TECHNICAL ADVISORY COMMITTEE WORKBOOK

Comprehensive Renewable Energy Plan
County of San Diego

Draft/Deliberative Process

8/12/2016

This page intentionally left blank

Table of Contents

Introduction

Thank you for participating in the upcoming Technical Advisory Committee (TAC) Meeting for the County's Comprehensive Renewable Energy Plan (CREP). Your participation in the TAC is essential to shaping potential renewable energy policy options that County staff will bring to the County Board of Supervisors for consideration. We appreciate your input from the October 2014 and January 2015 TAC Meetings, and look forward to hearing from you again!

The County's CREP is an important step in identifying the most effective tools to promote renewable energy. We made significant progress on the project, and provided the Draft Phase I Report to the TAC on April 30, 2016. We look forward to your feedback during the next TAC Meeting, which is scheduled for August 17, 2016.

We will use information gathered in the August 17th meeting as input for our Staff Report to the Board. Our goal is to return with a Staff Report to the Board for policy direction in late 2016 or early 2017.

Workbook Purpose and Function

County staff has composed this workbook for TAC Members to brainstorm on the level of effectiveness of the renewable energy measures provided in the consultant's Draft Phase I Report. The workbook will streamline the August 17th TAC Meeting by helping you organize your thoughts on each potential measure in advance.

This workbook summarizes each of the 16 potential renewable energy measures as they are organized and presented in the consultant's Draft Phase I Report. The workbook also provides a space for you to write your feedback in preparation for the TAC Meeting.

The workbook is divided into two components as follows:

Recommendation Summary	TAC Feedback
• Description • Related Action Items • Potential Pros/Cons	• Topics to Consider • Input • Priority Evaluation

Some topics we would like you to consider when evaluating each potential measure are listed below.

- **Economic Implications** (i.e., costs, benefits, workforce changes, or market and industry trends, etc.)
- **Environmental Implications** (i.e., greenhouse gas emissions reductions, etc.)
- **Social Implications** (i.e., quantity, type and accessibility of options for consumers or residents, behavior change, etc.)
- **Implementation Mechanism** (i.e., climate action plan measure, legislative action, County initiative, etc.)
- **Potential Outcome** (i.e., the anticipated return on investment for the County)

During the next TAC Meeting, we would like you to identify the priority recommendations based on your evaluation, experience and expertise. Finally, please also let us know if you have potential options for County staff to consider that are not represented in the consultant's Draft Phase I Report.

CREP and CAP Relationship

The County's CREP and Climate Action Plan (CAP) efforts are separate but related projects. Increasing renewable energy use is one of many actions the County can take to reduce greenhouse gas (GHG) emissions and is one component of climate action planning. We are in the initial outreach phase of the County's CAP, which is the long-term, programmatic approach to reducing greenhouse gas emissions from unincorporated communities. We plan to provide a CAP and associated Environmental Impact Report (EIR) for Board adoption and certification in late 2017.

We have the opportunity to provide recommendations and strategies on the renewable energy component of climate action planning in advance of adopting a formal CAP – which helps streamline our CAP efforts and is unique from many other jurisdictions. We are taking advantage of this opportunity by aligning CREP and CAP project milestones.

For example, Ascent Environmental is the contractor responsible for preparation of the CAP and associated EIR, including the GHG baseline inventory, projections and reduction targets. The difference between the GHG projections and reduction targets is called the CAP "gap analysis." Ascent is also responsible for preparing a report that summarizes how the CREP findings align with and/or address the renewable energy component of the CAP "gap analysis".

We are also providing CREP status updates to the public during CAP stakeholder meetings, visioning sessions and public workshops. Simultaneously, we would like TAC input on specific measures in the CREP Draft Phase I Report that would be most effective in increasing renewable energy.

Next Steps

Thank you for your efforts! Through your participation, County staff will develop renewable energy findings and recommendations for the Board's consideration – in line with the Board's direction from September 2013.

Draft Phase I Report Potential Options for Consideration

Please refer to the pages that follow.

1. Amend the General Plan by Adding an Energy Element

Recommendation Summary

The General Plan expresses the County's development goals and embodies public policy relative to the distribution of future land uses, both public and private. The state does not mandate a designated Energy Element. The Governor's Office of Planning and Research State of California General Plan Guidelines recommends inclusion of energy considerations in the General Plan. *See CREP Section 5.3 for more information.*

Related Action Items

a. Introduce a new Energy Element to the General Plan
b. Approach the California Energy Commission (CEC) about funding CREP-related policy work, while working with the five counties that received 2013 funding from the CEC for renewable energy policy improvements, and evaluate their applicability in the County of San Diego

Potential Pros and Cons:

Pros	***Cons***
• Consolidates energy production and consumption policies • Supplements priorities in mandated chapters of the General Plan • Reflects commitment to social, economic, and environmental management • CEC awarded grants of $600K-$700K to five counties for their Energy Element related work	• Staff time and resources • Start-up and implementation costs

1. Amend the General Plan by Adding an Energy Element

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome/Return on Investment

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

2. Establish a New Office of Sustainability

Recommendation Summary

A local Office of Sustainability is a centralized authority responsible for developing and implementing sustainability programs and policies that advance energy, economic, and environmental priorities. *See CREP Section 5.4 for more information.*

Related Action Items:

a. Consolidate energy related programs within an Office of Sustainability.
b. Consider an Office of Sustainability as a potential implementer of the CREP and Climate Action Plan (CAP)
c. Consider extending and transitioning the CREP Technical Advisory Committee (TAC) as a formal advisory body to a new Office.

Potential Pros and Cons:

Pros	***Cons***
• Reflects commitment to social, economic, and environmental management • Links County to public • Focuses on energy and water saving • Centralizes data collection • Cost savings from consolidation and centralization • Common theme or messaging • Increases attention from funding entities	• Staff time and resources • Start-up and implementation costs

2. Establish a New Office of Sustainability

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome/Return on Investment

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

3. Establish Institutional Capacity (CCA, DA, SEU)

Recommendation Summary

Institutional arrangements can be thought of as the organizational and/or administrative entities that help foster investment in Renewable Energy/Energy Efficiency. The Institutional arrangements examined in the CREP Report are:

a. Community Choice Aggregation (CCA) allows city and county governments to aggregate or pool electricity customers to purchase and develop power, as well as to administer energy programs on behalf of their residents and businesses.
b. Direct Access gives retail customers the choice to purchase electric power directly from an independent electric service provider (ESP) rather than only through an investor-owned utility (IOU).
c. A Sustainable Energy Utility (SEU) is created through legislation to establish an organization to administer financing programs, offer technical services, and coordinate the services of private Energy Service Companies (ESCOs) and financial institutions.
See CREP Section 4 and 5.5. for more information.

Related Action Items:

a. Authorize the development of a CCA feasibility Study
b. Support enhanced customer choice through an expanded Direct Access
c. Explore the formation of a Sustainable Energy Utility 'light' model

Potential Pros and Cons:

Pros	***Cons***
Community Choice Aggregation (CCA) • Increases renewable energy sources • Reduces GHGs • Increases consumer choice of energy source • Enables County control over electricity generation, consumption and revenue. • Enables SDG&E to continue to deliver power, maintain grid, and provide billing and customer services	• Start-up costs estimated to be between $1-3 million for political, engineering, legal, and financing needs • Relies on high customer participation • Is vulnerable to market risks
Direct Access (DA) • Increases consumer choice of energy source • Reduces GHGs	• Staff time and resources • Implementation costs • Is not available to residential customers • Capped enrollment • Limited control
Sustainable Energy Utility (SEU) • Increases investments in energy efficiency and customer sited renewables • Creates jobs in construction, project engineering, and building management • Single point of contact for helps avoid confusion and reduce admin costs. • Generates revenue	• Staff time and resources • Start-up and implementation costs • Traditional model requires enabling legislation

3. Establish Institutional Capacity (CCA, DA, SEU)

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome/Return on Investment

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

4. Establish Financial Capacity (PACE, Bonds, Lending/Crowdfunding)

Recommendation Summary

A financial mechanism is a tool for directing capital for investment and subsequent deployment of energy efficiency and renewable energy systems. *See CREP Section 4 and 5.5 for more information.*

Related Action Items:

a. Support and promote Property Assessed Clean Energy (PACE)
b. Harness capital through federal bond programs and municipal bond issuance
c. Explore a public-private partnership with a peer-to-peer lending entity to establish a renewable and energy efficiency specific lending program

Potential Pros and Cons:

Pros	*Cons*
Property Assessed Clean Energy (PACE) • Helps property owners overcome barrier of high up front energy equipment installation costs • Provides accessible energy efficiency and renewable energy information and educational programs • Available to County residents	• Staff time and resources • Implementation costs
Municipal Bonds • Tax exemptions • Lower interest rates • Does not require electoral assent • Bonds can be repaid through savings • High Impact	• Staff time and resources
Peer-to-peer Lending/ Crowdfunding • Low Cost, easy, efficient • Harness distributed capital throughout the region • Allows residents to have a sense of ownership in energy investment	• Staff time and resources • Start-up and implementation costs

4. Establish Financial Capacity (PACE, Bonds, Lending/Crowdfunding)

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome/Return on Investment

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

5. Develop a Solar Energy Workforce Development Initiative

Recommendation Summary

Workforce Innovation and Opportunity Act funds directed to the County of San Diego can be more valuable (and spent with full federal and state support) if the County directs them toward renewable energy jobs (and not just energy efficiency jobs) as part of a new clean energy sector approach. The County can work with local partners on a major, sector-driven approach to workforce development that focuses on the needs of regional employers within the renewable energy industry. *See CREP Section 5.6 for more information.*

Potential Pros and Cons:

Pros	***Cons***
• Creates jobs • Reduces industry costs	• Staff time and resources • Start-up and implementation costs • Budgets for leading renewable energy workforce training programs range from $500,000 to $8.5 million

5. Develop a Solar Energy Workforce Development Initiative

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

6. Build an Energy Assurance Plan

Recommendation Summary

An Energy Assurance Plan (EAP) is an emergency management plan that ensures that key assets within the community will remain operational in the event of a power outage. *See CREP Section 5.7 for more information.*

Related Action Items:

a. Identify actions and renewable energy projects that can mitigate the negative impacts of energy disruption on the County's key assets.
b. Continue working with SDG&E and others to identify all renewable energy generation opportunities with County facilities.
c. Make the EAP a major priority within any new Regional Energy Network (REN) that the County may join.

Potential Pros and Cons:

Pros	***Cons***
• Mitigates negative impacts of energy disruption • Determines ways to reduce energy demand and make energy supply more resilient • Secures energy supply in emergencies • Supports public health	• Staff time and resources • Start-up and implementation costs • Estimated budget: $250,000

6. Build an Energy Assurance Plan

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

7. Increase the County's Percentage of Energy Derived from Various Renewable Energy Technologies

Recommendation Summary

The County is capturing 2.3 percent of its annual electricity needs through a number of small PV systems at local parks and recreation centers as well as through a Power Purchase Agreement (PPA). *See CREP Section 5.8 for more information.*

Related Action Items:

a. Analyze the long term costs and benefits of increasing the percentage of electricity derived from renewables to a higher percentage
b. Investigate opportunities for small-scale wind energy projects at County facilities and in the community
c. Work with the Center for Sustainable Energy (CSE) and other appropriate partners on a major new community renewable energy outreach program, aimed at meeting already published County and community goals.
d. Review the current solar hot water heater permit process and considers ways to further streamline and expedite.
e. Work closely with the cities of Carlsbad and Chula Vista and discover how they were able to achieve success with solar thermal technology.

Potential Pros and Cons:

Pros	***Cons***
• Reduces greenhouse gas emissions • Controls utility costs • Achieves local, state, and federal emissions targets	• Staff time and resources • Start-up and implementation costs

7. Increase the County's Percentage of Energy Derived from Various Renewable Energy Technologies

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

8. Establish a Renewable Energy Group Procurement Initiative

Recommendation Summary

A renewable energy Group Procurement Initiative (GPI) is a regional, multi-agency collaborative purchase of renewable energy equipment for public agency facilities (e.g., city halls, fire stations, libraries, community centers) such as rooftop solar photovoltaic (PV) panels. *See CREP Section 5.9 for more information.*

Related Action Items:

a. Establish a relationship with government and private sector leaders of the Silicon Valley Renewable Energy Project (SV-REP) and research the costs and benefits and lessons learned from its Group Procurement Initiative experiences
b. Conduct a feasibility study of a renewable energy Group Procurement Initiative under Community Choice Aggregation (CCA) scenarios
c. Add a Group Procurement Initiative as an early potential project for the potential new Regional Energy Network (REN) under discussion
d. Analyze how a Group Procurement Initiative would work within a County-led microgrid project
e. Encourage SANDAG to pursue a Group Procurement Initiative for its member jurisdictions and local renewable energy industry leaders
f. Evaluate the feasibility of including Tribal members in a new County-led Group Procurement Initiative

Potential Pros and Cons:

Pros	***Cons***
• Economies of scale • Lower transaction costs, staff time, organizational burden • Reduces redundancies • Increase purchasing power • Reduces project cost and risks • Attracts quality vendors • 10-15% reduction in energy cost compared to individual projects • 75% reduction in transaction and administrative time for participants • Generates economic benefits, including possibly tens of millions of dollars in economic activity • Creates jobs	• Estimated budget is 0.5 FTE for the first three months, then 10 hours per month for the remaining 1-3 years. • Staff time and resources • Start-up and implementation costs

8. Establish a Renewable Energy Group Procurement Initiative

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

9. Participate in the Creation of a New Regional Energy Network (REN)

Recommendation Summary

A Regional Energy Network (REN) is a formal collaboration between local governments, in which they act as energy efficiency program administrators. A REN is eligible to design and implement energy efficiency programs, and can submit proposals directly to the California Public Utilities Commission. *See CREP Section 5.10 for more information.*

Related Action Items:

a. Approach the CPUC as a third pilot REN as planned with SANDAG as lead, but also evaluate opportunities for a new County-led renewable energy focus as supplement.
b. When developing the REN, identify opportunities for the County to receive renewable energy program funds through the organization separately (while keeping with the spirit and intent of the new REN).
c. Exclude specific renewable energy programs that the County is already pursuing from the REN (i.e., the County may want to lead on specific programs and this is one way to help guarantee that possibility).
d. Continue to participate in REN development opportunities in the San Diego region.

Potential Pros and Cons:

Pros	***Cons***
• Funding resource outside IOU • Formalizes the County's commitment to energy-related goals and objectives • Shares best practices and encourages innovation • Strengthens voice and message • Reduces redundancies	• Staff time and resources • Start-up and implementation costs

9. Participate in the Creation of a New Regional Energy Network (REN)

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

10. Develop a Renewable Energy Overlay Zone

Recommendation Summary

Overlay zoning is a regulatory tool used to expedite the planning process for renewable energy projects. Implemented by amending the existing zoning code, an overlay zoning ordinance provides a supplemental layer of regulations for purposes of renewable energy development. *See CREP Section 5.11 for more information.*

Related Action Items:

a. Define the purpose of the overlay zone district (supporting renewable energy development);
b. Identify the areas that make up the overlay zone district; and
c. Develop specific rules that apply to the identified overlay zone district (specify the streamlined permitting process, if applicable, and expectations of the developers and the County).

Potential Pros and Cons:

Pros	***Cons***
• Reduces cost and time for processing renewable energy projects • Saves developers time and money • Balances industrial-scale renewable development and long-term environmental impacts • Addresses community priorities like permitting, environmental protection, avoidance of ag lands, proximity to infrastructure, and adjacency to distributed generation users	• Staff time and Resources • Start-up costs are approximately $100-250K

10. Develop a Renewable Energy Overlay Zone

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

11. Develop a Building Energy Disclosure Program

Recommendation Summary

Building energy disclosure involves the analysis and documentation of a building's energy performance as a way to drive improvements in energy efficiency and reduce energy use. One of the major goals of this policy is to incorporate a home or commercial building's energy performance into its overall value. *See CREP Section 5.12 for more information.*

Related Action Items:

a. Incorporate building water efficiency data into potential disclosure policies
b. Take inventory of the number and types of commercial buildings in the County and research the potential impact that incentives play in disclosure policies
c. Start and maintain a database of public and private sector building energy performance to aid in identifying opportunities to cut GHG emissions
d. Reward public disclosure of building energy consumption through a County-led contest
e. Follow building disclosure developments in San Francisco and Berkeley

Potential Pros and Cons:

Pros	***Cons***
• Buyers access property data • Sellers distinguish themselves from similar homes on the market	• Staff time and resources • Start-up and implementation costs • At least one full-time employee is required for implementing a disclosure policy and providing ongoing program support • Costs can be significant to the homeowner if extensive upgrades are needed • For commercial and large multi-family buildings, building energy and water benchmarking costs fall on building owners and can range widely depending on building type

11. Develop a Building Energy Disclosure Program

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

12. Promote More Aggressive Building Standards Including the Significant Retrofit of Existing Buildings

Recommendation Summary

Building energy efficiency standards in California are designed generally to ensure new and existing buildings achieve energy efficiency, and preserve outdoor and indoor environmental quality. Energy codes set minimum standards and define the least-efficient buildings (public and private) that should be constructed. *See CREP Section 5.13 for more information.*

Related Action Items:

a. Create a new Zero Net Energy (ZNE) definition and policy for the County, which has firm goals around ZNE commercial and residential market penetration (e.g. 50 percent of all residential new construction should be ZNE by 2025 or a future date).
b. Create a ZNE competition with architects for County, commercial, and residential buildings.
c. Collaborate with the building industry through industry-specific training and limited financial incentives to achieve above-code energy efficiency levels or ZNE levels in a target segment of the market (e.g., existing homes in unincorporated San Diego County)
d. Work with the San Diego Regional Electric Vehicle Infrastructure (REVI) Working Group and others to adopt/update language to include prewiring of residential and commercial buildings for electric vehicles

Potential Pros and Cons:

Pros	***Cons***
• Creates market solutions • Provides building professional training • Costs to implement standards can be recovered through energy savings • Reduces greenhouse gas emissions	• Staff time and resources • Start-up and implementation costs • Building Standards add approximately $2,300 to the cost of constructing a new home

12. Promote More Aggressive Building Standards Including the Significant Retrofit of Existing Buildings

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

13. Increase Renewable Energy Education and Outreach

Recommendation Summary

Education and Outreach (E&O) efforts are often considered a separate, distinct program area since they tend to cut across multiple sectors (e.g., buildings, utilities, transportation, and agricultural). *See CREP Section 5.14 for more information.*

Related Action Items:

a. Update the County's website and make it a more appealing gateway to renewable energy efforts underway in the County
b. Set-up educational renewable energy kiosks at strategic locations across the County to educate employees
c. Centralize all County energy-related E&O efforts in one office, such as a new Office of Sustainability recommended in this report
d. Design a new E&O program for issues that have traction and meaning for County residents, such as electric vehicles or solar photovoltaics (PV)
e. Use the County of San Diego's County News Center for renewable energy education and outreach efforts, focusing on short video stories to begin
f. Closely examine the sustainability portions and content of Alameda County and Sonoma County websites
g. Consider creating a mobile phone app such as Green Oceanside (Oceanside, CA), or Rethink (Austin, TX), which provides updated sustainability-related information and resources to residents and links to social media. These two-way smart phone applications allow the County to educate the public, while also allowing the public to communicate with the County
h. Collaborate with the Center for Sustainable Energy and SDG&E to leverage their marketing, education, and outreach capabilities

Potential Pros and Cons:

Pros	***Cons***
• Educates public policy makers and citizens about what is possible • Increases funding opportunities • Encourages innovation • Increases customer uptake	• Staff time and resources • Start-up and implementation costs • Costs can range from $10,000 to $1 million

13. Increase Renewable Energy Education and Outreach

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

14. Starting a Community Solar Initiative

Recommendation Summary

Community Solar is recognized as an innovative approach to reducing greenhouse gas (GHG) emissions and lowering the cost of solar photovoltaics (PV) electricity through economies-of-scale. Community Solar helps avoid the traditionally high upfront costs of solar by spreading the investment among many players. *See CREP Section 5.15 for more information.*

Related Action Items:

a. Encourage Community Solar electricity rates that are at or below the cost of similarly-sized residential solar PV systems
b. Consider how the County can become a subscriber to a Community Solar system and how it could profit from managing Community Solar installations, such as through leasing county land/space to developers or investing in its own Community Solar PV installations
c. Allocate/reserve a portion of any new Community Solar project to low-income customers (for example a 5 percent set-aside)
d. Get involved in the implementation and regulations discussion stemming from SB 43 in the near future, looking for ways to make Community Solar work in the County

Potential Pros and Cons:

Pros	***Cons***
• Limits upfront costs of solar • Makes sites with high solar potential more viable • Supports solar industry • Reduces utility transmission and distribution costs • Compatible with CCA or with out • Keeps revenue within the County • Reduces greenhouse gas emissions	• Staff time and resources • Start-up and implementation costs

14. Starting a Community Solar Initiative

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

15. Establish a Microgrid and Develop Policies Related to Microgrids

Recommendation Summary

A microgrid is a self-contained power system set up for a small geographic region. It usually has one or more power sources (often renewable), advanced energy storage, and an intelligent energy management system. Microgrids tend to be cleaner and more efficient than traditional power sources because they often utilize solar, wind, and/or combined heat and power (CHP) to generate power. *See CREP Section 5.16 for more information.*

Related Action Items:

a. Take an active role in the recently announced microgrid project in Borrego Springs and study evolving ownership models.
b. Partner with SDG&E and the University of California San Diego on microgrid policy development.
c. Identify all potential low-temperature geothermal sites in the County that may be able to be tied-into a microgrid.
d. Study expected load growth in the County and identify potential sites where a microgrid may be ideally suited.

Potential Pros and Cons:

Pros	***Cons***
• Can automatically disconnect and continue to operate if the main grid fails • Increases efficiency • Increases security and safety • Reduces greenhouse gas emissions	• Staff time and resources • Start-up and implementation costs • 1 FTE for up to 2 years and ½ FTE after 2 years

15. Establish a Microgrid and Develop Policies Related to Microgrids

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**

16. Establish Electric Vehicle Programs

Recommendation Summary

According to a 2015 report, worldwide revenue from electric vehicle charging services is expected to grow from $152.6 million annually in 2015 to $2.9 billion by 2023, while sales of EV charging systems are expected to grow steadily in the coming years, surpassing 2.5 million by 2023. This has important implications the County as both a user of EVs and as a potential future supplier of renewable-generated electricity. *See CREP Section 5.17 for more information.*

Related Action Items:

a. Promote the benefits of the solar- and Electric Vehicle-ready ordinance
b. Consider public EV charging stations as a future source of revenue generation, and analyze this possibility in Phase II of the CREP
c. Work closely with SDG&E on the optimum future locations for public EV charging stations
d. Create and adopt a formal PEV program working with the REVI and SANDAG
e. Encourage new multi-family buildings to include pre-wiring for Level 2 EVSE as a percentage of total spaces
f. Encourage businesses to install Level 2 EVSE charging systems for their employees.
g. Increase the number of light duty EVs in the County fleet
h. Work with incorporated towns and cities to develop standardized permitting and inspection processes as well as installation procedures for builders and contractors.
i. Work with SDG&E on its recently revealed (informal) plans to start energy storage training classes in the future, as a workforce development opportunity.

Potential Pros and Cons:

Pros	***Cons***
• Improves air quality and public health • Reduces greenhouse gas emissions • Reduces reliability on petroleum • Drivers save on fueling costs • Increases availability of charging infrastructure • Federal tax credits for EV • State and local rebates for EV	• Staff time and resources • Start-up and implementation costs

16. Establish Electric Vehicle Programs

TAC Feedback

Is this action an effective tool for promoting renewable energy? Why or why not?

Economic Implications
Environmental Implications
Social Implications
Implementation Mechanism
Potential Outcome

Please circle the priority of this measure:

Lowest 0 1 2 3 4 5 6 7 8 9 10 **Highest**