas safety shutoff valves
 - Communications
 - Stop Lights/ Crosswalks

- **On-site Energy Storage Additional Potential Opportunities:** The following locations present additional opportunities for the installation of energy storage to provide TOU arbitrage savings, reduced peak energy with stored solar-window off-peak energy, and emergency preparedness. In some cases, the energy storage systems would be installed alongside additional self-generation systems and provide additional resiliency to these systems while offering additional savings and community services to support the 100% renewable goals

- **Emergency Response Facilities**
 - Fire Stations, Paramedics/Ambulances, Police
- **Small Business and Nonprofits**
 - Restaurants, Coffee Shops, Groceries
 - Health Clinics and Urgent Care Facilities

- Gas Stations
- **Schools**
 - Day Care/Preschools, Public Schools
 - Private schools
 - Colleges
 - UCSB
- **Community Centers and Commons**
 - Libraries
 - Neighborhood Community Centers
 - City Community Centers
 - Recreation Centers
 - Fairgrounds
 - Shopping Centers

Solutions 4: Outreach and Advocacy

Swell's Comments

A solution was proposed to create a countywide resource one-stop shop and hub for advertisements. While we general are in support of this it will also be important for there to be a focus on collaboration with all agencies and interest groups that are promoting renewable energy and local energy resiliency including but not limited to the local governments, utilities, non-profits, faith based groups, schools, youth groups, workforce development groups, and businesses.

Additional activities that are recommended for collaborative outreach campaigns include the following.

- Social marketing
- Door-to-Door advocacy and engagement campaigns with local students
- Billing inserts by utilities including electric bill, gas bills, water bills, and trash/recycling.
- Direct mail by participating businesses with use of a local "Certification" to show inclusion in program
- Tabling at events and frequently travelled locations such as grocery stores
- Workforce Training Programs
- K-12 Energy Education Programs and Partnerships

Re: City of Goleta - 2.6 Battery Storage

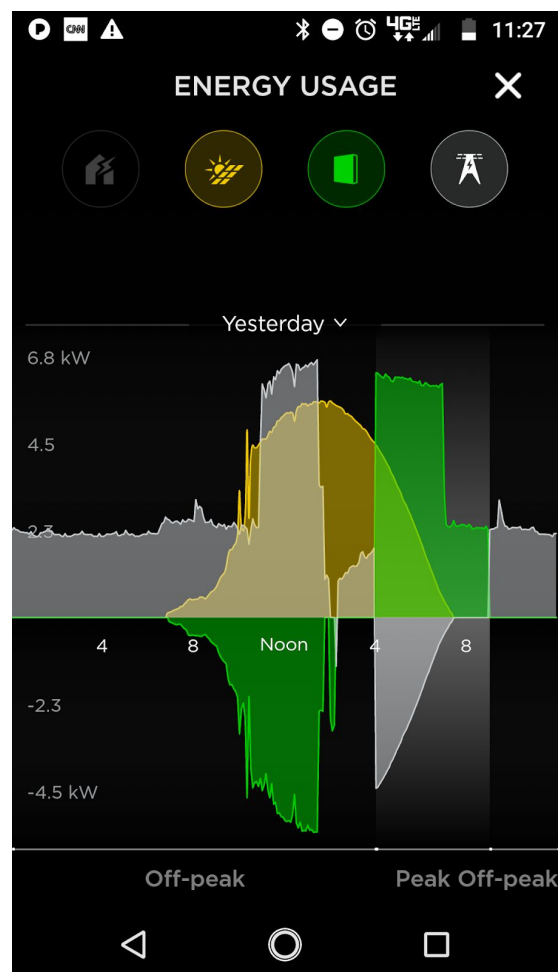
"Although battery storage costs are reducing rapidly, financial feasibility is still variable and is heavily dependent on the range of services being performed by the battery. These services can range from utility bill reductions to performing utility services contracts. Additionally, electric constraints from the distribution system are particularly pressing for storage systems. **Since a storage system could discharge at its peak capacity at the same time as a solar panel also generating at its peak rate, the combined capacity of the two components is used to determine interconnection viability. As such, it competes for space on the distribution grid with solar power despite not resulting in additional annual generation.**"

Swell's Comments

Swell recommends more explanation and diligence regarding interconnection policies prior to publishing this note.

Energy storage systems are generally interconnected to be listed as "Non-export" whereby the systems do not backfeed energy into the grid but rather only serve on-site load. By interconnecting the energy storage in this way, it does not compete for space on the distribution grid but rather increases the capacity of the regional grid to increase deployment of solar generation. Distributed energy storage systems connected to on-site solar energy are designed to charge from the solar energy during off-peak hours and discharge that energy to serve on-site load during the peak hours. When not combined with on-site solar, the battery system can be programmed to charge during the peak solar windows, thus charging the batteries from mostly local energy sources and then using that energy during peak windows thereby saving the host-customer money while also reducing peak loads to the grid offset by local (mostly) renewable energy stored earlier in the day.

The example here shows a day's profile for a Tesla Powerwall II AC system. It shows the solar production (Yellow), net energy grid consumption/generation (Grey) and energy storage charging (negative Green) and discharging (positive Green) to serve on-site load while allowing the excess solar to backfeed into the grid during peak times.



From: [Goleta, CA](#)
To: [Cindy Moore](#)
Subject: Strategic Energy Plan
Date: Monday, May 27, 2019 8:27:17 PM

Message submitted from the <Goleta, CA> website.

Site Visitor Name: Lee Ann Palmer
Site Visitor Email: tikaneve@gmail.com

Dear Ms Moore,

Thank you for the information at the Strategic Energy Workshop on May 15th.

You gave an excellent summation of where the City of Goleta stands on using renewable energy.

One of the items discussed was 'where to put a back up battery system'

At the time, I had not thought about this but recently had an idea.

There is an old Vulcan plant at the end of Ellwood Station Road. It is parcel

079-210-066. Per the assessor it is 4.87 acres and as far as I remember it has been nothing but an eyesore for at least 15 years. Just a graffiti target and visible from freeway. Because it is up against the railroad tracks and also has what appear to be High Voltage lines running up the street, it might be ideal for locating the backup battery system. Surely the city is receiving very little property tax for the parcel in the current state.

There is a link below that will show you the parcel if you are not familiar with it.

<http://maps.digitalmapcentral.com/production/vcommunityview/cities/goleta/index.aspx#>

Hoping this helps, I agree we need a good backup and frankly would be great to remove this eyesore from the community. If you have any questions, please don't hesitate to call me 805-683-3024.

I don't have email access to the other presenters at the meeting, possibly you could forward this email.

Sincerely,
Lee Ann Palmer

From: [Bill Shelor](#)
To: [Michelle Greene](#); [Peter Imhof](#); [Paula Perotte](#); [Kyle Richards](#); [Cindy Moore](#)
Subject: Goleta Energy and Green Issues
Date: Wednesday, May 29, 2019 12:25:55 AM

A significant number of development projects in Goleta are reviewed by various City Boards and Commissions (Planning Commission, Design Review Board, and Parks and Recreation Commission).

In order to maximize the impact these Boards and Commission should have on promoting the priorities of the City Council, I would like to suggest that all Board and Committee members (and the staff that support them):

1. be made fully aware of the City Council resolution to move expeditiously to 100% renewable energy
2. be oriented on the considerable planning efforts that are currently being undertaken to implement the City's GHG reduction goals.

Each of these Boards and Commission should be required to consider this City Council priority during concept review, project design review, and project approval.

When appropriate, incorporation of PV should be a condition of project approval, and should only be waived if the applicant can prove infeasibility. Planning staff should work closely with all projects applicants during the initial consultation phase to ensure applicants are fully aware of the City's GHG reduction priorities.

RESIDENTIAL ENERGY CONSERVATION STRATEGIES

Some of the ideas below come from one of many articles on this topic <http://info.aee.net/hubfs/PDF/aee-peak-demand-reduction-strategy.pdf?t=1446657847375>

I. Determine peak times by talking with power companies

II. Set a target that would obviate the need for more power plants and battery storage

III. Work with power companies and share cost of incentives to

- offer great incentives for off peak uses (especially for growing number of plug in cars)
- promote more solar and to sell back to power co. (encourage residents to add some extra solar panels)
- install AC on timers (modlets controlled by power co.)
- promote putting electric water heaters & pools on timers
- encourage running of washing machines and dishwashers during off-peak
- encourage residents to purchase more energy efficient washing machines, dishwashers and on demand water heaters

IV. Communicate and report on successes (and build on them through awareness, incentives and technology)

RECEIVED

JUN 12 2019

**City of Goleta
Planning & Environmental Svcs.**

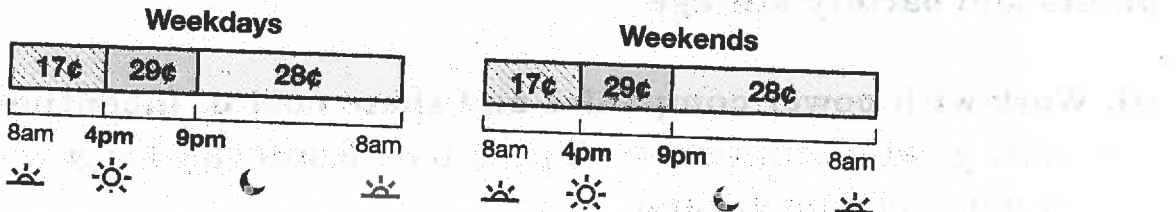
L. Kelle

TOU-D-4-9PM Winter Rates
October-May (8 Months)

These rates are in effect from October 1, 2011 to May 31, 2012.

TOU-D-4-9PM Winter Rates

October-May (8 Months)



☐ Super Off-Peak ☐ Off-Peak ☐ Mid-Peak Above rates are per kWh.

Prices do not include the \$.08 per kWh baseline credit that is applied to your monthly baseline allocation.

RECEIVED

JUN 15 2011

Energy Services

Energy & Environmental Services

Frequently Asked Questions & Public Comments

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Date & Commenter	Public Comment	Response
5-17-2019 Bob Perry	Goleta - Is there a breakdown available of residential and commercial solar? Why such a low amount for parking lots, which are general large open spaces on commercial industrial sites. How does solar capacity on commercial roofs compare to parking lots on such sites?	<i>Please see Table 2.3 in Section 2.4 on page 19 for the breakdown between Residential, Commercial, and Large Commercial/Industrial opportunities for solar installation in Goleta. These data are also broken down between rooftop and parking lot capacities. Parking lots do indeed provide space, but typically only on commercial properties, which are vastly outnumbered by residential properties. At commercial properties that do have parking lots, the sampled lots show significant tree shading, which compares unfavorably with the relatively unshaded commercial rooftop areas that were sampled. With frequent shading concerns, the estimated capacity of parking lots was reduced by estimating a lower participation level. Should the preference be for cutting trees in parking lots over installing solar on relatively clear rooftops, the parking lot capacity could exceed the estimates in the SEP. The ratio of relatively unshaded commercial/industrial rooftops to relatively unshaded parking lots is approximately 4:1 in the sampled areas.</i> <i>Another reason for the lower participation rates ascribed to commercial parking lots is a higher cost to construct compared to rooftop solar (mostly due to steel costs) and geotechnical concerns relating to water tables and liquefaction zones (see response to comment on soils data below on page 3).</i>
5-17-2019 Bob Perry	Goleta - What are the assumptions concerning site load and roof lease revenue and liability? Do these assumptions include energy storage? Have you	<i>Please see Section 4.1.2 on page 28 for more information. Site load is a constraint as related to annual consumption being the highest allowable solar system output allowed through utility</i>

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	discussed with SCE the possibility of maximizing roof generation as part of an aggregate IFOM (in-front-of-meter) project using a feed-in tariff?	<i>net-metering rules (solar systems can generally not be sized to exceed 100% of annual energy consumption). Roof leasing challenges relate to financing and insurance constraints faced by property owners considering leasing out the use of their unused roof space for solar installations. Site load would generally not be a constraint for energy storage beyond the expected output of an attached solar system, if such a system exists. Leasing constraints would not necessarily apply to energy storage, unless battery installations on-site increased insurance liabilities. Our understanding is that SCE is not interested in a new feed-in tariff, but, rather, seeks to enable more large-scale off-site renewable energy through proposed Green Tariff programs.</i>
5-17-2019 Bob Perry	Goleta - Where are the interconnection difficulties in Western Goleta? Does it concern the commercial/industrial properties located along Hollister?	<i>Please see Figure 4.4 in Section 4.6.1 on page 36. Feeder capacities are fairly or significantly limited west and north of the Camino Real Marketplace. Commercial/industrial properties along Hollister Avenue east of Camino Real Marketplace generally face fewer feeder capacity issues, with some exceptions.</i>
5-17-2019 Bob Perry	Goleta - What percentage of energy procured through a CCA is locally generated?	<i>Please see Section 3.3 on page 26 for more information. The hypothetical CCA modeled in the SEP impact modeling has been assumed to start at 75% renewable electricity and increase to 100% (see 3.3, p. 27). The percentage of this renewable electricity that would be local has not been considered in the SEP and would depend upon CCA procurement programs and approach.</i>

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5-17-2019 Bob Perry	Goleta - Have any generation calculations been made from the 425 acres of commercial rooftops in Table 2.1? Is there corresponding capacity for parking lots on those sites?	<i>Yes, please see the estimated corresponding capacities and generation outputs in Tables 2.3 and 2.4 in Section 2.4 on pages 19 and 20. Commercial/industrial rooftops are estimated at 73-99 MW of solar capacity. Parking lots at the same facilities, after applying estimated participation factors, are estimated to contain 22-26 MW of solar capacity.</i>
5-17-2019 Bob Perry	Goleta - Has the total export capacity of feeders in commercial-industrial sectors been calculated? This would assume elimination of all site load, thereby freeing up export capacity to a substation. Also, is there any general geotechnical soils data available which might require additional structural requirements? Is the weight of such canopies a primary concern?	<i>Please see Section 4.6.1 on page 36. Total availability capacities of feeders throughout Goleta have been gathered from SCE Integration Capacity Analysis maps. Since the utilities own and operate the distribution network, the utilities can and do make a "worst-case" assumption of zero load (meaning full export) when determining allowable new capacity onto the grid, precluding the argument, from the utilities point of view, that behind-the-meter DERs can reduce strain on the distribution grid. The SEP did not have access to a general geotechnical soils analysis, but the SEP team has found that structural capacities for soils will vary greatly from site to site. Generally, sites seeking underground work of significant depth (i.e., carports with piers normally 8-12 feet below grade) encounter structural issues around water tables that are close to the surface or in areas where silt or other soft soils settle. Typically, horizontal shear, as a combination of weight and potential wind-loading forces, is the primary concern.</i>
5-17-2019 Bob Perry	Goleta - Why is parking lot capacity less than a quarter of rooftop capacity, particularly on standard commercial sites? My overview of commercial	<i>Many commercial properties do not feature off-street parking, or their off-street parking is constrained by proximity to buildings or neighboring buildings in a way that would make parking lot solar</i>

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	industrial properties indicates that parking lots at least equal that of rooftops.	<i>unfeasible. At commercial properties that do have parking lots, the sampled lots show significant tree shading, which compares unfavorably with the relatively unshaded commercial rooftop areas that were sampled. As discussed in the response to the comment on residential versus commercial solar break down (page 1), the estimated capacity of parking lots was reduced by estimating a lower participation level. Should the preference be for cutting trees in parking lots over installing solar on relatively clear rooftops, the parking lot capacity could exceed the estimates in the SEP. The ratio of relatively unshaded commercial/industrial rooftops to relatively unshaded parking lots is approximately 4:1 in the sampled areas.</i>
5-17-2019 Bob Perry	Goleta - Is the following excerpt (my emphasis) an SCE requirement? "Since a storage system could discharge at its peak capacity at the same time as a solar panel also generating at its peak rate, the combined capacity of the two components is used to determine interconnection viability. As such, it competes for space on the distribution grid with solar power despite not resulting in additional annual generation." Under what conditions would peak solar and storage discharge at the same time?	<i>This statement has been clarified on page 21 of the Goleta SEP. The utilities treat solar + storage as though both the solar and battery storage systems could discharge at full capacity at the same time, even though this scenario is unlikely to ever occur, due to the way solar + storage systems are electrically wired and controlled through software. By treating solar + storage systems as though both could and would export at full capacity at the same time, the utilities restrict the size of solar + storage systems on their grids.</i>
5-17-2019 Bob Perry	Goleta - What are the assumptions relative to the increase in EV load over time? Have any projections been made concerning the increase in electric fleet	<i>The estimated EV load increase uses historic data from SLED (State and Local Energy Data) and SCE estimates for future electric vehicle penetration. EV penetrations have been aggregated and treated separately from specific charging</i>

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	vehicles charged on commercial sites with high solar capacity?	<i>locations, which have not been analyzed during forecasting the city's electricity demand. Stress on the grid caused by demand spikes from high EV charging loads at certain sites are a legitimate concern but were beyond the scope of this planning effort.</i>
5-17-2019 Bob Perry	Goleta - What portion of CCA Marginal Renewable Generation is local and what portion is delivered via fragile transmission lines?	<i>Local content of CCA renewable generation is assumed to likely be low, but no specific percentage has been estimated. As noted in Section 3.3 on page 27, renewable generation through a CCA would not necessarily resolve local resiliency issues, but specific CCA programs could potentially focus on spurring local generation.</i>
5-17-2019 Bob Perry	Goleta – Comment on Land Ownership, Structural, and Locational Barriers-Split Incentives: Such a green lease should serve to reward property owners through matching system generation against established grid tariffs, with a floor equal to any incurred PPA costs. EE costs should be allocated pro rata over the life of the asset, and disappear once fully paid. IFOM FITs are the simplest, but probably would result in the lowest ROI.	<i>This topic is covered in Section 4.1.1 on page 28, and Section 6.5.1 on page 78 of the SEP.</i> <i>Goleta's SEP identifies the split-incentive issue as an obstacle to solar development in commercial and multi-family residential buildings. Solutions identified include 1). facilitation of green leases that bridge the gap by having tenants and landlords share the benefits of energy projects, where the tenant pays a higher rent per square foot to account for lower utility bill costs due to actions taken and paid for by the landlord, (Strategy 6.5.1), and 2). Institution of feed-in tariffs through either a CCA or by lobbying SCE.</i> <i>Site lease (and FIT) structure will need to be carefully managed to ensure that there is equity in financial benefits between</i>

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		<i>tenants and property owners, but exact design of these policies is beyond the scope of this effort.</i>
5-17-2019 Bob Perry	Goleta - What are the structural damage risks related to rooftop solar? Could owners avoid these risks by just solarizing their parking lots? Could commercial owners be offered rooftop solar to cover site load, then contract to generate maximum parking capacity incorporating increased feeder load? Could the City issue an insurance plan by requiring developers to pay a premium on an aggregated basis to keep rates low?	<i>Property owners are concerned about rooftop leaks arising from penetrations made during solar installation. Property owners understand that roof and labor warranties would require repairs, but insurance may not cover damages to tenant property caused by roof leaks. Solar carports are a solution to avoid rooftop construction risks, but are not a viable option at all locations. While, physically and electrically, property owners could use larger feeder wires to both offset on-site load and export significant energy directly to the grid, the utility (or potential CCA) needs to offer an energy off-taker program (like Feed-In Tariff) to make this arrangement commercially viable.</i> <i>The idea of the City obtaining insurance against damages at select private properties, so as to limit the financial investment necessary, was considered in the SEP (4.1.2) and should be explored during implementation efforts. It was not suggested as a solution for immediate implementation because of the need for more research. .</i>
5-17-2019 Bob Perry	Goleta – Comment on Regional Collaboration: As the municipal and unincorporated areas of the Goleta 220/66 distribution system are all subject to the same issues, collaboration is critical in order to establish consistency in both process and function	<i>This item is addressed in each SEP under the “Obstacles and Opportunities” Chapter. While historically there has been a lack of formal collaboration, it has changed in recent years. It is understood that to carry the SEP work forward regional collaboration will be necessary.</i>

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	throughout the local service area. This will also serve to defray administrative and oversight costs.	
5-17-2019 Bob Perry	Goleta – Comment on Public Outreach: I agree that a “one-stop shop” online portal is a good idea, not only for education, resource and advisory services, but ultimately to provide a seamless step-by-step online process for permitting and approval of projects. Forms would be submitted, reviewed and approved online, with transparent pathway that shows all parties the exact status of a project. Issues in form submittal could be handled via online chat or message threads, with an option to discuss problem areas with staff.	<i>This topic is covered in Section 4.4 on pages 33-34 and Section 6.5.1 on page 79 of the Goleta SEP. Additional strategies to streamline permitting are also discussed in section 6.1.1 of the Goleta SEP.</i> <i>The City of Goleta is also already developing a Permit Tracking System that will facilitate day-to-day operations related to planning and building permits by enabling the City to track and report on all kinds of permit applications through the various planning and building processes. It will track permit records, plans, fees and associated data, with real time, web-based input-output and reporting capabilities. It will also be integrated with the concurrent, on-going Document Imaging Program, which will allow the system to catalogue and display historical permits issued both by the City and the County of Santa Barbara prior to City incorporation. The system is intended to enhance customer service, ensure data accountability, reduce permit processing time, decrease unnecessary staff workload, provide consolidated reporting and permit tracking across departments, and prevent compromised data security.</i>
5-17-2019 Bob Perry	Goleta – Comment on SCE Resiliency Procurement Process: For our area, SCE’s recent RFO was an unmitigated disaster. As I have repeatedly told SCE (and anyone else who will listen), the opaque,	<i>This topic is covered in section 4.5.1 on page 34 of the SEP. The SEP identifies the “Least-Cost Best-Fit” methodology used by SCE to rank projects in the Moorpark LCR/Goleta Resiliency Request for Proposals (LCR RFP), as an obstacle to renewable</i>

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	competitively bid RFO/RFP process simply does not work with the countless number of distributed energy projects. What is needed is a continuous, transparent approval process, dictated by a general energy plan that establishes clear criteria and standards for project approval. Standardization would be encouraged to incentivize a quick, streamlined approval process.	<i>generation. It states that this methodology provides benefit to projects that can generate power at on-peak periods, but because solar generation no longer aligns with SCE's defined on-peak periods, the value of renewable was not fully accounted for in the RFO. The SEP recommends collaborating regionally to work with SCE and the CPUC to amend the existing procurement process going forward.</i> <i>While the SEP includes recommendations for streamlining of the Goleta's (and the County & Carpinteria's) permitting and approval process, the City has limited ability to determine the processes for interconnecting DER projects to the utility-owned grid. While it is often slow, the State level is the appropriate oversight level to impact the investor-owned utility's policies, and the SEP includes advocacy as an important strategy. CCE is also discussed as a mechanism to create more local control of interconnection policies (such as the ability to establish a FIT), but this ability is still limited since CCE programs do not own grid infrastructure.</i>
5-17-2019 Bob Perry	Goleta – Higher-capacity feeders should be targeted for initial development, and SCE should be required to upgrade lower-capacity circuits as it has budgeted upgrading all 4KV circuits in its General Rate Case. It should also be noted that as distributed resources decrease site grid load, more development should open up capacity. Question: in a grid-modernized	<i>Feeder sizing for handling renewable generation output is based upon the highest capacity output. Due to the intermittent availability of most renewable resources, and particularly solar, that maximum capacity will rarely be reached—at most, 2-3 hours per day for 2-3 months of the year. Solar systems typically have higher maximum power capacities than the maximum kilowatt (kW) demand of the building on-site in order to produce</i>

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	circuit, shouldn't a site be allowed to export an amount equal to its prior load profile?	<i>100% of the annual energy (kWh) usage in a given building while working around the intermittency issue. If an attached energy storage system can be used to enable a larger capacity solar system, while being programmed to never exceed an export profile that matches the site's maximum usage profile, yes—this should be allowable by utilities. Currently, utilities are working to build comfort and processes for vetting and trusting that such software solutions will work in all cases and will not be a risk for exporting more power than installed feeders and transformers can handle.</i>
5-17-2019 Bob Perry	Goleta - Isn't there currently a way to safe harbor a solar+storage project so long as five percent (5%) of project costs have been implemented by a certain date? Could costs be first applied to pre-installation costs?	<i>Please see Section 4.7.1. Yes, the IRS has issued guidance for ways that developers can be considered to have met end-of-year deadlines through hitting prescribed development thresholds prior to the end of each calendar year. However, the end-of-year step-downs still represent accurate deadlines for developers to meet.</i>
5-17-2019 Bob Perry	Goleta – Comment on Recommended Sites for Development: Primary focus should be on commercial-industrial sites, particularly along the Hollister corridor from Storke to Fairview. According to SCE, C-I account consume almost 70% of system load and have the capacity to become net generators. Properties serviced by a particular segment of a feeder should be approached, with a plan to develop some behind-the-meter	<i>This topic is covered in Section 1.3.2, page 15 and Tables 2-3 & 2-4, and in Chapter 5 on page 38. The SEP identifies the commercial sector, and specifically the large number of business parks in Goleta, as a significant opportunity for more solar development, estimating that less than 2% of the viable commercial and industrial potential has been reached. Tables 2-3 and 2-4 identify estimated solar capacity by generation by sectors. Relative to the residential sector, commercial properties are larger and therefore have</i>

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	interconnection, possibly with a shared energy storage facility. Many business parks should be able to accommodate such a scenario.	<i>more rooftop space that is also generally flatter than residential roofs, making it more suitable for solar installations. As part of the public outreach process during SEP development, a commercial property stakeholder meeting was held in Goleta to understand barriers to commercial property investment and identify potential financing structures that could incentivize landowners. These key stakeholders expressed interest in participating in quarterly learning sessions with renewable energy developers, with facilitation by the City. Finally, based on communications with private property owners, Optony is analyzing specific opportunities along the identified corridor. The project team has initiated the outreach process and is continuing to engage willing site owners around the findings of the analysis and to gather additional information. For privacy purposes and unless authorization is provided, the private site information will remain confidential.</i>
5-17-2019 Bob Perry	Goleta – Site Evaluation Methodology: Is this being pursued at the County level? It seems that any processes should be uniform throughout the county.	<i>Yes, the same general site evaluation methodology is being used to evaluate sites for the County of Santa Barbara and City of Carpinteria as for the City of Goleta.</i>
5-17-2019 Bob Perry	Goleta – Comment on IOUs and Community Solar: California has to shake its community solar stigma and develop a standard approval process. As was discussed in the workshop, school districts share some unique characteristics with distribution grids. Facilities are strategically located equidistant to	<i>It is understood that the availability of community solar would be beneficial in addressing the energy reliance and resiliency challenges faced by the south Santa Barbara coastal communities. To date, the Clean Energy Working Group (CEWG) (consisting of Santa Barbara County and the cities of Goleta, Carpinteria and Santa Barbara), in concert with the SEP process,</i>

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	serve an identified community. School sites are also optimal net generators: facilities have very high potential capacity but require relatively low loads. They also serve as critical facilities in emergency conditions as shelters and staging areas. Lastly, siting advanced distributed technologies on school sites presents an opportunity to develop curriculum to educate and train students, possibly for a vocational career upon graduation from high school or college.	<i>has submitted comments to the California Public Utilities Commission on SCE's proposed revisions to the current program, and worked closely with SCE in an effort to develop a program that would encourage participation. The CEWG will continue working with both the local utility and the CPUC in an effort to develop a program that is viable for the community. This item is also addressed in each SEP under the subheading "Work with IOUs to Develop a Community Solar Project".</i>
5-17-2019 Bob Perry	Goleta – Comment on Energy Assurance Plans: Such a plan should be developed, and provide additional funding to develop critical facilities as highly resilient microgrids with high solar generation and storage capacity, including in some cases an electrolysis component to create hydrogen supplied for fuel cell fleet vehicles which could serve as emergency generators. There is R&D showing that Fuel cell vehicles are capable of providing power to facilities. This should be explored and anticipated.	<i>Energy Assurance Plans are addressed in each SEP. Drafting and adopting such plans will be at the direction of each agency's decision-making body as part of tasks selected to move forward with.</i>
5-22-2019 CEC	County – Comment on SEP - We applaud the County and Optony for this comprehensive draft Strategic Energy Plan (SEP) and strongly supports each recommendation being considered thoroughly. We ask the County to immediately act on recommendations to streamline permitting for built-	

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	environment solar and remove barriers to utility-scale solar as identified. We also ask the County to accelerate energy efficiency and renewable energy projects at County-owned facilities.	
5-22-2019 CEC	County – Comment on SEP - Although the SEP is a separate document from the Energy and Climate Action Plan (ECAP), we see opportunities to establish stronger mechanisms within the SEP to be referenced within the next ECAP update. Although the draft SEP clearly establishes opportunities for renewable energy growth within the County, and addresses some key policy barriers, there is a lack of reach codes and other policy “sticks” to encourage distributed renewable energy growth and storage within the community, especially in South County. The SEP addresses distributed-scale solar and storage with opportunities for funding, education, collaborative procurement, and performance-based incentives.	<i>Recommendations from the Strategic Energy Plan that are approved by the Board of Supervisors will be considered and may be incorporated where appropriate with the upcoming ECAP update.</i>
5-22-2019 CEC	County – Comment on additional strategies: Consider reach codes, including those that require solar on new commercial developments paired with storage, cool roofs for residential roofing projects, and solar beyond the minimum required by Title 24 on new residential projects.	<i>Reach codes can be an effective method of achieving increased energy savings and decreased GHG emissions. Not including reach codes as a strategy does not mean they are being ruled out as an option at some point, but that they were out of the scope of the SEP, which was aimed at identifying and removing obstacles to renewable energy development.</i>

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5-22-2019 CEC	County – Comment on additional strategies: Require that commercial property owners get solar quotes with any reroofing project and provide County support in reviewing those quotes and determining project payback.	<i>Similar to reach codes, policy “sticks”, while sometimes an effective option, were not part of the scope of the SEP.</i>
5-22-2019 CEC	County – Comment on additional strategies: In evaluating the opportunities to streamline solar and storage permitting, look beyond an internal team chaired by the County Chief Building Official. Given the standing frustration between the solar community and the Planning and Development Department, the County may consider an independent advisor to guide this process, such as may be provided by the California Solar and Storage Association.	<i>Engagement of and participation from diverse stakeholders in programmatic or process changes often yields more well-thought-out results. County strategy 5.1.1 has been updated to recommend the involvement of a number of outside stakeholders.</i>
5-22-2019 CEC	County – Comment on additional strategies: Include a program (or at least educational outreach) to support local building owners in addressing the split incentives for solar (and storage) wherein the building owner invests in DER but the tenants see the bill savings. If the County has an easy model for actually billing the tenants for the solar energy, or other innovative models that encourage building owners to invest in DER, there may be more investment in that space.	<i>A targeted educational outreach campaign is an activity that would be conducted under the one-stop-shop recommendation (5.5.1).</i>

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5-22-2019 CEC	County – Comment on additional strategies: There is an opportunity to further engage with/invest in the Santa Barbara County Green Business Program and shape the energy savings opportunities that the program promotes.	<i>The County recognizes that engaging with existing programs and entities such as the Santa Barbara County Green Business Program is essential for addressing wide-reaching sustainability and energy issues. While not included in the SEP as a specific strategy, it does not mean that it has been ruled out, but that it was outside the scope of this project.</i>
5-22-2019 CEC	County – Comment on additional strategies: Include specific direction for accessing OBF funding for County facilities. In the SEP, the language describing the inability of the County to use OBF on their facilities classifies the barrier as “... deemed to be relatively simple” and does not include a plan or goal for accessing the funding other than, “clarifying OBF requirements for County facilities with IOUs”. The internal barriers to OBF financing have been a major challenge to implement energy projects and the SEP should include a deeper analysis of the problem and potential solutions.	<i>The County has had challenges with OBF in the past and has made significant strides toward being able to utilize it as a financing option, including during the SEP development process.</i> <i>Expanded discussion of barriers to using OBF to finance internal County projects was not included in the SEP because it is anticipated that these barriers area being dealt with effectively outside of the SEP process.</i>
5-22-2019 CEC	County – Comment on additional strategies: The SEP identifies challenges in developing utility scale solar resources, highlighting those in Southern Santa Barbara County. Given the difficulty of building utility scale renewables in South County coupled with the need for these resources (because of resiliency concerns associated with being at the end of Southern California Edison’s transmission lines),	<i>Section 5.3.2 addresses incentives to increase economic payback and participation. Included are two types of financial incentives recommended: Expected Performance Based Buydown (EPBB) and Performance-Based Incentives (PBI), as well as suggestions on adjusting the incentive amounts and targets.</i>

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	the County should focus their efforts on incentivizing (or requiring in the case of reach codes) distributed solar and storage in South County. Therefore, some of the ideas outlined above may be most appropriate in priority zones that face reliability concerns, such as South County.	
5-22-2019 April Price	County – Do you know why the Ellwood peaker plant wasn't turned on during the power outages associated with the debris flow and Thomas fire?	<i>We are unaware of a reason given by the utility, but this may have had to do with power lines being down—any power pushed through those lines would have put utility workers at risk of electric shock.</i>
5-22-2019 April Price	County – What is the natural gas 56.7 MW facility in the map below- is that La Goleta Storage Facility's	<i>The 56.7-MW facility is the Ellwood Generating Station. The 49.8-MW natural gas facility listed is the Exgen or Santa Ynez plant located in Las Flores Canyon between Refugio and El Capitan State Beaches.</i>

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	own on-site gas combustion for electricity? 	
5-22-2019 April Price	County – Does the County have a list of sites that they are considering for solar installs that just wasn't included in this draft report? If so, can you share that with us? We may be able to add to your list.	<i>Yes, the County has a list of potential sites, but private sites may not be shared without property owner permission. An anonymized version of this list will be included in the final report. Recommendations of additional potential sites are welcomed.</i>
5-20-2019 Swell Energy	To all – Comment on Solar and Storage: Solar and storage developers experience many various interpretations of code, timelines for approval, costs of permitting and inspection hurdles. If the regional	<i>The Santa Barbara County Climate Collaborative is a new initiative led by the County of Santa Barbara with participation by multiple jurisdictions throughout the County to coordinate climate mitigation and adaptation efforts across several sectors,</i>

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	governments can work together to align their processes, code interpretations, reduce permitting costs and have consistent inspection methodologies, developers could pass along these associated reductions in our soft costs for project development to the consumer, thereby increasing adoption of these technologies. Consider working with industry to use an installer-developed design and installation manual for residential and small commercial energy storage projects, which could help to streamline and reduce costs for permitting of these projects.	<i>including electric reliability and resiliency. This multi-jurisdictional, collaborative framework may be a way to address inconsistency in permitting and inspection of solar + storage projects. Strategy 5.1.1 in the County's SEP, recommends creating a team of local government staff and industry representatives to create a set of standardized criteria for such systems.</i>
5-20-2019 Swell Energy	<u>To all</u> – Comment on Incentives: It was proposed to institute a Performance-Based Incentive (PBI) that rewards combined solar + storage installations. As an alternative, provide up-front incentives for customers to add battery storage to their existing or new solar projects. These energy storage projects, if mandated to discharge during peak hours and charge during non- peak hours during the solar window, will help stabilize the regional grid and allow for increased penetration of solar generation. In addition to this, we'd recommend that the storage projects not only be compensated for their impact to the grid and goals to achieve 100% renewable energy but they also be awarded "micro-	<i>PBIs are included in the executive summary discussion, as well as under the subheading "Altered Time-of-Use Rate Schedules". While PBIs could be effective, they are cost-prohibitive without the launch of a CCA program</i> <i>The value of upfront incentives to drive storage retrofits on existing solar projects is recognized for the Goleta SEP, but more scoping would likely need to be done to determine the appropriate scale of this program, given its possibly small audience. This suggestion will not be ruled out by the City.</i>

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	grid resiliency participation points” whereby each on-site renewable+storage project could receive additional incentives if their home or building would be listed as a site that could be used by emergency services and the community during extended outages.	
5-20-2019 Swell Energy	<u>To all</u> – Comment on Collaborative Procurement: A recommendation was made to host collaborative procurements to bargain for better prices from solar vendors. Bulk discounts and community wide partnerships can absolutely support reduced costs for larger projects. However, selecting only one vendor may have negative impacts on local workforce and labor utilization and regional economic development. For smaller scale on-site renewable and storage projects, due to the complex nature of various projects and technologies, along with various business models and financial structures, a bulk purchase with one vendor could limit the potential for commercial and residential on-site developers to provide their unique solutions to the consumers.	<i>This comment is addressed under “Altered Time-of-Use Rates”. While there are challenges to collaborative procurements, it is something that will continue to be explored.</i>
5-20-2019 Swell Energy	<u>To all</u> – Comment on CCA: We support the development of a CCA to be able to better control the supply and management of load in Santa Barbara County. A CCA would allow preferred	<i>The County, in partnership with the Cities of Goleta, Carpinteria, and Santa Barbara, commissioned a study in 2018 to analyze the viability of a Community Choice Energy (CCE) program serving Santa Barbara County. While that study indicated feasibility under</i>

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	procurement of local resources such as Community Solar and Demand Response solutions. With more local resources for renewable energy generation and energy storage, the CCA could then manage these resources directly and even develop the ability to isolate the community at the primary substations through a community scale micro-grid during emergency situations such as wildfires, mud-slides, earthquakes, terrorism/war, or any other emergency event that would warrant local control of energy infrastructure.	<i>certain scenarios, subsequent regulatory and legislative changes in a rapidly transforming electricity market and policy environment compelled an update to this feasibility study. It is anticipated that the participating jurisdictions will return to their respective decision-makers with the results of the updated feasibility study in July 2019 for further consideration of the findings and next steps.</i> <i>Should participation in a CCA move forward, it would likely not procure all its electricity locally and would therefore not immediately resolve local resiliency issues. However, compared to an IOU, a local CCA will be more mission-driven to focus on local solar siting, and could work more directly with local stakeholders to develop local renewable electricity programs.</i>
5-20-2019 Swell Energy	<u>To all</u> – Comment on Loan Loss Reserves: Based on our experience, loan loss reserve programs to reduce a regional lender's interest rates on unsecured loans create difficult processing and are only successful if sufficient volume is achieved. If an interest rate for a residential unsecured loan could be between 0% to 4.99%, this will spark interest in the community and within the developer community of partners that would offer the loan. Above 4.99% will begin to compete with other private funds and may be less attractive to the developer partners that would use them if the processes aren't extremely	<i>It is understood that the availability of easy, affordable financing would be beneficial in stimulating uptake of renewable energy and energy storage development. Significant past experience with loan loss reserve programs will inform any future programs that are developed.</i>

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	simple to apply for and fund a loan. That said, if the loan loss reserve fund could be used to provide a risk-free loan to government agencies to implement on-site solar, efficiency, and energy storage solutions, this could catalyze municipal development of energy projects.	
5-20-2019 Swell Energy	To all – Comment on Financing: On-bill financing (OBF) can provide a cost-effective method of financing DER deployment, but OBF has traditionally suffered from high administrative costs and red tape. If SCE were able to implement 0% on-bill financing for commercial energy storage systems and solar through their Express Solutions, this could be a great offer for local governments and other public entities as well as regional businesses to finance on-site energy storage, provided that the funding mechanisms and compliance protocols aren't so onerous as to render the program cost-prohibitive. Additionally, if a 0% residential on-bill financing program existed through SCE (or a future CCA) this would represent an attractive offer that regional developers of energy storage and solar projects would utilize to make projects pencil out for homeowners. Again, in the residential case, the administration of such a program would have to be simplified in order to reach widespread adoption.	<i>It is understood that the availability of easy, affordable financing would be beneficial in stimulating uptake of renewable energy and energy storage development. To date, the Clean Energy Working Group (CEWG) has worked closely with IOUs in an effort to identify feasible solutions. The CEWG will continue working with both the local utilities and the CPUC in an effort to develop programs that are viable for the community.</i>

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5-20-2019 Swell Energy	<u>To all</u> – Comment on Third-Party Ownership: Third-party ownership of energy storage assets presents a unique opportunity to offer low-cost monthly payments for “energy storage as a service” to be offered to residential and commercial customers to provide energy savings and backup energy security to consumers while also solving the problems of local renewable energy resiliency and goals to achieve 100% renewable energy. We recommend community support and advocacy for these solutions for end-consumers, as well as for implementation on public facilities.	<i>The Goleta SEP includes an explanation of various financing options including Direct Purchase, Third-Party Ownership – Power Purchase Agreement, and Hybrid Purchase options. Information on these options could be made available through the One-Stop Shop, which would act as the main hub and point of contact for information for all new programs and policies implemented due to SEP recommendations (Strategy 6.5.1). Additionally, Strategy 6.4.1.3 recommends evaluating opportunities for supplementing existing diesel generators with battery storage as part of creating and implementing an Energy Assurance Plan for the City’s critical facilities. Further, the SEP recommends that battery storage for electricity backup be included in the design considerations of new facilities such as Fire Station 10 and the train station.</i>
5-20-2019 Swell Energy	<u>To all</u> – Comment on Energy Assurance Plan: We highly recommend considering on-site renewable energy + energy storage for inclusion in the Energy Assurance Plan for local emergency preparedness, and we see this as a vital element to consider in creating a resilient and renewable community. Due to the ease of implementation with small-scale energy storage projects (< 10 kW), we believe that this technology can support numerous benefits to the on-site user while also serving as a resource for local community preparedness and distributed renewables.	<i>Some potential considerations for an Energy Assurance Plan are addressed in section 5.4.1. A focus on sites with opportunities for both renewable generation and battery storage is included in the recommended action.</i>

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5-20-2019 Swell Energy	<u>To all</u> – Comment on Recommended Projects: Energy storage installed on a home can provide savings to the owner by charging the solar during off-peak hours and using that solar energy in the home during on-peak periods. In addition to these benefits of time-of-use (TOU) arbitrage, the system will provide a community node of energy security and, when combined with solar, can then provide perpetual self-sufficiency entirely during an emergency. This will allow this resident to back up their essential circuits such as lighting, refrigeration, communications and ventilation. This residence can also serve (at the owner’s discretion) as a neighborhood resiliency hub which residents can go to during an emergency to recharge their phones/devices and have access to energy for any other emergency need.	<i>It’s recognized that there are many benefits that battery storage may provide with regards to reliability and resiliency. While not included in the SEP as a specific strategy, it does not mean that it has been ruled out, but that it was outside the scope of this project.</i>
5-20-2019 Swell Energy	<u>To all</u> – Comment on Recommended Projects: Often the high costs of solar and aesthetic design standards may make solar difficult to develop for the common space/community areas in multi-family housing. A battery, however, can be easily installed to provide TOU arbitrage services to the building while also providing backup energy during an emergency. Without solar, the duration of the energy storage supply will be based on the	<i>It’s recognized that there are many benefits that battery storage may provide with regards to reliability and resiliency. While not included in the SEP as a specific strategy, it does not mean that it has been ruled out, but that it was outside the scope of this project.</i>

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	consumption of the energy. Small refrigeration, lighting and recharging of devices are relatively low consumers of energy, so these areas could become safe zones for communities during emergencies.	
5-20-2019 Swell Energy	To all – Comment on Recommended Projects: The following public infrastructure could benefit from having small-scale energy storage with local energy backup by both providing TOU arbitrage and bill savings for the agency that owns this infrastructure, while also maintaining essential services during grid outages: Street lighting; Electric water and gas safety shutoff valves; Communications; Stop Lights/ Crosswalks	<i>The benefits of energy storage at public facilities is recognized and considered throughout the SEP, particularly in section 5.4.1 of the County SEP (see below).</i>
5-20-2019 Swell Energy	To all – Comment on Recommended Projects: The following locations present additional opportunities for the installation of energy storage to provide TOU arbitrage savings, reduced peak energy with stored solar-window off-peak energy, and emergency preparedness. In some cases, the energy storage systems would be installed alongside additional self-generation systems and provide additional resiliency to these systems while offering additional savings and community services to support 100% renewable goals: Fire Stations, Paramedics/Ambulances, Police; Small Business and Nonprofits; Restaurants, Coffee Shops, Groceries; Health Clinics and Urgent Care	<i>The identification of critical sites for onsite renewable energy and energy storage is addressed in section 5.4.1 of the County SEP as part of the Energy Assurance Plan recommendation.</i>

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	Facilities; Gas Stations; Day Care/Preschools, Public Schools, Private schools, and Colleges (including UCSB); Libraries; Neighborhood and City Community Center; Recreation Centers; Fairgrounds; Shopping Centers	
5-20-2019 Swell Energy	To all – Comment on Public Outreach: A solution was proposed to create a countywide resource one-stop shop and hub for advertisements. While we general are in support of this, it will also be important for there to be a focus on collaboration with all agencies and interest groups that are promoting renewable energy and local energy resiliency, including, but not limited to, local governments, utilities, non-profits, faith based groups, schools, youth groups, workforce development groups, and businesses. Additional activities that are recommended for collaborative outreach campaigns include the following: Social marketing; Door-to-Door advocacy and engagement campaigns with local students; Billing inserts by utilities including electric bill, gas bills, water bills, and trash/recycling; Direct mail by participating businesses with use of a local “Certification” to show inclusion in program; Tabling at events and frequently travelled locations such as grocery stores;	<i>Development of a one-stop shop for information has been addressed in the SEP. In addition to exploring development of an educational hub, the CEWG members will continue to work with the Community Environmental Council and other local non-profits on and explore new ways to reach out to the community at large.</i>

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	Workforce Training Programs; K-12 Energy Education Programs and Partnerships.	
5-16-2019 Kim Jones	Goleta - Who will lead the effort to further renewables development after the consultants are gone? Will the Cities and County have dedicated staff for pursuing the findings?	<i>Reaching the City of Goleta's 100% renewable target will require engagement, action and leadership from many sectors. Internally, the City will need to build on its organizational staffing capacity and plan for financial resources to support the efforts and implement the plan. Actual staffing needs will depend on specific implementation actions undertaken as prioritized by the City Council following adoption of the plan. Continued regional collaboration and partnerships will also be critical to support reaching renewable energy goals. The Tri-County Regional Energy Network and Santa Barbara County Climate Collaborative are two examples of existing regional efforts that could be leveraged now.</i>
5-16-2019 Kim Jones	Goleta - How will citizens stay informed of the progress on removing barriers and of opportunities to advocate for further changes, like net metering between multiple sites for public entities like schools and water districts or furthering a CCA? People find it comforting to work on and stay informed about efforts to combat climate change in a meaningful way.	<i>Stakeholder involvement and community outreach are essential to the success of the SEP and the City of Goleta's transition to 100% renewable energy. It is anticipated that beyond outreach for specific projects that may take place, the City will continue to utilize the Monarch Press newsletter, regular social media posts, and City Council Green Committee meetings to provide updates and solicit input. Additionally, incorporating Spanish language inclusion on materials and during events could expand outreach within the community.</i>
5-27-2019 Lee Ann Palmer	Goleta - As the City of Goleta considers a site for a large-scale battery energy storage system, has the old Vulcan plant at the end Ellwood Station Road	<i>This parcel is currently shown in the City of Goleta's Capital Improvement Program (CIP project #9027) as located adjacent to Alternative 7 for a potential US 101 Overcrossing. The CIP project</i>

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	been considered? Development at that location would also help to remove what is currently an underutilized site that may be considered a community eyesore.	<i>is in preliminary phases and under re-evaluation. The Planning & Environmental Review Departmental Work Plan includes a task by the Current Planning Division to comprehensively evaluate the suitability of utility-scale battery storage facilities within the City and identify in what land use designations and zones such projects would be compatible. It is unknown if this particular site has been considered by a private developer for such purposes.</i>
5-23-2019 Elliot MacDougall	County – Comment on Zoning: The cap for solar projects to be permissible in AG-I and AG-II zoning should be increased from 1MW to 3MW, because this 3 MW cap is more in-line with existing caps through utility Fast Track interconnection rules and the CPUC’s ReMAT program. The increase of a 1MW system to a 3MW system is a relatively small increase in acreage usage, while continuing to require a Conditional Use Permit for projects over 3MW. Enabling more projects to proceed through streamlined utility approval processes will increase the likelihood that more and larger projects will actually move into construction.	<i>The importance of aligning local regulations to State and utility policies, with an eye toward easing the burden on renewable energy developers, is understood. This change is being considered for inclusion in Section 5.1.2 of the County SEP.</i>
5-23-2019 Elliot MacDougall	County – Comment on Ag Lands: More solar projects on agricultural lands could be built if the County created a streamlined or automatic cancellation process to remove land from Williamson Act contracts upon solar projects receiving building permits.	<i>It is recognized that the Williamson Act poses a significant barrier to much of the agricultural land in Santa Barbara County. While we have little influence on the Williamson Act itself, the County enforces the Williamson Act with its Uniform Rules for Agricultural Preserve, which we do have more control over.</i>

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		<i>Changes to the Uniform Rules are addressed in section 5.1.3 in the County's SEP.</i>
5-30-2019 Michael Chiacos	County - Do you know if the analysis will look at potential for floating solar in SB County? A town in NorCal is doing a 1.78 MW project and other small commercial systems have been built in CA and around the US. Perhaps not as relevant for SB, but maybe for CA is floating solar on reservoirs with dams, so the solar can increase the capacity factor of the dam and utilize the transmission built for it. A World Bank report describes the market and also mentions 10 dams around the world that could produce 1-10 GW solar each by only using 1-4% of the surface areas of the reservoirs.	<i>We did consider floating solar, specifically on Lake Cachuma, early on in the project. There were some significant barriers including its recreational use, drastically changing water levels, numerous water agencies with contracted access, and federal ownership that led to it being ruled out as an immediate project to pursue. My understanding is that floating solar is also significantly more expensive, around 50% more, than ground-mounted or rooftop systems.</i>
4-22-2019 Jeff Hanson	Goleta - I am surprised there is no mention of the 50MW peaker plant within the city limits on Las Armas Ave. This plant could be life-saving if we lose our connections to Santa Clara substation in Ventura where all of our power comes from. I understand NRG Energy is considering replacing the MG set with a large battery system. The infrastructure is already there! It seems to me that the City should be including this facility as a low-cost method of achieving its goals.	<i>The use and future of the Ellwood Generating Station on Las Armas Ave. has been the topic of frequent debate at the California Public Utilities Commission (CPUC). As of December 2018, the CPUC has determined that the facility must remain in operation as a peaker plant. Specifically, in July 2018 California Independent System Operator concluded that Ellwood was required for the reliable operation of the transmission system in 2019 and authorized the designation of Ellwood as a reliability must-run resource. Effective December 2018, the CPUC authorized SCE's request to contract with GenOn Energy Management, LLC (a former subsidiary of NRG Energy, Inc.) for</i>

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		<i>operation of Ellwood through 2020. In the future, the plant's usage may change, and clean energy or energy storage options could be explored at the facility at that time, in conjunction with the site owner/operator, SCE, and the CPUC.</i>
4-27-2019 Bill Woodbridge	Goleta/County - Where could a solar farm be built in the City or County? We need a bunch of them in the county, as well as wind farms!	<i>Several potential locations in the County are under consideration, though constraints related to agricultural use (Williamson Act) and other considerations, such as availability of grid infrastructure and environmental impacts on wildlife, do limit the number of locations likely to be commercially feasible.</i>
4-27-2019 Bill Woodbridge	Goleta/County - Does the City or County own any land on which power generating wind mills could be placed? They provide much greater energy than solar.	<i>Unfortunately, much of the County-owned land where there may be space for the development of a wind farm features a fairly weak wind resource, from the perspective of the industry. Private or federal lands may offer more potential, depending on other land-use constraints.</i> <i>There is no publicly owned land of suitable size and wind resource to support a utility-scale wind project in Goleta.</i>
5-14-2019 W. Michael Hackett	Goleta – Comment on SEP: I support the direction outlined in the City's SEP Plan, particularly the 100% renewable energy (RE) goal for the City and greater Goleta community, and the community outreach activities referenced in the Plan. The best way for the City to demonstrate its commitment to the Plan goals, and its commitment to RE, is to move quickly to install the solar project at the library referenced in the Plan. With limited City-owned facilities, the	<i>The City has taken numerous steps to adopt policies and implement projects that support energy conservation, efficiency, and renewables, but it is recognized the City should continue to take steps to lead by example with its own facilities and operations that will help provide community-wide visibility and build momentum in SEP implementation. The SEP includes a detailed technical assessment and financial analysis of potential solar photovoltaic (PV) project development opportunities at sites owned by the</i>

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	library is the most logical site. A proactive "lead by example" strategy is particularly critical at the outset. The tax benefits, relied on by solar investors to finance projects for local governments, particularly Investment Tax Credits referenced in the Report, begin reducing this year, and will continue to diminish over the next 3 years. Fewer solar financing groups will be available to fund municipal projects or offer more attractive rates than currently available. Time is of the essence. The same timing issue applies to other non-residential solar projects.	<i>City of Goleta, including the Library and recommends under Strategy 4.7.1.2 a Public Power Pool as one way to take advantage of the current Investment Tax Credit (ITC) while it lasts by enabling multiple public agencies to proceed with procurement before the planned ITC step-down. The City Council will provide direction on implementation priorities.</i>
5-14-2019 W. Michael Hackett	Goleta – Comment on Nonprofit Solar: Often overlooked are opportunities available to non-profits (churches, schools, other NP facilities) that can install solar by deploying the same solar power purchase agreement (PPA) to finance projects at their own locations; receive a fixed cost of power; and eventually own the system - generating their own power over an extended period. There are developers who specialize in developing solar projects for NPs, including the funding mechanism.	<i>Financial structures such as PPAs are explored in the SEPs under Financial Structure Details. Schools are regulated by the state and have separate programs for participation. Some engagement with other public entities and non-profits was included in the SEP process. We will continue to encourage other organizations to take advantage of group purchase options available to them.</i>
5-14-2019 W. Michael Hackett	Goleta – Comment on Community Outreach: Educating commercial and multi-family property owners and residents about the benefits of solar and available financing options is critical in achieving the community wide 100% RE goal. Forums which	<i>This has already been addressed above (see One-Stop Shop Concept Strategy 6.5.1).</i>

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	address these issues will also help identify and solidify potential solar sites and move owners and others to support the City's Plan. Essential stakeholders for outreach would include the City's largest commercial property owners/investors, Chamber, local environmental groups/individuals, HOA organizations, non-profits, and others who have expressed interest in solar or would benefit directly or even indirectly from a well-planned project(s).	
5-14-2019 W. Michael Hackett	Goleta – Comment on Priorities: We would recommend, once the Council formally approves the SEP, the City move quickly to the implementation stages - first on solar for the Library - a project demonstrating the City's commitment and viewable by all residents; and, second with community forums designed and promoted to reach particular stakeholder groups as referenced above and in the Plan. Targeted outreach would narrow the issues for each forum and enhance prospects for positive and more immediate outcomes, including commitment and timely installation of projects.	<i>It is recognized the City should continue to take steps to lead by example with its own facilities and operations that will help provide community-wide visibility and build momentum in SEP implementation. The SEP includes a detailed technical assessment and financial analysis of potential solar photovoltaic (PV) project development opportunities at sites owned by the City of Goleta, including the Library and recommends under Strategy 4.7.1.2, a Public Power Pool as one way to take advantage of the current ITC while it lasts by enabling multiple public agencies to proceed with procurement before the planned ITC step-down. The City Council will provide direction on implementation priorities.</i> <i>With regard to community forums, information on various events could be made available through the One-Stop Shop, which would act as the main hub and point of contact for information for all new programs and policies implemented due to SEP</i>

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		<i>recommendations (Strategy 6.5.1). As an example of a forum to reach particular stakeholder groups, key commercial property owner stakeholders expressed interest in participating in quarterly learning sessions with renewable energy developers, with facilitation by the City, consistent with the comment.</i>
5-29-19 Bill Shelor	<u>Goleta – Comment on Coordination of City Boards & Commissions:</u> A significant number of development projects in Goleta are reviewed by various City Boards and Commissions (Planning Commission, Design Review Board, and Parks and Recreation Commission). In order to maximize the impact these Boards and Commission should have on promoting the priorities of the City Council, I would like to suggest that all Board and Committee members (and the staff that support them): 1. be made fully aware of the City Council resolution to move expeditiously to 100% renewable energy 2. be oriented on the considerable planning efforts that are currently being undertaken to implement the City's GHG reduction goals. Each of these Boards and Commission should be required to consider this City Council priority during concept review, project design review, and project approval.	<i>We agree with the important role that City Boards & Commissions will play in implementation of the Strategic Energy Plan. After adoption of the plan, currently scheduled for July 16, Goleta can do a formal roll-out and inform City review bodies and supporting staff of the priorities discussed in the plan. This is one of the first steps in implementation of the plan.</i>

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	When appropriate, incorporation of PV should be a condition of project approval, and should only be waived if the applicant can prove infeasibility. Planning staff should work closely with all projects applicants during the initial consultation phase to ensure applicants are fully aware of the City's GHG reduction priorities.	
6-12-19 George Relles	Goleta – Comment on Need for Residential Efficiency and Demand Response: Similar to efforts undertaken in response the drought, the City should highlight the importance of residential energy conservation and incentivize residential energy efficiency efforts and reduction in usage during peak load times. Ideas (some from Advance Energy Economy) include; • Offer incentives for energy usage during off-peak times (for electric vehicles) • Promote more solar & selling power back to grid • Install smart appliances operating on timers that prioritize off-peak usage The City should also use outreach to communicate successes to the community.	<i>The concepts discussed are all important aspects of a renewable energy future. Section 6.5.1 of the Goleta SEP discusses the concept of a One-Stop Shop that can be established to function as the main hub for communication of new and existing energy programs to the community. It can be used to promote residential participation in other SEP strategies such as financial incentives for solar or to establish new campaigns for energy efficiency. This is also the method by which the City can highlight successful energy projects and efforts and communicate the benefits to the community. Finally, the One-Stop Shop can provide resources on County and region-wide energy programs, such as the residential and multi-family energy efficiency programs slated to be offered by the newly formed Tri-County Renewable Energy Network (3C-REN).</i> <i>Some residential efficiency and demand response programs, while supported by the City, are, without the formation of a CCE program, beyond the City's scope. Incentivizing off-peak charging for electric vehicles is an example of an effort best</i>

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		<i>advance by the electric utility or CCE. Section 6.5.2 of the SEP includes discussion of the City's ability to advocate for its priorities at the state and federal level.</i>
6-6-19 Doug Small	<u>Goleta – Comment on Identification of Sites:</u> <u>Inquired about how to find land that is available and suitable for renewable energy projects. Are the cities of the County the best avenue to inquire through?</u>	<i>A priority of the SEP process, particularly for the County, is identification of viable sites for large-scale renewable development. The project identified a list of private sites. However, due to privacy concerns, the contact information and details of these sites will not be released without permission from the landowners. The County SEP is the best place to review the site list and will include any private sites that have given permission for public release. The County SEP includes all sites in Goleta and Carpinteria, as well as sites in unincorporated communities.</i>
5-6-19 Jonathan Kevles (Amaresco)	<u>County – Comment on County-wide Load & Demand:</u> <u>What is the County-wide electricity usage and peak demand, particularly in relation to the renewable potential identified.</u>	<i>The County SEP focused on identification of renewable generation potential, barriers to development of this potential and siting opportunities for this potential. The type of energy system planning for which electricity usage, peak demand and coincident generation would be a foundation of was not a part of the project scope.</i> <i>However, given the 100% renewable energy goal passed by Goleta, electricity load was projected, and the impacts of the SEP strategies modeled, and included in the Goleta SEP.</i>

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5-6-19 Jonathan Kevles (Amaresco)	County – Comment on electricity usage at Critical Facilities: <u>Given the focus on resilience, are there figures showing the electricity usage at critical facilities to provide an idea of the generation needed to keep them running during emergencies?</u>	<i>The urgent importance of reliable, clean generating resources to sustain critical facilities during disasters is acknowledged and should not be shortchanged. Identification of critical facilities and granular planning for how to keep those facilities operating is the core issue to address in the Energy Assurance Plan discussed in the County SEP (Section 3.5.3 & 5.4.1) and both City SEPs.</i>
5-6-19 Jonathan Kevles (Amaresco)	County – Comment on solar potential methodology: <u>Does the solar potential methodology include any consideration of on-site load that would limit development potential?</u>	<i>The solar potential statistical methodology does not directly consider on-site load as a constraint. However, the methodology does apply fairly stringent participation factors that reduce the potential estimates and are intended to encompass many constraints, with on-site load being one of them.</i>
5-6-19 Jonathan Kevles (Amaresco)	County – Comment on RES-BCT: <u>It would be helpful to mention the Investor-owned Utilities (IOU's) Renewable Energy Self-Generation Bill Credit Transfer (RES-BCT) Program given the significant room left in the programs for both SCE & PGE.</u>	<i>RES-BCT is a program offered by California's three IOUs that allows local governments to generate renewable energy at one facility and receive a bill credit for that generation at other facilities that do not have renewable energy generation systems. RES-BCT was considered as a strategy to maximize renewable development at County owned sites. The County and the Cities are aware of this as an option when developing their own sites, pending the economic viability.</i> <i>The possibility of RES-BCT being leveraged through a public - private partnership was also discussed throughout the project but more research is needed.</i>

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5-6-19 Jonathan Kevles (Amaresco)	County – Comment on biogas potential: Is methane capture at closed landfills in the County an opportunity?	<i>Methane capture is currently being used to generate energy at the Tajiguas Landfill.</i>
5-6-19 Jonathan Kevles (Amaresco)	County – Comment on Biomass: <u>It might be useful to acknowledge the controversy around using biomass as an energy source due to its potential to be used for other purposes such as conversion to high quality compost for carbon sequestration</u>	<i>The competing uses for biomass are acknowledged in the County SEP (Section 2.4.3) and the availability of biomass as an energy resource is considered in the underlying data used to assess potential.</i>

ATTACHMENT 3

May 15, 2019 Workshop Feedback

Goleta Strategic Energy Plan Workshop – 5-15-19 – Compiled Feedback

Strategies

To solicit feedback on strategies identified in Goleta's Strategic Energy Plan, City staff provided handouts with strategy descriptions from the plan to workshop attendees. Attendees were encouraged to discuss how well these strategies addressed the needs of the community and provide feedback on their implementation. These questions were answered in small table group sessions at the workshop. Answers were anonymously written on paper handouts and collected after the event.

Please provide us with feedback on the strategies below. Do the strategies listed and described address the needs of our community well? Which needs are not being met?

New Community Financing Mechanisms (Property Assessed Clean Energy & On-Bill Financing)

- On-Bill Financing requires utility buy in, which we don't have at the moment
- These options don't necessarily provide solutions for the renting population of Goleta, who also need access to energy efficiency upgrades
- Consider a battery storage lease, where large building owners could lease some space (a few parking spaces) to a third party to develop backup battery storage on site
- These financing mechanisms would work best if they were targeting the commercial property owners, like an emPower program for commercial buildings in the area
- Having a CCE program would be helpful in establishing these financial mechanisms

Financial Incentives to Increase Economic Payback

- Reducing permitting fees can help incentivize the development of solar and storage
- This would need an extensive marketing campaign that should be media driven through businesses and schools in the area
- Consider building incentives for providing battery storage like allowing more development/denser development or allowing fewer required parking spaces
- This strategy might require regional collaboration, possibly with UCSB and other local governments, to lobby the state to provide potential funding for these incentives
- Utilize a revolving loan fund to develop funds for energy efficiency projects
- This would be easier to achieve if we have an established CCE

Develop a Community Solar Project

- This program could open up solar to a large group of people who can't typically access it (renters, low income)
- This would be more accessible if we had CCE in the region
- School sites would be a great candidate for a community solar project
- This strategy would receive a lot of community interest and support
- Develop solar in the commercial/industrial and already built environments
- Make the project visible, allows for people to see the value in solar development
- Hospitals in the area would make great candidates for a solar project

- Utilize a third-party model to lease a property for placement of solar, this can generate revenue for the site owner (schools, building owners)

One-Stop Shop to Promote Education Efforts

- A lot of resources on energy already exist online, make them accessible from a singular place and be sure to advertise
- This resource would have to also provide substantial information for commercial property holders, as we cannot reach the city's goal without their buy in and help
- Recommendation to use email for outreach as many in the area are still not connected through social media
- This would require regional input and a regional commitment to maintaining/updating the site
- A resource like this is only as valuable as people are aware of it, we need a large, coordinated effort to get the word out and dedicated staff who are familiar with the resources at each jurisdiction

Community Outreach

Goleta staff provided several examples of different ways that the City could engage the public throughout the implementation process of the Strategic Energy Plan. As the City is taking a lead-by-example approach, staff asked attendees to identify what public-facing projects they might like to see and where they should be located in the City, in addition to identifying the best ways to educate the community on Strategic Energy Plan progress. These questions were answered in small table group sessions at the workshop. Answers were anonymously written on paper handouts and collected after the event.

Demonstration Project Ideas

What type of demonstration project would you like to see? Where would be an ideal location in Goleta for a demonstration project?

- Solarized schools with backup storage to use a demo in emergency situations
- Jonny D. Wallis Park community solar project; solar on sunshades at the new park
- Fire Station 10 solar and backup battery project
- Install solar on new Library and provide an educational panel inside the library on the project
- Installing solar on school properties and using those projects as an educational opportunity for kids and their parents
- Partner with Target to get solar on their new store
- New train depot should incorporate solar
- Community solar project in a prominent location
- Aggregate through PPAs with school district

Education and Engagement

What is the best way to engage and educate the community during strategic energy plan implementation?

- City Website
- Facebook Page
- Santa Barbara Independent
- School curriculum associated w/potential solar projects on their properties
- Promote PR more consistently
- Partner with local nonprofits for educational events and outreach
- Host a climate film festival – locations at the Granada, local library, Arlington theater
- Utilize the sustainability summit as an opportunity to inform community about city projects
- Presentations to PTAs, CoGs and other local groups

Larger Group Discussion – Community Priorities

Throughout the Strategic Energy Plan development process, Goleta and the participating local jurisdictions have been gathering feedback on community priorities and goals for clean energy development. The City of Goleta then solicited feedback on the previously identified community priorities and goals for Strategic Energy Plan development and implementation, hoping to identify any missing goals or priorities. These priorities were identified in an open discussion with all workshop attendees and recorded by City and Optony staff.

What are the most important goals for the Goleta community in the Strategic Energy Plan? Are there any additional goals or priorities that you think we should highlight that would benefit the community?

- Public Safety, particularly for streetlights and signals; outages will be more common; also as it relates to moving away from natural gas
- Resilience – as it relates to upholding a basic quality of life during extreme events
- Self-Reliance/Independence – an emphasis on microgrids and meeting all of our local energy needs with local generation and storage
- Urgency – we must recognize the climate crisis we are currently in and act quickly to address our emissions
- Collaboration is essential to achieving our goals, with businesses, community-based organizations, and other jurisdictions
- Prioritization with cultural facilities that provide services to the community
- Development of school properties and as an outreach mechanism; establish curriculums the include energy education
- Advocacy with utilities is necessary to get what we want and need accomplished

General Feedback

- Consider pursuing and adopting reach codes
- Consider adopting more elastic code to be flexible with the changing technological landscape
- Streamline the permitting process, reduce the costs of permitting, and expedite deadlines for solar projects
- The city should be taking into account the urgency of the current climate crisis when implementing the Strategic Energy Plan, we don't have time to wait
- Vocal interest in the development battery storage during presentation – costs, safety, feasibility