MEETING NOTICE AND AGENDA

REGIONAL ENERGY WORKING GROUP
The Regional Energy Working Group may take action on any item appearing on this agenda.

Thursday, March 28, 2013
11:30 a.m. to 1 p.m.

SANDAG 7th Floor Conference Room
401 B Street, 7th Floor
San Diego, CA 92101-4231

Staff Contact: Allison King
(619) 699-1973
Allison.King@sandag.org

AGENDA HIGHLIGHTS

• REGIONAL ENERGY EFFICIENCY GOAL AND ENERGY UPGRADE CALIFORNIA
• UPDATE ON THE SAN DIEGO REGIONAL ELECTRIC VEHICLE INFRASTRUCTURE WORKING GROUP
• 2013 SANDAG LEGISLATIVE PRIORITIES WITH AN ENERGY NEXUS

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## REGIONAL ENERGY WORKING GROUP
### Thursday, March 28, 2013

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>RECOMMENDATION</th>
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<td>1.</td>
<td>WELCOME AND INTRODUCTIONS</td>
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<td>2.</td>
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The Regional Energy Working Group (EWG) is asked to approve the February 28, 2013, meeting summary.

| 3.     | PUBLIC COMMENTS/MEMBER COMMENTS |

Members of the public shall have the opportunity to address the EWG on any issue within the jurisdiction of SANDAG that is not on this agenda. Public speakers are limited to three minutes or less per person. EWG members also may provide information and announcements under this agenda item.

### CHAIR’S REPORT

| 4.     | REPORTS ON MEETINGS AND EVENTS ATTENDED ON BEHALF OF SANDAG REGIONAL ENERGY WORKING GROUP | INFORMATION |

Regional Energy Working Group (EWG) members appointed to represent the EWG outside of SANDAG will provide brief reports orally or in writing on external meetings and events attended on behalf of the working group since the last EWG meeting.

### REPORTS

| 5.     | REGIONAL ENERGY EFFICIENCY GOAL AND ENERGY UPGRADE CALIFORNIA | DISCUSSION |

Staff will provide an overview of the energy efficiency and conservation goal from the Regional Energy Strategy as well as collaborative local government energy efficiency programs. Lindsey Taggart, California Center for Sustainable Energy, will present on Energy Upgrade California (EUC) and San Diego Regional Energy Partnership tasks to support EUC.

| 6.     | UPDATE ON THE SAN DIEGO REGIONAL ELECTRIC VEHICLE INFRASTRUCTURE WORKING GROUP | DISCUSSION |

The San Diego Regional Electric Vehicle Infrastructure Working Group (REVI) is developing best practices to address barriers to plug-in electric vehicle readiness in the region. Staff will present an update on REVI activities and ways EWG members can be more involved.

| 7.     | 2013 SANDAG LEGISLATIVE PRIORITIES WITH AN ENERGY NEXUS | INFORMATION |

The SANDAG 2013 Legislative Program serves as a foundation on which SANDAG assesses legislation. Goals 2B and 10B specifically relate to energy. EWG members are asked to recommend bills of interest that could be appropriate to monitor.
8. STATUS OF CAP-AND-TRADE INVESTMENT PLAN DEVELOPMENT INFORMATION

The California Air Resources Board, in coordination with several other State agencies, is developing an investment plan for projects and programs to be funded with cap-and-trade auction proceeds. Staff will provide the EWG with an overview of the investment plan and a timeline for its development.

9. UPCOMING MEETINGS

The next meeting of the EWG is scheduled from 11:30 a.m. to 1 p.m. on Thursday, April 25, 2013.

+ next to an agenda item indicates an attachment
FEBRUARY 28, 2013, MEETING SUMMARY

ITEM #1: WELCOME AND INTRODUCTIONS

Carrie Downey, Regional Energy Working Group (EWG) Chair, called the meeting to order at 11:38 a.m.

Chair Downey welcomed a new member, Thomas Brill, to the EWG. Mr. Brill is the Director of Strategic Planning with San Diego Gas and Electric (SDG&E).

ITEM #2: JANUARY 24, 2013 MEETING SUMMARY

Don Mosier, City of Del Mar, motioned to approve the meeting summary from January 24, 2013, and Len Hering, California Center for Sustainable Energy (CCSE), seconded the motion. The motion carried without opposition.

ITEM #3: PUBLIC COMMENTS/MEMBER COMMENTS

John Wotzka, member of the public, discussed energy-related news and provided written comments that are summarized here: Many organizations are concerned about the operations at San Onofre Nuclear Generating Station; Mesquite Solar 1 station will be coming online soon; Warren Buffet is buying Antelope Valley projects; Campo Band of Mission Indians are in a proposed project with Invenergy Wind California LLC for wind energy generation; Japan is planning to construct the largest offshore wind farm; and the United States has a large amount of natural gas and is planning on exporting it.

Chair Downey, announced that she is now the owner of a Ford C Max Energi, a plug-in hybrid vehicle, and added that the SANDAG building has three charging stations in the parking garage, which is great for people bringing their electric vehicles to EWG meetings.

Kayla Race, Environmental Health Coalition, informed members that the February 28, 2013, vote on power plants proposed by SDG&E at the California Public Utilities Commission (CPUC) has been delayed until March 21, 2013.

ITEM #4: REPORTS ON MEETINGS AND EVENTS ATTENDED ON BEHALF OF SANDAG REGIONAL ENERGY WORKING GROUP

Scott Anders, Energy Policy Initiatives Center (EPIC), gave an update on the Solar Cost of Service Study. Mr. Anders described the meetings and webinars that were held to discuss the services that
the consultant will be estimating, and the methodology used. The methodology will be refined based on feedback from those webinars and meetings. He explained that EPIC is in the final stages of data requests from SDG&E, and on March 29 there will be a follow-up webinar. All documents and webinars related to the study are accessible on the EPIC website: http://www.sandiego.edu/epic/projects/?year=2012.

Chair Downey shared that there are representatives from the CPUC at the webinars, who help to explain the differences between this study and similar studies by other organizations.

Mr. Hering expressed his concern surrounding the environmental evaluation in the study. Mr. Anders commented that the environmental evaluation is still in the works, and explained that one of the main challenges is obtaining the data used to calculate the environmental benefits. Mr. Anders further clarified that greenhouse gases are included in the study, but there are certain environmental impacts from solar installations, such as air quality, that lack accurate data and may not be included in the report. EPIC has a certain budget and timeline, and there is only a certain amount of data out there.

Thomas Brill, SDG&E, commented that a service-level accurate price signal structure provides more transparency. SDG&E is trying to create a market structure for rooftop solar in which solar owners are compensated for the value of their services provided to the utility. Once SDG&E determines the actual prices, transparent incentives can be used to promote state policy objectives. The intent of the study is to determine pricing that would allow everybody to have solar installations, and determine the incentives that allow short-term objectives for growth to be reached. Chair Downey encouraged anyone with knowledge of a methodology for determining environmental externalities to share that information.

Ms. Race asked if the study is looking for services to the grid, as well as society. Mr. Brill responded that societal benefits are in a category that is hard to quantify, and a principle of the study is the need for transparent methodology and data, even if satisfactory numbers cannot be found.

Ms. Race shared that the Environmental Health Coalition has data on public health benefits and the mentioned that the City of San Diego’s Climate Mitigation and Adaptation Plan (CMAP) has a quantitative analysis of the health impacts of transportation air pollution prepared by EPIC, and suggested that a similar quantitative analysis of health benefits should be applied to energy issues. She added that data is available from the California Air Resources Board on lost school and work days due to asthma hospitalizations. Mr. Brill responded that the CMAP could be a useful source of data and added that the area of social benefits and externalities need further discussion.

Mr. Hering suggested that the conclusions of the study point to additional studies to address those matters that are independent from the clean energy issues. He has received many emails from people concerned that this has become a very technical rate issue and that the issues and social benefits of solar are not part of the conversation.

Ms. Bensoussan voiced her support for Mr. Hering’s concerns and added that she has received similar feedback. She has been putting together a letter for her constituents, and will include a link to the comment section of the EPIC website in her emails.
Chair Downey encouraged everyone to submit comments in writing to Mr. Anders, the organizer, through the EPIC website.

**ITEM #5: CLEAN ENERGY ECONOMY**

Allison King, SANDAG, introduced the clean energy economy section of the Regional Energy Strategy (RES). She explained that the section describes the best ways to utilize the funding that was coming to the region in 2009 to stimulate job growth in the clean energy sector. Ms. King furthered explained that economic analysis on the clean tech industry in the San Diego region is now available, and would like input from the EWG on how the information can be used in the RES technical update. The economic analyses were prepared by the SANDAG Service Bureau for CleanTECH San Diego.

Jason Anderson, Vice President of CleanTECH San Diego (CTSD), gave an overview of the organization and the clean-tech industry in San Diego. He explained that CTSD recognized the need to gather people to discuss issues facing the clean-tech industry and to support San Diego as a leader in that space. Mr. Anderson presented a few market trends that CTSD had seen over the past few years.

Mr. Anderson described the database of clean-tech companies maintained by CTSD, which includes about 850 companies in the San Diego region. About half of those companies create the technology and the other half implements that technology. In 2011, CleanTECH contracted with the Service Bureau at SANDAG to complete economic impact analyses for clean transportation, solar energy, smart grids, energy efficiency, and biofuels industries in the San Diego region.

Mr. Anderson described CTSD’s role in the local solar industry, research and education surrounding biofuels, workforce development, electric vehicle deployment, and energy efficiency. He also described collaborative work between CTSD and local colleges, SDG&E, and local governments to advance these industries in the region.

Working group members provided several comments:

- Chair Downey commented that updated economic impact numbers from the SANDAG Service Bureau would help to inform the RES. She also encouraged CTSD to continue their work on pools at municipal facilities. Mr. Anderson agreed and commented that CTSD has piloted a program with private pools and will be looking to do the same for municipal pools.

- Michael Nagy, San Diego Regional Chamber of Commerce, asked if CTSD is focusing on all industries equally. Mr. Anderson responded that the organization focuses primarily on industries where San Diego is already strong. Examples of these are areas where Universities have focused research and development, utility-run programs that are going to affect the market place, or areas that CTSD members are interested in.

- Crystal Crawford, Ygrene Energy Fund, asked how the pool pumps are paid for in the CTSD pilot program. Mr. Anderson replied that SDG&E offers some rebates to offset the cost.

- Mr. Hering commented that there is new technology that includes direct current use that, along with other emerging technologies, needs to be considered.
ITEM #6: REGIONAL ENERGY STRATEGY WORKPLAN

Susan Freedman, SANDAG, presented on the workplan for the technical update of the Regional Energy Strategy. Ms. Freedman explained that the workplan would take place of the next year, so that metrics and goals can be incorporated into San Diego Forward: The Regional Plan. Ms. Freedman highlighted the other processes that are occurring in conjunction with the update, including: the Regional Plan white papers and the plug-in electric vehicle readiness plan being developed by the Regional Electric Vehicle Infrastructure Working Group.

EWG members provided several comments:

- Chair Downey commented that the EWG should try to define more specific goals for the deployment of electric vehicles and charging infrastructure. Ms. Freedman added that the original RES goal was to increase the use of alternative fuels in the region. The San Diego Regional Clean Cities Coalition and other organizations have been tracking electric vehicle usage, and also natural gas, propane, and other alternative transportation fuels. These numbers can inform the development of numeric goals and metrics. SANDAG staff will be coordinating with EPIC and CCSE to understand their analytical capabilities in this area.

- Mr. Hering commented that it is important to understand the underlying reasons for not adopting an alternative fuel vehicle. He explained that 2.5 percent of all vehicles sold in Southern California are alternative fuel vehicles, and asked why the adoption rate is not higher. He encouraged the EWG to examine why an individual that considered an alternative fuel vehicle ultimately decided not to buy one. He suggested that most answers involve the lack of infrastructure and fear of being stuck without a ride home. Mr. Hering expressed that understanding those metrics and then using them to inform the policy is very important.

- Chair Downey suggested that SANDAG include the locations of all of the alternative fueling stations on the transportation maps that the agency produces.

- Paul Manasjan, The San Diego County Regional Airport Authority, commented that the EWG should work to get commitments from local jurisdictions and others that they will do their part to get alternative fueling facilities in their jurisdiction so that there is adequate distribution of that infrastructure.

- Ms. Bensoussan shared that the City of Chula Vista is installing 33 charging stations. She added that Chula Vista staff is working to get press surrounding the installations since, often times, when big cities taking the lead on these types of projects it helps inform the public and assure industry that it is a safe investment.

- Jennifer Bradley, International Brotherhood of Electrical Workers Local 569, added that a workforce economic impact analysis should be conducted. She commented that Proposition 39 funding will be driven by work-force issues. She explained that jobs related to solar and alternative fuels are sometimes low-wage, temporary jobs. Ms. Bradley highlighted the great training programs in the region, and suggested that the EWG look to those programs for what created high-quality jobs.
Ms. Race added that, in addition to the overall jobs numbers, she would like to see what salaries are, what the benefits are, and where the jobs are geographically. She emphasized that while we want San Diego to be the number one solar city, we also want to make sure that those investments are distributed throughout the region. She commented that La Jolla has four times and Rancho Bernardo has seven times the amount of solar installations of Sherman Heights, Barrio Logan, and National City combined. For that reason, the location of installations and the potential for installations should be additional data collected.

Ms. Bensoussan added that this information would be great to include in the white paper on social equity and environmental justice policy area of the Regional Plan.

Chair Downey added that distribution is beneficial for all of the energy policy efforts. Distribution not only helps environmental justice issues, but it also helps the grid.

ITEM #7: REGIONAL ENERGY STRATEGY TECHNICAL UPDATE – EXISTING CONDITIONS

Due to a lack of time, Item #7 was not discussed.

ITEM#8: PROPOSITION 39: TAX TREATMENT FOR MULTISTATE BUSINESSES, CLEAN ENERGY AND ENERGY EFFICIENCY FUNDING, AND INITIATIVE STATUTE

Ms. Freedman introduced Proposition 39, which was a ballot initiative approved by the voters in November 2012, and will provide about $500 million for energy efficiency and alternative energy projects for schools and public agencies. She explained that several bills are being proposed in the legislature to address the allocation of this funding. The Governor’s budget directed funding primarily to K-12 schools and community colleges; however, the Legislative Analyst’s Office recently released an analysis of Proposition 39 that called into question how the funding is allocated in the Governor’s budget. She offered that the funding could be spent as a way for local governments in the region to make deep retrofits.

Working group members provided several comments:

Ms. Bensoussan commented that the City of Chula Vista has prepared a letter that they will send out to constituents and bring to council next week. She also provided a template version of the letter addressed to Assembly Member Wesley Chesbro that other local governments can use to outline recommendations for Proposition 39.

Brendan Reed, City of Chula Vista, commented that none of the current bills in the legislature allocate funding to local governments, although there have been discussions about funding for public facilities beyond schools in later years. He explained that this is one of the few pots of money available and an opportunity for local governments to access it.

Mr. Anderson commented that many are concerned about measuring the outcomes of Proposition 39 so that the value of such a program can be established. He explained that policy makers may feel that the outcomes will be easier to measure if they only fund a small category, such as schools. He suggested that it might be best to focus on buildings instead of just the type of buildings in schools to gauge outcomes, and added that picking a variety of types of
buildings, including municipally-owned buildings enables one to gauge the value of the return on investment of the actual project.

- Mr. Hering commented that if the Governor’s education budget is not enforced by the $450 million cost savings, then he has to assume that in 2015 he will have to absorb that money. He added that there needs to be an equitable way to distribute those funds so that that budget realizes the expected savings. Mr. Hering voiced the need for caution, from a state perspective as there has not been a guarantee to the Governor’s office that the $500 million from this bill will be realized in the first year of execution.

**ITEM #9: UPCOMING MEETINGS**

The next meeting of the EWG is scheduled from 11:30 a.m. to 1 p.m. on Thursday, March 28, 2013.

Alternative fuels, legislative priorities, and the cap and trade revenue are all topics for the next meeting.

Chair Downey adjourned the meeting at 1:07p.m.
# ENERGY WORKING GROUP MEETING ATTENDANCE

**February 28, 2013**

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<td>Energy Working Group Chair</td>
<td>Carrie Downey</td>
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<td>Hon. Pamela Bensoussan</td>
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<td>Hon. Sherri Lightner</td>
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<td>Hon. David Alvarez</td>
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<td>Brett Caldwell</td>
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<td>Unified Port District of San Diego</td>
<td>Michelle White</td>
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<td>Len Hering</td>
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<td>Charlie Buck</td>
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<td>Energy Policy Initiatives Center, University of San Diego School of Law</td>
<td>Scott Anders, Vice Chair</td>
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<td>Mike Evans</td>
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<td>David Lloyd</td>
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<td>Hon. Pamela Bensoussan</td>
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OTHER ATTENDEES:

Cecilia Aguillon, Kyocera
Jason Anderson, CleanTECH San Diego
Jennifer Bradley, IBEW 569
Crystal Crawford, Ygrene
Michael Genseis, member of the public
Mike Grim, City of Carlsbad
Mike Kempa, Honeywell
Dean Kinports, SDG&E
Mo Lahsaie, City of Oceanside
Richard O’Donnell, City of Escondido
Brendan Reed, City of Chula Vista
Kent Turner, Reality Driven Consulting LLC
Dinah Willier, SDG&E
John Wotzka, member of the public
Susan Freedman, SANDAG
Allison King, SANDAG
Anna Lowe, SANDAG
Sarah McCutcheon, SANDAG
Rob Rundle, SANDAG
March 28, 2013

AGENDA ITEM NO.: 5

Action Requested: DISCUSSION

REGIONAL ENERGY EFFICIENCY GOAL
AND ENERGY UPGRADE CALIFORNIA

File Number 3200700

Introduction

At last month’s meeting, the Regional Energy Working Group (EWG) discussed the workplan for a Regional Energy Strategy (RES) technical update. Each month, the EWG will discuss one or two goals, as well as program(s) that have been instrumental in making progress toward these goals. At today’s meeting, staff will provide an overview of the energy efficiency and conservation goal as well as several collaborative local government programs. Next, Lindsey Taggart, California Center for Sustainable Energy (CCSE), will provide a detailed presentation on one of these core programs: Energy Upgrade California (EUC). The EWG is asked to discuss how the impact of these programs can be evaluated in addressing the RES energy efficiency and conservation goal.

Discussion

Regional Energy Strategy

The Energy Efficiency and Conservation section of the RES is included as Attachment 1. It describes state policies and programs, projected impacts of energy efficiency measures, potential funding mechanisms, and recommended actions to promote energy efficiency and conservation. The energy efficiency goal is to:

- Reduce per capita electricity consumption in the residential and commercial sectors by 20 percent by 2030 in order to keep total electricity consumption flat between now and 2030.

Energy Upgrade California

EUC is a statewide whole-house retrofit program that connects homeowners with qualified contractors and offers rebates for energy efficient retrofits. CCSE had been convening a San Diego Regional Retrofit Advisory Council since 2010, and the EUC program launched in the San Diego region in December that year. Since then, CCSE and SDG&E have been managing EUC program components on behalf of a regional effort to achieve deep energy efficiency retrofits in the residential market. The EUC has been funded through federal, state, utility, and local government contributions. The City of Chula Vista, City of San Diego, and County of San Diego utilized American Recovery and Reinvestment Act (ARRA) of 2009 grants to add local match funds to the EUC program. Moving forward, the EUC brand will be used to refer to all statewide energy programs, beyond the residential whole-house retrofit market. CCSE’s presentation slides are provided as Attachment 2.
San Diego Regional Energy Partnership

The City of Chula Vista, City of San Diego, County of San Diego, Port of San Diego, and SANDAG have been collaborating on energy efficiency initiatives since 2010. For FY 2013-2014, these public agencies included joint energy efficiency tasks in their individual local government partnership applications to SDG&E, under the San Diego Regional Energy Partnership (SDREP).

SDREP is the funding mechanism to continue and expand the San Diego Regional Climate Collaborative, key program components of EUC, and other related efforts. Attachment 3 summarizes SDREP-funded EUC tasks that CCSE will undertake in FY 2013-2014. Attachment 4 provides specific information on the task related to continuing the Retrofit Advisory Council.

SDREP’s goals are to:

- Further develop and support regional implementation of EUC and the broader home retrofit market to facilitate deep energy retrofits.
- Assist local governments and communities in the San Diego region with understanding and implementing climate action strategies, especially related to energy efficiency.
- Facilitate the sharing of technical expertise and leveraging of purchase power between local governments to spur “deep energy retrofits” at municipal facilities across the region.

Attachments: 1. Regional Energy Strategy: Energy Efficiency and Conservation Section
   2. California Center for Sustainable Energy EUC Presentation Slides
   3. San Diego Regional Energy Partnership Tasks
   4. San Diego Regional Retrofit Advisory Council Information Sheet

Key Staff Contact: Allison King, (619) 699-1973, Allison.King@sandag.org
5.1 Energy Efficiency and Conservation

Introduction

Reducing energy use is the first priority in the state’s preferred loading order for meeting new energy needs because it can help meet future energy needs and reduce GHG emissions without significant investment in infrastructure and with little or no environmental impact. From a customer perspective, reducing energy use has direct and measurable benefits including cost savings. Energy use can be reduced by two related strategies: conservation and energy efficiency. Energy conservation refers to behavior changes that decrease energy use, such as turning off lights and changing thermostat settings. Energy efficiency includes programs that require buildings and appliances to be constructed in a manner that uses less energy, provide incentives for purchasing energy efficient equipment, and provide information and education to encourage people to save energy. Energy efficiency refers to structural changes, such as replacing appliances with more efficient models, replacing incandescent lamps with compact fluorescent (CFL) or light-emitting diode (LED) lamps, or tuning up building systems to improve their energy performance. Efficiency and conservation are necessary and complimentary.

California has promoted energy efficiency through policies and programs that require buildings and appliances to be constructed in a manner that uses less energy, provide incentives for purchasing energy efficiency equipment, and provide information to encourage people to save energy. Since the 1970s, these programs have helped keep per capita electricity consumption flat.

Energy efficiency measures for both electricity and natural gas can significantly reduce GHG emissions. Given the region’s relatively low level of industrial activity, the primary focus is on improving energy efficiency, in both the existing building stock and new construction. In particular, the existing building stock presents a significant opportunity to achieve major improvements in energy efficiency. Because buildings typically have a lifespan of several decades, it is important to build in as much efficiency as possible.

5.1.1 California Energy Efficiency Policy

Key state energy efficiency policies include:

- California’s Energy Efficiency Standards for Residential and Nonresidential
Buildings were established in 1978 and are regularly updated as relevant cost-effective improvements become available. The next update will take effect on January 1, 2010. Local government building departments are responsible for enforcing these mandatory energy efficiency standards for buildings at the time of construction.

- The California “Green Building Action Plan” was developed in conjunction with the signing of Executive Order S-20-04, the “Green Building Initiative,” in which the governor calls for state buildings to be 20 percent more energy efficient by 2015 and encourages similar private sector efforts.

- Assembly Bill 2021 (Levine, Chapter 734, Statutes of 2006), which requires an estimate of all potentially achievable cost-effective electricity and natural gas efficiency savings and establishment of annual statewide targets for energy efficiency savings and demand reduction over 10 years. AB 2021 is a key legislative mechanism for utilities to expand their energy efficiency programs.

- The Climate Change Scoping Plan, which outlines GHG reduction measures in the electricity and natural gas sectors through building and appliance standards, implementing additional conservation and efficiency programs, increasing combined heat and power (CHP), solar water heating systems, and the like.

- The California Public Utility Commission (CPUC) Long-Term Energy Efficiency Strategic Plan, which provides a roadmap to achieve maximum energy savings across all sectors in the state including local government, and identified four “Big Bold Energy Efficiency Strategies”:

  1. All new residential construction in California will be zero net energy by 2020;
  2. All new commercial construction in California will be zero net energy by 2030;
  3. Heating, ventilation, and air conditioning will be transformed to ensure that its energy performance is optimal for California’s climate; and
  4. All eligible low-income customers will be given the opportunity to participate in the low income energy efficiency program by 2020.

The Strategic Plan also specifically calls upon local governments to do the following:

- At least 5 percent of California’s local governments (representing at least 5 percent of CA total population) each year adopt “reach” (enhanced energy efficiency) codes.

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1 A zero net energy building combines building energy efficiency design features and clean onsite or near-site distributed generation of sufficient quantity on an annual basis to offset any residual purchases of electricity or natural gas from utility suppliers.

2 The CPUC is working with investor-owned utilities like SDG&E to develop a menu of strategies that local governments could implement through local government partnerships to contribute to the Strategic Plan goals.
• By 2020, the majority of local governments have adopted incentives or mandates to achieve above-code levels of energy efficiency in their communities, or have led statewide adoption of these higher codes.
• The current rate of non-compliance with codes and standards is halved by 2012, halved again by 2016, and full compliance is achieved by 2020.
• By 2015, 50 percent of local governments have adopted energy efficiency/sustainability/climate change action plans for their communities and 100 percent by 2020, with implementation and tracking of achievements.
• The Plan also identifies the following areas where local government authority can reduce energy use in new and existing buildings:
  1. Ensuring compliance and enforcement of the Title 24 energy code for residential and commercial buildings.
  2. Adopting building codes beyond Title 24’s energy requirements (and potentially other “green” requirements).
  3. Supporting highly efficient projects that voluntarily exceed minimum energy codes through favorable fee structures, fast-tracked permitting and other innovative and locally appropriate approaches.
  4. Enacting ordinances with point-of-sale or other approaches that spur efficiency actions in existing, privately-owned buildings.
  5. Applying efficiency-related “carrots” and “sticks” using local zoning and development authority.

5.1.2 California Energy Efficiency Programs

In September 2009 the California Public Utilities Commission (CPUC) issued a decision to approve energy efficiency programs for 2010 - 2012, establishing a three-year budget of $3.1 billion for Southern California Edison, Pacific Gas and Electric Company, San Diego Gas and Electric Company, and Southern California Gas Company. This is the largest commitment ever made by a state to energy efficiency. Statewide, these programs could create estimated energy savings of almost 7,000 gigawatt hours, 1,500 megawatts, and 150 million metric therms of natural gas, the equivalent of three 500-megawatt power plants and could avoid 3 million tons of GHG emissions. The funding from this decision can create between 15,000 and 18,000 skilled green jobs statewide.

The decision includes the new California statewide program for residential energy efficiency – CalSPREE – the largest and most comprehensive residential retrofit program in the country, aiming to reduce energy consumption by 20 percent for up to 130,000 California homes by 2012. The decision also funds $175 million for innovative programs to deliver zero net energy homes and commercial buildings, including design assistance, incentives for "above code" construction, and research and demonstration of new technologies and materials.
The decision also provides over $260 million in funding for 64 cities, counties, and regional agencies for local efforts targeting public sector building retrofits and leading edge energy efficiency opportunities. Over $100 million will go to education and training programs at all levels of our educational system to ensure a steady pipeline of skilled blue and white collar energy efficiency professionals.

At the national level, the American Recovery and Reinvestment Act of 2009 (ARRA) is funding the Energy Efficiency and Conservation Block Grant Program, which is providing millions of dollars for local governments in the region to implement projects and programs that reduce total energy use and fossil fuel emissions and improve energy efficiency in multiple sectors. ARRA also is providing $226 million to the Energy Commission for the State Energy Program (SEP). The SEP provides grants to states to help address energy priorities and program funding to finance renewable energy and energy efficiency improvements in buildings. The SEP is an important component of the overall strategy for making buildings and industrial facilities more energy efficient.

SANDAG, the California Center for Sustainable Energy, several local governments, and other partners are currently collaborating on a SEP proposal to develop a whole building residential retrofit program focused on improving the energy efficiency of existing single family and multifamily residential buildings in the region. If successful, this proposal could bring up to $8 million to the region, and lay the foundation for a long-term existing building retrofit program.

### 5.1.3 Electricity Consumption Overview

Within buildings, lighting usually comprises the largest portion of electricity usage, roughly 20–25 percent of the total. Air conditioning is likely to be the largest single energy user for buildings in hotter climate zones in the region. Central, wall-unit, and so-called “split” air-conditioning systems available today are significantly more energy efficient relative to older systems.

In addition, “plug loads” collectively account for around 25 percent of overall household energy use in California – more than the refrigerator in most homes. Plug loads are smaller electrical devices or appliances that draw power through an electric outlet, such as computers and their peripherals; televisions and entertainment systems; and a wide variety of electronics and rechargeable devices. Further, many electronics and electronic components of appliances use electricity even when the device is not being used. Consumers are often unaware that they are of paying higher electricity bills to cover this “phantom” usage (also called “standby” power). Some estimates show standby power to be as much as 10 percent of a home’s electricity consumption. While state and federal governments work with the manufacturing industry to establish and strengthen energy standards for appliances and electronics to reduce demand from plug loads,
consumer education about plug loads and efficient appliances in the marketplace can also reduce electricity consumption.

**Approach to Meeting the Energy Efficiency Goal**

Keeping total electricity consumption in the residential and commercial sectors flat through 2030 will require increased energy conservation and efficiency efforts, above and beyond existing state policy and utility-administered programs described above. As shown in Figure EE-1, additional measures are needed to keep total residential and electricity consumption flat through 2030.

The future electricity projections presented here do not take into account potential growth in electricity consumption due to plug-in electric vehicles. As discussed further in Section 8. Transportation Fuels, plug-in electric vehicles can help the region meet its goals for reducing GHG emissions, improving air quality, and reducing dependence on imported petroleum fuels. While initial market penetration of plug-in electric vehicles likely can be accommodated by the existing electricity grid, conversion of a substantial portion of the vehicle fleet to plug-in vehicles has the potential to increase total electricity consumption, and interfere with the goal of keeping consumption flat, as well as increase peak demand.

**Figure EE-1: Projected Impacts of Energy Efficiency Measures in the San Diego Region 2010-2030 (above and beyond business as usual)**

![Graph showing projected impacts of energy efficiency measures](source: California Center for Sustainable Energy, 2009.)

Table EE-1 depicts the potential electricity savings from select energy efficiency measures that could be implemented by local governments (except for increased utility program funding and new appliance standards).
Table EE-1: Regional Electricity Savings Targets for Energy Efficiency  

<table>
<thead>
<tr>
<th>Measures</th>
<th>2030 Reductions (2007 baseline)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased utility energy efficiency program funding</td>
<td>675 GWh</td>
</tr>
<tr>
<td>Comprehensive residential building retrofit program</td>
<td>1482 GWh</td>
</tr>
<tr>
<td>Comprehensive commercial building retrofit program</td>
<td>572 GWh</td>
</tr>
<tr>
<td>New construction building standards (post-2009 updates)</td>
<td>260 GWh</td>
</tr>
<tr>
<td>Appliance standards (post-2009 updates)</td>
<td>447 GWh</td>
</tr>
<tr>
<td><strong>Total electricity reduction from above measures</strong></td>
<td><strong>3438 GWh</strong></td>
</tr>
<tr>
<td><strong>Reduction in total electricity consumption due to energy efficiency</strong></td>
<td><strong>22 GWh</strong></td>
</tr>
<tr>
<td><strong>Reduction in per capita electricity consumption due to energy efficiency</strong></td>
<td><strong>N/A</strong></td>
</tr>
</tbody>
</table>

Source: California Center for Sustainable Energy, 2009. Notes: 1) Energy efficiency measures are above and beyond currently funded energy efficiency programs. 2) Table does not include transportation fuels.

Local governments have the opportunity to use their authority and influence to help achieve the needed additional energy efficiency savings to achieve the goal for 2030. Table EE-1 shows that the retrofits of existing residential and commercial buildings, particularly residential buildings, offer the greatest potential for additional energy efficiency savings. However, there are challenges to increasing the efficiency of existing buildings. The upfront costs of an energy audit and energy improvements can be expensive. In addition, there is little incentive for renters in the residential sector or lessees in the commercial sector to pay for energy-saving improvements because they do not own the property. At the same time, there is little incentive for an owner to pay for energy improvements because they do not pay the energy bill. This concept is known as the “split incentive.”

Also, although numerous energy efficiency programs exist for residential and commercial buildings, they generally focus on individual building components. Longer-term and larger energy savings can be achieved through more comprehensive or holistic programs that take an integrated approach to evaluating an entire building and creating prioritized packages of measures. Measures can include lighting, insulation, windows, space and water heating, space cooling, ductwork, weatherization, electronics, appliances, swimming pools, and spas. In general, efficiency upgrades are not required retroactively for existing buildings. As a result, policies and programs, and especially funding mechanisms, are needed to achieve energy efficiency savings in the region’s existing building stock.
5.1.4 Pursuing Energy Efficiency in Existing Buildings

To determine how much energy an existing building uses, including the devices plugged into its electrical outlets, an energy audit serves as an essential first step. The audit can identify both energy usage and opportunities where energy can be saved. The “Home Energy Rating System” program, better known as HERS program, is a nationally recognized system to conduct whole-house energy assessments. HERS raters perform a comprehensive audit for existing homes. Building performance contractors are certified to perform audits for residential and nonresidential buildings as well.

An energy audit can discover inefficiencies and provide solutions for increased efficiency. In addition, the audit is an opportune time to assess potential for installing a distributed generation system, such as rooftop solar photovoltaics (PV) or a fuel cell, along with or after any energy efficiency improvements have been made. This topic is addressed further in Chapter V, Section 3, Distributed Generation.

Potential Funding Mechanisms for Energy Efficiency

Building owners often need financial assistance to implement energy-saving projects due to upfront purchase and installation costs. Energy efficiency financing mechanisms exist but some are new, not well known, not widely used, or only available to certain customers. Mechanisms include utility on-bill financing, property-assessed financing, low interest loans for energy efficiency improvements, rebates, incentives, and federal and state tax credits. A local workforce of trained contractors also is needed to perform building retrofits and other assessments.

Upfront costs can be offset by participating in an on-bill financing (OBF) program, which allows utility customers to pay for energy-efficient improvements through their monthly energy bills. The utility offers an upfront loan used to pay for the cost of the qualifying measure. The energy savings realized from the improvement are used to pay back the loan through monthly utility bills, and once the loan is paid off, monthly bills are permanently lower. SDG&E offers an OBF program for business and government customers participating in demand response programs.

Property Assessed Clean Energy or “PACE” programs, also commonly referred to as AB 811 style programs, can serve as a financing mechanism to implement energy efficiency and renewable energy projects. PACE programs allow local governments to offer sustainable energy project loans to eligible property owners. Through the creation of financing districts, property owners can finance energy efficiency improvements and

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5 However, there is a significant lack of trained HERS raters in the San Diego region, a void that could be addressed through new training programs. These programs could build from previous programs, like the “Healthy Homes” program funded by the City of San Diego and U.S. Department of Housing and Urban Development, which utilized an integrated approach to remediation issues in existing building stock.
renewable onsite generation installations through a voluntary assessment on their property tax bills.

AB 811 allows local government entities to offer sustainable energy project loans to eligible property owners. With the creation of assessment financing districts, interested property owners can finance energy efficiency projects, solar photovoltaic installations, and possibly other improvements fixed to real property through an assessment on their property tax bills. This mechanism allows property owners to avoid high upfront installation costs and eliminate concern they might sell the property before seeing full return on that high upfront investment. The result is that property owners within AB 811-type financing districts can finance their improvements with reduced financial risk. The AB 811 mechanism does not require investment of general fund dollars and loan repayment becomes a senior lien on the property, ahead of the mortgage itself.

Local governments such as the City of San Diego are actively developing municipal financing programs. Additionally, the California Statewide Community Development Authority (CSCDA, also known as “California Communities”) is developing an AB 811 program, which member jurisdictions (virtually all local governments in the state) could join. California Communities is a statewide joint powers authority (JPA) that can utilize its existing authority to aggregate demand from local governments to relieve them of the burden of establishing financing districts and accessing the bond market for funding.

SANDAG, California Center for Sustainable Energy, several local governments, and other partners are currently collaborating on a State Energy Program (SEP) proposal to develop a whole building residential retrofit program focused on improving the energy efficiency of existing single family and multifamily residential buildings. If successful, this proposal could bring up to $8 million to the region, and lay the foundation for a long-term existing building retrofit program.

Another example of a financing mechanism is the energy efficient mortgage (EEM). An EEM allows new or current homeowners to finance purchase of a home (or refinance a current mortgage) and include the value of energy saving, cost efficient improvements. EEMs can be used to purchase a new energy efficient home or to finance new improvements to existing homes (also known as an Energy Improvement Mortgage, or EIM). Because cost-effective energy improvements can result in lower utility bills, making more funding available for a mortgage payment, energy efficiency improvements can be directly included in the EEM without the need to qualify for additional financing. By giving borrowers the opportunity to finance improvements as part of a single mortgage, an EEM can also stretch the debt-to-income qualifying ratio and enable homebuyers to qualify for a larger loan amount (and a more energy efficient home).
EEMs are sponsored by federally insured mortgage programs and the conventional secondary mortgage market (Fannie Mae and Freddie Mac). Several types of EEM programs are available. Eligibility for individual EEM programs varies, but in general there is no age limit or income level required. Typically, all programs require that a home energy rating be conducted to provide the lender with an estimate of the “Energy Savings Value”, which includes monthly energy savings and the value of existing/planned energy efficiency measures.

5.1.5 SANDAG Sustainable Regional Program: Energy Roadmap Initiative

As part of CPUC funding for local efforts targeting public sector building retrofits, SANDAG has been awarded about $1.7 million in funding for a Local Government Partnership with SDG&E. The Partnership will enable SANDAG and SDG&E to make energy planning assistance available to local governments through the Energy Roadmap initiative, which is an expansion of the existing SANDAG Sustainable Region Program (SRP). The SRP began as a pilot program with the City of Carlsbad from 2005-2006. The pilot program identified almost $200,000 in available energy savings through cost-effective energy efficiency measures and the City was able to save 489,571 kWh in energy consumption through local energy efficiency programs. The SRP was later expanded to the cities of Solana Beach, Poway, and Imperial Beach.

Since the cities of Chula Vista and San Diego and the County, have individual partnerships with SDG&E, the SANDAG-led initiative is primarily targeted at local governments without full-time energy staff and that have minimally participated or not participated in available energy-saving programs. The energy planning assistance is expected to help local governments save money, use less energy, and reduce GHG emissions. The Partnership will fund the Energy Roadmap initiative from January 2010 through December 2012.

The Energy Roadmap initiative will focus on the identification of energy-saving measures for local government operations, as well as policy measures that local governments could implement to realize energy savings for residents, businesses, and throughout their communities. Components of the program will include energy assessments and audits of existing government buildings and facilities, plan review of proposed construction projects, analysis of opportunities to integrate energy-saving policies into the General Plan and other local plans, policies, and regulations, assistance with project development for energy efficiency installations, training of local government staff, public education and engagement tools, identification of rebate and financing programs, and other useful resources for energy management planning. There also will be a focus
on clean energy economic development, potential pilot demonstrations of emerging technologies, and opportunities for clean, on-site energy generation.

Strategies to improve building energy efficiency include Zero Net Energy (ZNE) buildings, voluntary and mandatory measures to achieve energy efficiency beyond minimum requirements for new construction, voluntary and mandatory energy-saving retrofits for existing buildings, and improved compliance and enforcement of energy efficiency standards. Increased installation of high efficiency technologies like solar hot water heaters and cogeneration systems are additional strategies to offset natural gas use and meet energy needs more efficiently. And finally, funding and financing strategies are essential to successfully increasing energy efficiency and reducing GHG emissions from the region’s building stock.

5.1.6 **Recommended Actions to Promote Energy Efficiency and Conservation**

SANDAG, local governments, or other regional entities can undertake the following actions to support energy efficiency and conservation. In some cases, active collaboration among multiple jurisdictions will be needed to implement the recommended actions. The following recommended actions also would contribute to other energy goals, and the energy efficiency goal would be enhanced by recommended action identified in other topic areas, as described below.
## Recommended Actions to Promote Energy Efficiency and Conservation

<table>
<thead>
<tr>
<th>SANDAG</th>
<th>Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE-1</td>
<td>Provide energy efficiency planning assistance to local governments through the SANDAG Sustainable Region Program.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Local Governments</th>
<th>Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE-2</td>
<td>Establish building energy rating and disclosure policies that inform building owners of their energy usage.</td>
</tr>
<tr>
<td>EE-3</td>
<td>Develop a policy to include energy star appliances in new construction.</td>
</tr>
<tr>
<td>EE-4</td>
<td>Exceed Title 24 energy requirements for new construction through regulations or incentives that work toward an overall goal of zero net energy new homes by 2020 and zero net energy new commercial buildings by 2030.</td>
</tr>
<tr>
<td>EE-5</td>
<td>Increase enforcement of building energy requirements to reduce the rate of noncompliance.</td>
</tr>
<tr>
<td>EE-6</td>
<td>Promote policies that lead to energy efficiency retrofits in existing buildings.</td>
</tr>
<tr>
<td>EE-7</td>
<td>Support increased use of solar water heating in residential, pool, and commercial uses to offset natural gas demand (e.g., pre-plumb policies).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SANDAG, Local Governments, or other Regional Entities</th>
<th>Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE-8</td>
<td>Develop model language for a range of policies that seek to reduce energy use in existing buildings and new construction.</td>
</tr>
<tr>
<td>EE-9</td>
<td>Develop a whole-building retrofit program to improve energy efficiency in existing residential, commercial, municipal, and other buildings.</td>
</tr>
<tr>
<td>EE-10</td>
<td>Establish financing programs (using public or private sources) that residents and businesses can access to conduct energy assessments and make energy efficiency retrofits to existing buildings, as well as other energy-related improvements such as distributed photovoltaic installations.</td>
</tr>
<tr>
<td>EE-11</td>
<td>Conduct an assessment of the regional building stock to determine the potential magnitude of energy savings, their contribution to the energy efficiency and conservation goal, and geographical concentrations of retrofit opportunities.</td>
</tr>
<tr>
<td>EE-12</td>
<td>Provide information and resources to help residents, businesses, developers, builders and others improve energy efficiency and conservation in new and existing buildings.</td>
</tr>
</tbody>
</table>
Building the Market for Home Energy Upgrades

San Diego Regional Energy Partnership

Lindsey Taggart
Project Manager, CCSE

Energy Upgrade California

- Residential whole-house energy upgrades on existing homes
- San Diego Gas & Electric program launched December 2010
- As of February 2013:
  - 308 Advanced Path projects
    - 445,452 kWh savings
      - ~1,450 kWh per project average
    - 49,195 therm (natural gas) savings
      - 160 therms per project average
  - 87 Basic Path projects
    - 10% average savings per project

www.energycenter.org
San Diego Home Energy Upgrade Program

• Direct installation of energy-efficient measures
• Low- and moderate-income homes in City of San Diego
• Free to occupants
• Funded by City EECBG funds & SDG&E rate payers
• Leveraged SDG&E low- and moderate-income programs
• 683 completed projects
• Average savings 7-10% per project

SDREP

• ~$1.6MM in local gov’t and ratepayer funds
• Two year funding period: 2013-2014
• Comprehensive approach with nine focus areas
• Builds on successful programs funded by DOE, CEC, utilities and local governments
• Supports Energy Upgrade California and builds demand for energy upgrades
• Does not include installation of measures or upgrade rebates
SDREP

• High level goals:
  • Increase uptake of home retrofits and reduce GHG emissions from residential building sector
  • Increase awareness and engagement among regional stakeholders to steer retrofit industry
  • Increase Title 24 compliance
  • Increase availability of EE financing products (i.e. PACE)
  • Increase availability of workforce training and skilled workers
  • Inform future policies and regulations under AB 758

SDREP

• Nine Tasks:
  1. Retrofit Advisory Council
  2. Green Real Estate
  3. Regional Energy Mapping Project
  4. EUC Permit Streamlining
  5. HERS Pilots
  6. Workforce Development
  7. Zero Net Energy Codes
  8. Demonstration Homes
  9. Financing Development
Retrofit Advisory Council
Overview & Engagement Opportunities

• Quarterly council meetings
• Bi-monthly committee meetings
  • Marketing
  • Workforce
  • Finance
  • Real Estate
  • Local Gov’t Policy & Research
• RAC one-pager included in meeting docs

Goal: Increase attendance and engagement among stakeholders

➢ Providing updates on hot topics and pending funding opportunities

➢ Seeking representation from all jurisdictions
Regional Energy Mapping and Targeted Outreach
Overview & Engagement Opportunities

- Monthly workshops in communities identified by GIS-based predictive model
- Continuously improve predictive model to inform candidate communities
  - Providing resources to homeowners and leads to contractors
  - Supporting climate action plan goals
  - Seeking local gov’t support to promote and host

Regional Energy Mapping and Targeted Outreach
Overview & Engagement Opportunities

- Upcoming Events
  - April - Scripps Ranch and Mt. Soledad
  - May - Poway/RB, San Carlos and Fallbrook
  - June - Scripps Ranch and Del Cerro
  - July - Fallbrook
  - August - Poway/RB
  - September - San Carlos
  - October - Del Mar
EUC Permit Streamlining
Overview & Engagement Opportunities

• Assess retrofit permit processes in 18 SD jurisdictions
• Create reference matrix for participating contractors
• Work with willing jurisdictions to streamline permit process

➤ Streamlined process → increased compliance and revenue

➤ Seeking partnerships with local building departments and building officials

Home Energy Rating Rebates
Overview & Engagement Opportunities

• Provide ~400 rebates on home energy ratings that inform remodels, home transactions and/or energy retrofits

➤ Providing rebates for all residents in SDG&E territory

➤ Seeking local gov’t assistance with promotion at permit desks
Workforce Development
Overview & Engagement Opportunities

• Train ~60 students in home performance via four sessions of ‘GETUP: Energy Upgrade Career Training’

• Serve as hub for green workforce information and opportunities via coordination of the Green Career Network (online resource)

➢ Focusing on career training for veterans

➢ Providing resources for job seekers throughout San Diego County

Zero Net Energy Codes
Overview & Engagement Opportunities

• Assess regional and national best practices

• Provide Zero Net Energy Roadmap for local jurisdictions

➢ Helping constituents implement new T-24 standards with least cost and headache

➢ Seeking partnerships with local building departments and building officials
Demonstration Homes
Overview & Engagement Opportunities

- Host 60 home tours at 20 retrofitted homes located throughout SD County

- Providing resources for homeowners and leads for contractors

- Supporting climate action plan goals

- Seeking local gov’t support to promote home tours

Financing Development
Overview & Engagement Opportunities

- Provide consulting and technical support for local stakeholders to facilitate development and uptake of EE financing programs and products including PACE

- Providing assistance to City of Chula Vista on PACE RFP

- Facilitating relationships between local gov’ts, regional PACE providers and contractors

- Regional PACE Forum being planned for late
## San Diego Regional Energy Partnership Tasks

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>San Diego Retrofit Advisory Council (RAC)</strong></td>
<td>Foster communication and information sharing among regional stakeholders that improves implementation of regional energy upgrade programs and efforts.</td>
</tr>
<tr>
<td><strong>Green Real Estate</strong></td>
<td>Enable local real estate and lending community to become better advocates for energy efficiency through outreach, education, and coordination activities.</td>
</tr>
<tr>
<td><strong>Regional Energy Mapping Project and Outreach</strong></td>
<td>Refine the existing model and conduct targeted outreach efforts, including residential workshops in candidate communities focused on the basics of home performance, EUC program requirements, and contractor referrals.</td>
</tr>
<tr>
<td><strong>Energy Upgrade California (EUC) Permit Streamlining</strong></td>
<td>Review of current permitting and building plan check requirements for EUC-type projects throughout the 19 jurisdictions within San Diego County, and creation of a “best practice” guide for EUC permitting to help streamline and provide consistency across jurisdictions.</td>
</tr>
<tr>
<td><strong>Home Energy Rating Systems (HERS) Pilots</strong></td>
<td>Test the use of home energy ratings to inform upgrades of existing homes and leverage opportunities such as point-of-sale, point-of-remodel, and permit applications.</td>
</tr>
<tr>
<td><strong>Workforce Development</strong></td>
<td>Work with local community colleges, economic development corporations, and community organizations to develop and provide hands-on home performance training opportunities for unemployed and underemployed workers and non-EUC contractors.</td>
</tr>
<tr>
<td><strong>Zero Net Energy Codes</strong></td>
<td>Review of current energy codes and policies throughout the 19 jurisdictions in San Diego County, and creation of a “Zero Net Energy Roadmap” identifying suggested codes, policies, and incentives to help facilitate no-net energy building design and construction.</td>
</tr>
<tr>
<td><strong>Demonstration Homes</strong></td>
<td>Bring homeowners and contractors together in a recently upgraded, energy efficient home and provide to homeowners information on home performance, EUC incentives, and guided tours from EUC-participating contractors.</td>
</tr>
<tr>
<td><strong>Financing Development</strong></td>
<td>Coordinate between lenders and contractors to provide technical assistance and create functioning relationships that increase the use of alternative financing products, develop materials to help homeowners understand available financing, and build awareness around new financing opportunities including Property Assessed Clean Energy (PACE) programs.</td>
</tr>
</tbody>
</table>
San Diego Region
Retrofit Advisory Council (RAC)

<table>
<thead>
<tr>
<th>Vision</th>
<th>Mission</th>
<th>Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>A sustainable market for</td>
<td>To foster communication and facilitate objective and collaborative</td>
<td>1. Identify market barriers</td>
</tr>
<tr>
<td>energy upgrades in</td>
<td>information sharing that improves implementation of regional</td>
<td></td>
</tr>
<tr>
<td>San Diego.</td>
<td>energy upgrade programs and efforts.</td>
<td>2. Determine market needs to overcome barriers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Evaluate capacity to address barriers</td>
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<tr>
<td></td>
<td></td>
<td>4. Provide solutions or advice to address barriers</td>
</tr>
</tbody>
</table>

RAC Committees

In general, the committees were created to help achieve the vision, mission and objectives from a more specific viewpoint. Each committee identifies barriers and attempts to provide solutions pertaining to their specific subject area. For example:

Marketing Committee addresses barriers to marketing and helps steer approaches to driving demand for energy upgrades. This committee includes implementers, contractors, utilities; anyone interested in identifying and/or facilitating solutions that help market upgrades.

Finance Committee addresses barriers to financing energy upgrades. They have adopted a motto that ‘no energy upgrade goes undone in SD due to lack of availability of adequate EE financing.’ Someone from your PACE team may be appropriate here.

Real Estate Committee addresses barriers to evolving San Diego’s existing real estate infrastructure to include property-specific energy performance data. Committee goals include helping to facilitate a green MLS, bringing appropriate energy training to real estate professionals, and creating real estate advocates for energy upgrades at time of sale.

Workforce Committee has a similar motto to Finance – that ‘no energy upgrade goes undone due to a lack of available trained/skilled workforce to do the job.’ This committee also doubles as the Green Workforce Coalition – a group of local stakeholders that helps steer workforce training opportunities and makes sure all appropriate stakeholders are aware of opportunities across the region.

Local Government Policy & Research Committee addresses policies and research needs to help facilitate the market for energy upgrades. This will likely include assessments of codes and standards (i.e. Zero Net Energy codes), permit processes and opportunities to streamline and make consistent permit processes across the region, and regional energy mapping which provides tools for local governments to reach out to key stakeholders, etc.

This is a project of the San Diego Regional Climate Collaborative. More information on the Climate Collaborative can be found at www.sdclimatecollaborative.org.
UPDATE FROM THE SAN DIEGO REGIONAL ELECTRIC VEHICLE INFRASTRUCTURE WORKING GROUP

Introduction

The Regional Energy Working Group (EWG) has previously received reports on the formation of the San Diego Regional Electric Vehicle Infrastructure Working Group (REVI), and updates on REVI’s progress in developing best practices to address barriers to plug-in electric vehicle (PEV) readiness in the region. SANDAG received a PEV planning grant from the California Energy Commission (CEC) and partnered with the California Center for Sustainable Energy (CCSE) to facilitate REVI meetings, development of best practices, and a San Diego Regional PEV Readiness Plan. The guidelines and the resulting plan will help inform how the Regional Energy Strategy’s transportation fuels goal is assessed. REVI Chair Susan Freedman, SANDAG, will present an update on REVI activities and ways EWG members can be more involved.

Discussion

Regional Energy Strategy

The transportation fuels section of the RES describes alternatives to petroleum-based fuels, technologies for light-duty and heavy-duty vehicles, funding available to support the advancement of alternative fuels, and regional planning for the siting of fueling and charging infrastructure. The transportation fuels goal is to substantially increase the deployment of alternative transportation fuels and vehicles.

PEV Readiness Assessment

Through a complimentary U.S. Department of Energy grant, CCSE worked closely with REVI members, local agencies, and other regional stakeholders to complete an assessment of the San Diego region’s readiness for the deployment of PEVs. The assessment covers five areas:

- Updating zoning and parking policies
- Streamlining permitting and inspection processes
- Updating building codes for electric vehicle supply equipment (EVSE)
- Training and education programs for municipalities and EVSE installers
- Municipal PEV outreach and education programs for local residents and businesses

The executive summary of the report is provided as Attachment 1, and the complete assessment is available at www.energycenter.org/pluginready.
**REV Barrier Busting**

The REVI has been meeting for the last year to share experiences to address regional barriers to PEV infrastructure and discuss potential best practices for incorporation into a PEV readiness plan. Attachment 2 has a table describing REVI’s progress in addressing the eleven barriers that were originally identified. Staff created a diagram demonstrating the relationships between barriers; this diagram is included as Attachment 3.

Best practice materials and documentation of regional planning for public EVSE developed thus far address:

- **Residential permitting and inspection processes:** The REVI created a template for local jurisdictions to use to inform residents and contractors of electric vehicle (EV) charging options, permitting and inspection requirements, and coordination with SDG&E. This template is provided as Attachment 4.

- **Public agency installations of EVSE:** REVI members determined that guidelines for creating a request for proposals (RFP) would be most helpful for local jurisdictions interested in installing EVSE. Drawing from RFPs for EVSE by local governments across the state along with input from REVI members, a template was created that provides sample proposal language that a local jurisdiction could use and customize for their own solicitation. The RFP template for the installation and operation of electric vehicle charging stations is included as Attachment 5.

- **Regional planning for publicly accessible EVSE:** SANDAG and ECotality documented the four-month planning process undertaken in FY 2009-2010 for the EV Project. ECotality convened a regional stakeholder group that included many of today’s REVI members. SANDAG was a member and provided analysts to apply modeling and geographic information systems applications to the regional planning for public EVSE. A summary is included as Attachment 6.

**Next Steps**

Moving forward, SANDAG and CCSE will continue to work with the REVI to adopt best practice documents related to the PEV barriers, and prepare a draft PEV readiness plan for fall 2013. The REVI meets every third Thursday of the month from 1 - 2:30 p.m. at SDG&E’s Energy Innovation Center; the next REVI meeting will be on Thursday, April 18, 2013. The EWG will continue to receive updates on the REVI and the development of PEV readiness materials, and will be asked to review the draft plan when it is available.

Attachments: 1. San Diego Regional PEV Readiness Assessment Executive Summary  
2. Progress on Regional PEV Barriers Table  
3. Prioritization of San Diego REVI Barriers Diagram  
4. Residential Permit and Inspection Template  
6. Regional Planning for Siting Public EVSE

Key Staff Contact: Susan Freedman, (619) 699-7387, Susan.Freedman@sandag.org
EXECUTIVE SUMMARY

Introduction
The San Diego region is at the leading edge of plug-in electric vehicle (PEV) adoption and support. In addition to about 20% of California PEV sales in the region, San Diego hosts the nation’s largest all-electric car-sharing program. However, there remain challenges to greater PEV deployment in the San Diego region.

During 2012, the California Center for Sustainable Energy (CCSE) received Department of Energy (DOE) funding to leverage the work of regional stakeholders in further preparing the region for accelerated PEV adoption. This report is the project’s first phase and contains an evaluation of how prepared jurisdictions in the region are for PEV deployment. This assessment concentrates on the installation of PEV charging infrastructure, or electric vehicle supply equipment (EVSE). The first two sections provide a brief overview of PEV and EVSE technology as well as the deployment of PEVs and EVSE across the San Diego region. Subsequently, the focus is on five critical core areas:

1. Updating zoning and parking policies
2. Streamlining permitting and inspection processes
3. Updating building codes for electric vehicle supply equipment (EVSE)
4. Training and education programs for municipalities and EVSE installers
5. Municipal PEV outreach and education programs for local residents and businesses

Key PEV Readiness Recommendations
For each core area, we identified recommendations based on regional and external best practices. Recommendations address policy gaps and are intended to assist municipalities in becoming more PEV ready. Each recommendation builds off extensive research and interaction with municipalities throughout the region.

Core Area #1: Updating Zoning and Parking Policies (pp. 17–22)
- Utilize City of San Diego Technical Policy 11B-1 as policy for installing charging equipment serving accessible EVSE
- Implement consistent general service and regulatory signage for PEVs throughout the San Diego region
- Update municipal zoning language for dedicated PEV parking, ensure that parking set-asides are based on regional PEV adoption
- Establish a regional parking enforcement policy for PEVs tied to PEV market adoption

Core Area #2: Streamlining Permitting and Inspection Processes (pp. 23–29)
- Establish and adopt regional EVSE permitting guidelines for nonresidential EVSE installations
- Develop EVSE permit municipality-utility communication channel, increasing utility knowledge of additional electricity load of PEVs in the San Diego region
- Develop online express permitting for simple residential EVSE installations, waive plan check requirement for permits
- Assess viability of regionally adopting EVSE electrical contractor self-inspection/permitting process for residential installations

Core Area #3: Updating Building Codes for EVSE Deployment (pp. 31–34)
- Expand understanding of building code revision timelines and processes
- Modify existing use/discretionary permitting processes to include EVSE prewiring language
- Adopt/update prewiring for EVSE in residential and nonresidential new construction

Core Area #4: Training and Education Programs for Municipalities and EVSE Installers (pp. 35–37)
- Implement at least two PEV readiness trainings for regional municipal staff
- Coordinate and expand DOE-funded safety training for emergency first responders in the San Diego region

Core Area #5: Municipal PEV Outreach to Local Residents and Businesses (pp. 39–42)
- Develop PEV resources page on regional municipal websites
- Support/coordinate with existing consumer education
- Create and distribute regionally focused EVSE installation consumer education materials

Regional Next Steps
The second phase of this project, funded by the California Energy Commission, was awarded to the San Diego Association of Governments (SANDAG) and CCSE. Through this grant, SANDAG and CCSE established the San Diego Regional Electric Vehicle Infrastructure (REVI) Working Group. REVI is comprised of representatives from local governments, public agencies, utilities, industry and the nonprofit sector.

REVI will leverage the recommendations in this assessment to develop a San Diego regional PEV readiness plan that identifies, reduces and resolves barriers to the widespread deployment of private and public PEV charging stations.
## Progress on Regional PEV Barriers

<table>
<thead>
<tr>
<th>Barriers/Solutions Being Addressed by Statewide Department of Energy PEV Project and REVI</th>
<th>Priority: High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
</table>

### 1. Permitting/Inspection
Lack of streamlined permitting and inspection processes and inconsistent (high) costs across jurisdictions.

- Discussed by REVI at 5/17/12 meeting.
- Discussed locally at PEV Workshop at CCSE on 6/14/12.
- REVI provided feedback on barrier assessment on 11/8/12, CCSE incorporated feedback into revised DOE PEV Readiness Assessment.
- Permitting and inspection guideline presented to REVI members at 1/17/13 and 2/21/2013 meetings where REVI members provided feedback on the document.
- SANDAG and CCSE to make the requested edits to the permitting and inspection guideline. Edits to be reviewed by members during the 3/21/13 meeting.

### 2. Building Codes
Lack of standard building codes that accommodate charging infrastructure or dedicate circuits for charging infrastructure in new construction and major renovations.

- Discussed by REVI at 5/17/12 meeting.
- Discussed locally at PEV Workshop at CCSE on 6/14/12.
- REVI provided feedback on barrier assessment on 11/8/12, CCSE incorporated feedback into revised DOE PEV Readiness Assessment.
- REVI to discuss factsheet at future meeting.
- N/A

### 3. Zoning and Parking Rules
Lack of standard regional ordinances that facilitate the installation and access to publicly available charging infrastructure.

- Discussed locally at PEV Workshop at CCSE on 6/14/12.
- REVI provided feedback on barrier assessment on 11/8/12, CCSE incorporated feedback into DOE PEV Readiness Assessment.
- REVI to discuss factsheet at future meeting.
- N/A

### 4. Training and Education for Municipal Staff and Electrical Contractors
Lack of knowledge about PEVs and EVSE

- Discussed locally at PEV Workshop at CCSE on 6/14/12.
- Included in revised DOE PEV Readiness Assessment. Discussion of inclusion of these materials in the Regional PEV Readiness Plan at a future meeting.
- Special training on PEV infrastructure for municipal/agency staff was held on 1/29/13 at the Energy Innovation Center.
- The NAFTC is offering a free online electric drive vehicle first responder training program.
- Distributed information on Cuyamaca College EVITP training (free 24 hour class) to REVI members.
- N/A
<table>
<thead>
<tr>
<th>Barrier</th>
<th>Progress on Solutions – Preparation of Guidance Materials</th>
<th>Action Items</th>
</tr>
</thead>
</table>
| **5. Lack of Public Knowledge of PEV and EVSE** Municipal outreach to Local Residents and Businesses | - Discussed locally at PEV Workshop at CCSE on 6/14/12.  
- Discussed CVRP PEV owner survey results at 9/20/12 REVI meeting.  
- Included in revised DOE PEV Readiness Assessment. REVI will discuss the inclusion of these materials into the Regional PEV Readiness Plan at a future meeting. | N/A |
| **6. EVSE at Multi Unit Dwellings** Consumer lack of knowledge regarding EVSE installation in these buildings. Need to educate and work with HOAs to identify and find solutions to unique building challenges. | Region is recognized leader on this issue.  
- REVI guidance materials are to complement SDG&E efforts and materials.  
- Discussed by REVI at 5/17/12 and 7/19/12 meetings. Draft guidance materials were included in 7/19/12 meeting. Discussed CEC Funding for Multicharge project on 9/20/12.  
- Members suggested working on this concurrently with state’s PEVCC multi-unit dwelling (MUD) working group, co-chaired by Joel Pointon, SDG&E  
- MUD working group to develop case studies starting with installations in San Diego.  
- REVI to re-engage at future meeting when draft PEVC materials are available.  
- SDG&E holds quarterly MUD workshops including one that was expressly for REVI.  
- SDG&E produced fact sheet on EVSE install process for MUDs.  
- In early March, SDG&E published a case study on EV charger installations at a mid-rise luxury condominium community in downtown San Diego that included individual meters with TOU rates and dedicated parking spaces, and removed property management for any responsibility related to vehicle charging. | Incorporate SDG&E’s MUD charging case study into the draft guidance materials. |
<table>
<thead>
<tr>
<th>Barrier</th>
<th>Progress on Solutions – Preparation of Guidance Materials</th>
<th>Action Items</th>
</tr>
</thead>
</table>
| **7. Regional Planning for Public EVSE Siting**  
Regional land use and transportation plans served as a basis to identify optimal public EVSE sites. In rollout of EV Project, experience was different from planning. Alternate approaches have been taken to increase public EVSE hosts and sites. | *Region is recognized innovator on this issue.*  
- SANDAG to bring REVI documentation of initial EV Project approach to identifying optimal sites for publicly accessible EVSE using weighted criteria based on local land uses and transportation network. SANDAG produced regional maps of optimal Level 2 and DC Fast Charge sites with input from local EV Project stakeholder group.  
- Course corrections and alternative approaches to be discussed at future meeting.  
- REVI to discuss basis for creating a factsheet on regional planning for public EVSE at 3/21/2013 meeting. | - REVI to discuss regional planning approaches used to site public EVSE at 3/21/2013 meeting. |
| **8. On Peak Charging – TOU Utility Rates**  
A. Need to discourage charging when electricity supplies are in high demand and cost more. Support of time of use (TOU) pricing.  
B. High demand charges that impact EVSE host utility bills. Expensive metering options to access TOU rates. | *Region is recognized leader on TOU PEV rates.*  
A. Local standout area for solution/ use of TOU rates that encourage off-peak charging. SDG&E holds regular workshops on EVSE hosting and PEV Rates.  
B. Question for REVI: Is this a regional barrier to hosting EVSE? This was initially identified as a barrier in 2010. | - N/A |
| **9. Public Agency EVSE Installations**  
Contracting issues have stalled many public agencies from taking part in The EV Project. Need to identify common project barriers and find solutions. | - Discussed by REVI at 9/20/12 and 11/8/12 meetings, special add-on meeting held 9/26/12.  
- At the 1/17/13 meeting, REVI members requested a template be provided for RFP preparation work and review criteria.  
- REVI members provided feedback on draft RFP template and review criteria at 2/21/2013 meeting. | - The revised RFP template to be reviewed by REVI at 3/21/2013 meeting. |
| **10. Commercial and Workplace Charging**  
Lack of understanding regarding benefits and approaches to understanding workplace charging. | - Commercial installation issues discussed by REVI at 7/19/12 meeting. CEC Funding for workplace/commercial charging discussed at 9/20/12 meeting.  
- REVI to discuss commercial EVSE installations at 3/21/2013 meeting. | - CCSE staff will present a discussion paper that analyzes the value proposition for hosting EVSE infrastructure to REVI at 3/21/2013 meeting. |
<table>
<thead>
<tr>
<th>Barrier</th>
<th>Progress on Solutions – Preparation of Guidance Materials</th>
<th>Action Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>11. PEVs in Government Fleets</strong> Procurement justification needed for local public fleets. Need to describe PEV benefits, including role in reducing municipal GHGs for Climate Action Plans.</td>
<td>• Research underway on incorporation of EVs in Climate Action Plans</td>
<td>• N/A</td>
</tr>
</tbody>
</table>
Prioritization of San Diego REVI Barriers

- Regional Planning for Public EVSE Siting (leadership role)
  - Public agency installations
  - Public fleets
    - Education & Training
- Permitting Issues (residential first)
  - Zoning & parking
    - Commercial
    - SDG&E Time of Use charging
    - SDG&E MUD facilitation
    - Education & Training
  - Multi-unit dwellings (MUD)
    - Building code changes
    - Education & Training
- Utility solutions (leadership role)
  - SDG&E MUD facilitation
    - Education & Training

February 2013
RESIDENTIAL PERMIT AND INSPECTION TEMPLATE

Document’s Purpose (to be removed prior to implementation and distribution)

This template has been developed to provide local jurisdictions with standardized information related to the permit, install, and inspection processes for residential EV chargers. It can be modified as a jurisdiction desires. The intended audience for this template is PEV owners and secondary audience is EVSE installers (electricians). The REVI has prepared this template in response to a recognized need for streamlined permit and inspection processes. This is intended to provide clear information to homeowners and electrical contractors about EVSEs and residential EV charger requirements. Additional Resources are attached for jurisdictions interested in providing additional information to staff, homeowners, and/or electrical contractors.

RESIDENTIAL ELECTRIC VEHICLE CHARGER GUIDELINES

How do I charge my plug-in electric vehicle at home?

The type of plug-in electric vehicle (PEV) you purchase will determine the ways you can charge your vehicle. There are two basic types of EV chargers for home use (Level 1 and Level 2). Consult with your car dealership about your home charging options.

Level 1 charging can be done by plugging directly into a standard 120-volt household outlet (three-pronged outlet). PEVs come standard with a 120-volt charging cord that enables PEV owners to charge their vehicles with a conventional 120-volt outlet.

Several manufacturers sell Level 2 EV chargers for the home, which are capable of charging PEVs in half the time as Level 1. A Level 2 EV charger uses a dedicated 240-volt circuit for faster charging and generally requires a permit. Level 2 charging generally requires the installation of a dedicated circuit close to where your vehicle is parked (usually in the garage, carport or driveway). Visit www.GoElectricDrive.com for information on available EV chargers. In order to obtain the permit you (or your electrical contractor) will need to provide some basic information to show that your existing electrical service can handle the added load.

<table>
<thead>
<tr>
<th>Charging Level</th>
<th>Power Supply</th>
<th>Charger Power</th>
<th>Miles/Hour of Charge</th>
<th>Type of PEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>120 VAC</td>
<td>1.4 kW (onboard charger)</td>
<td>~3-4 miles</td>
<td>~17 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>~9 hours</td>
</tr>
<tr>
<td>Level 2</td>
<td>240 VAC</td>
<td>3.3 kW (onboard charger)</td>
<td>~8-10 miles</td>
<td>~7 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6.6 kW (onboard charger)</td>
<td>~17-20 miles</td>
<td>~3.5 hours</td>
</tr>
</tbody>
</table>
<pre><code>                |              |               |                     | ~1.5 hours  |
</code></pre>
What information do I need to provide to obtain a permit?

This Residential EV Charger Permit Guideline has been developed to streamline the permit, installation and inspection process. Please visit the [Insert department name] at [Insert department physical address] to apply in-person or [Insert website address] to apply online. In most cases, you (or your contractor) simply need to submit the permit application and associated documentation outlined below.

<table>
<thead>
<tr>
<th>Documentation*</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permit application</td>
<td>Electrical permit or special permit for EV chargers [to be identified by jurisdiction]</td>
</tr>
<tr>
<td>EVSE Manufacturer’s Information</td>
<td>The manufacturer’s installation instructions and EV charger specifications.</td>
</tr>
<tr>
<td>Site Plan</td>
<td>Identify the complete layout of existing parking spaces and proposed location of EVSE parking space(s) with respect to existing building and structures.</td>
</tr>
<tr>
<td>Electrical Load Calculations</td>
<td>Home electrical load calculation that estimates if an existing electrical service will handle the extra load from a residential EVSE and wiring methods based on the California Electrical Code (CEC). Note that CEC Article 220 requires load calculations if the existing service panel is rated less than 200 amps. (See sample load calculation attached.)</td>
</tr>
<tr>
<td>Electrical Plans</td>
<td>Single line diagrams showing the system, point of connection to the power supply and the EVSE. (See sample electrical plan attached)</td>
</tr>
</tbody>
</table>

* Documentation will be specific to each jurisdiction

If all of the required information is provided and the proposal complies with the applicable codes, the review and approval process for your permit will usually occur within [4T in days or weeks].

**EV charger installation**

PEV owners are encouraged to choose a licensed local electrical contractor to install your EV charger (electrical vehicle supply equipment). The electrician should have a C-10 license along with the expertise, tools and training for installing home EV chargers. You can verify your electrical contractor is licensed by visiting [www.CSLB.ca.gov](http://www.CSLB.ca.gov) or by calling (800) 321-CSLB. The contractor should follow the installation instructions of the EV charger manufacturer and the requirements of California Electrical Code.

**Is an inspection required for my EV charger?**

Yes, all EV charger installations are required to be inspected before they can be used. Upon completion of the installation, it is your responsibility (or your contractor’s) to schedule a final inspection with the Jurisdiction. In order to schedule an appointment, please call 4T. The inspection will generally occur within 4T of the request.

**Contact SDG&E before installing your EV charger**

Though an individual Level 2 EV charger may have a negligible impact on the utility electric system, the combined effect of several chargers in the same neighborhood could result in overloads on utility secondary wires and transformers. It is important that SDG&E be notified of any Level 2 charger installations to ensure that utility electrical system components are adequately sized to maintain service reliability in your neighborhood. The chart below compares PEV charging to other household appliances. By contacting SDG&E, you will learn of special EV
charger rates offered by SDG&E. These rates can provide you a significantly lower cost for electricity based on the time of day you charge your vehicle. For more information, visit [www.sdge.com/ev](http://www.sdge.com/ev).

### Additional Resources

1. *Load Calculations Worksheet*, used by Cities of Oceanside, Riverside, and San Diego
2. *EVSE Inspection Checklist*, Endorsed by the National Electrical Contractors Association
DRAFT REQUEST FOR PROPOSAL (RFP) TEMPLATE:
Installation and Operation of Electric Vehicle Charging Stations

The following is a Request for Proposal (RFP) template that provides recommended headings and proposal language to assist in the issuance of an RFP for Electric Vehicle Charging Stations. In the outline, a brief summary is provided for each heading and this information can and should be customized for each individual RFP. This outline was created based off of information gathered from RFP’s drafted by the City of Chula Vista and the City of Long Beach.

Disclosure: Proposals shall be kept confidential until a contract is awarded. The <insert jurisdiction> reserves the right to request clarification of any proposal term from prospective vendors. Selected vendor(s) will be notified in writing. Any award is contingent upon the successful negotiation of final contract terms. Negotiations shall be confidential and not subject to disclosure to competing vendors unless and until an agreement is reached. If contract negotiations cannot be concluded successfully, the <insert jurisdiction> reserves the right to negotiate a contract with another vendor or withdraw the RFP. Any contract resulting from this RFP shall not be effective unless and until approved by the <insert jurisdiction Council>.

1. Overview of the Project
Requesting proposals from vendors to fully fund, design, install, operate, maintain, market, and potentially remove electrical vehicle (EV) charging stations, also known as Electric Vehicle Supply Equipment (EVSE), on publically-owned property for public use. This work will also include assisting the jurisdiction in identifying ideal site locations for the EVSE installations.

2. Acronyms/Definitions
A glossary of the necessary acronyms and definitions used throughout the RFP (e.g. “Vendor” – Organization/individual submitting a proposal in response to this RFP)

3. Scope of Project
The Scope of the Project is as follows:

- Provide attractive and well-maintained EVSE.
- Cover all costs associated with installation, maintenance, and electricity for the EVSE. The vendor may establish a service charge and method of payment collection to recoup these costs as well as any operating profit from EVSE users.
- Identify siting locations, including physical address, project site (landmark location), reasoning behind the location selection, and accompanying notes.
- Provide proper EV parking signage and reconfiguration of any parking stalls for EV parking.
- Market the project as well as provide product advertisement.
- Offer options for EVSE when the agreement expires (e.g. charging unit removal, transfer of ownership, contract renewal options).
- The <insert jurisdiction> to provide the required parking spaces to accommodate the EVSE within the parking facilities at no cost to the vendor.

4. Additional Considerations

A. The vendor must agree to insurance and liability requirements (scope and coverages) set by the jurisdiction and state such in its proposal.

<Jurisdiction to insert summary of applicable insurance and liability requirements here and/or can attach full description to end of this template.>

B. <Jurisdiction can add any additional considerations here. For example, if City offers/restricts use of advertisements on or around EVSE.>

5. Submittal Instructions

For questions regarding this RFP, submit all inquiries via email to <insert email address> by <insert due date>. Responses to the questions will be posted <insert where responses will be made available> no later than <insert date>. All proposers are recommended to visit the above mentioned <insert jurisdiction> website on a regular basis as responses will be posted when available.

Proposal Evaluation Process Timeline

<table>
<thead>
<tr>
<th>TASK</th>
<th>DATE/TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deadline for submitting questions</td>
<td>&lt;Insert date&gt;</td>
</tr>
<tr>
<td>Answers to all questions submitted</td>
<td>&lt;Insert date&gt;</td>
</tr>
<tr>
<td>Deadline for submission of proposals</td>
<td>&lt;Insert date&gt;</td>
</tr>
<tr>
<td>Evaluation period</td>
<td>&lt;Insert date&gt;</td>
</tr>
<tr>
<td>Selection of vendor</td>
<td>&lt;Insert date&gt;</td>
</tr>
</tbody>
</table>

*NOTE: These dates represent a tentative schedule of events. The <insert jurisdiction> reserves the right to modify these dates at any time, with appropriate notice to prospective vendors.*

Vendors shall submit one (1) original proposal marked “ORIGINAL” and four (4) identical copies to the following:

<Insert Jurisdiction Name>
<Insert Contact Name>
<Insert Address>

Proposals shall be clearly labeled in a sealed envelope or box as follows:
REQUEST FOR PROPOSAL NO.: <insert proposal number>
FOR: Electric Vehicle Charging Stations

Disclosure: Proposals must be received by <insert date and time>. Proposals that do not arrive by the specified date and time WILL NOT BE ACCEPTED and will be returned unopened. Vendors may submit their proposal any time prior to the above stated deadline. E-mail or fax submissions will not be accepted.

At its sole discretion, the <insert jurisdiction> may reject incomplete proposal submittals if, in its judgment, the submittal lacks information needed to effectively evaluate the proposal. Nothing in this request for qualifications implies a contractual obligation with any firm, nor will the <insert jurisdiction> reimburse costs for submittal preparation.

Proposal Format:

Vendor Information:

- The legal name of the vendor, address and telephone number.
- The structure of the organization (e.g., sole proprietorship, partnership, corporation, etc.) including state of formation.
- The name, address and telephone number of the person to whom correspondence should be directed.
- The year the company was established as currently being operated.
- A certified financial statement, including, but not limited to a Dun and Bradstreet rating.

Vendor Background & Work Experience:

- A list of all communities within the San Diego Gas & Electric (SDG&E) service territory in which the vendor has provided and maintained publicly-available EVSE during the last five years, if applicable. Please list communities with active EVSE and communities where EVSE have been removed. Also include the following information for each community:
  - Name of the organization that contracted with you for EVSE sites. Please include the name of a contact person and phone number.
  - Was the contract/franchise exclusive or nonexclusive?
  - Number of EVSE provided.
  - Time period that the EVSE were installed.
  - Reporting sales & usage (sample reports)
- A list with additional California communities, and/or communities in United States in which the vendor has provided and maintained publicly-available EVSE during the last five years, if applicable. Include all of the information identified in the previous bullet.
- Please list any public agencies that have chosen to cancel or not renew EVSE contracts with your firm during the last five years. Show names of organizations and names and phone numbers of persons who can be contacted.
- Provide qualifications of the local contractors that will perform the EVSE installations. Demonstrate that the vendor is working with C-10 licensed electrical contractors employing California state-certified electricians to handle EVSE installations and maintenance.
• List any EVSE-specific trainings or certifications that the vendor’s electrical contractor and/or the contractor’s electricians have completed, if applicable (e.g. The Electric Vehicle Infrastructure Training Program (EVITP) or UL training).
• Include the number of EVSE installations completed to date by the vendor’s electrical contractor and/or the contractor’s electricians.
  o Demonstrate an understanding of <insert jurisdiction> processes, required permits, permit costs, licenses, applicable state and local codes specific to EVSE and procedures for this type of project.

**Scope of Work:**

  o A written and pictorial description of the proposed EVSE design, including:
    ▪ Comprehensive specifications (including make, manufacturer, & model numbers of equipment).
    ▪ Delivery and proposed installation schedule.
    ▪ The submission of more than one type of charging station is permitted, however, if the selection of any particular design would result in a change to the proposed rate structure and method of collection, those changes must be noted.
  o Metering configurations identifying how the vendor will provide the electricity to the EVSE end consumer at no cost to the jurisdiction.
    ▪ Process and schedule for reimbursement to the jurisdiction for cost recovery of electricity provided to EVSE (if applicable).
  o Proposed EVSE end consumer rate structure (e.g. charging customers per kWh usage or plug time) and customer method of payment (e.g. credit card reader for universal usage or restricted access for only network users).
  o Description of the proposed EVSE maintenance program including the location of maintenance facilities, number of staff that will be available for maintenance, and anticipated response times.
  o Description of ability and staff expertise to provide services including marketing, installation, monitoring, and maintenance of EVSE.
    ▪ Quality control/safety features.
    ▪ Marketing plan details and available resources.
  o Financial incentives to the <insert jurisdiction> (if applicable).
  o Options for EVSE when the agreement expires (e.g. charging unit removal, transfer of ownership, contract renewal options) and responsible party for any costs incurred (if applicable). Highly preferred that the vendor cover any removal costs.

**Additional Items:**

  o The proposal must be signed by the individual(s) legally authorized to bind the vendor.
  o If complete responses cannot be provided without referencing supporting documentation, such documentation must be provided with the proposal and specific references made to the tab, page, section and/or paragraph where the supplemental information can be found.
6. Proposal Evaluation & Award Process

Proposals will be evaluated based on the following criteria (please reference attached RFP Criteria Review Template):

- Current and past vendor performance in similar contracts with other agencies.
- Financial stability of the proposer as reflected in a certified financial statement or other certified statement, including but not limited to a Dun and Bradstreet financial rating.
- EV customer rate structure and method of customer payment that will be used to charge customers.
- Description of metering configuration.
- Process and schedule to reimburse the jurisdiction in order to recoup cost of electricity used to provide EVSE (if applicable).
- Maximum public benefit (i.e., in terms of affordability and customer support).
- Strength, quality, durability, advanced technology, future flexibility, and aesthetic appeal of proposed EVSE.
- Proposed maintenance, repair and replacement schedule including response times for malfunctioning EVSE (e.g. vendor’s proximity to the <insert jurisdiction> and number of proposer’s employees performing maintenance functions).
- Possible commitment to providing additional EVSE at other <insert jurisdiction> owned parking facilities (desirable but not required).
- Vendor’s specific marketing strategy that includes product advertising.
  - EVSE installation marketing plan.
  - Description of the vendor’s available marketing resources.
- Proposed options for EVSE (e.g. system removal, transfer of ownership, contract renewal options) when the agreement expires and potential costs to the jurisdiction.
- Overall monetary return to the <insert jurisdiction> (if applicable).

_Suggestion for Jurisdiction:_ Create a scoring criterion that may include assignment of percentages and/or weighting each criterion listed above.

7. Project Specifications

- Provide installation site plans (if applicable [for reference, please see Exhibit A of the City of Long Beach RFP No. PW12-016]).

8. Subcontractor Information and Business License

Does this proposal include the use of subcontractors?

Yes _____ No _____ Initials _______

If “Yes”, vendor must:

- Identify specific subcontractors and the specific requirements of this RFP for which each proposed subcontractor will perform services.
o The <insert jurisdiction> requires that the awarded vendor provide proof of payment of any subcontractors used for this project. Proposals shall include a plan by which the <insert jurisdiction> will be notified of such payments.

o Primary contractor shall not allow any subcontractor to commence work until all insurance required of subcontractor is obtained.

**BUSINESS LICENSE**

<Insert Jurisdiction> requires all businesses operating in the <insert jurisdiction> to pay a business license tax. In some cases the <insert jurisdiction> may require a regulatory permit and/or evidence of a State or Federal license. Prior to issuing a business license, certain business types will require the business license application and/or business location to be reviewed by the Development Services, Fire, Health, and/or Police Departments.

9. **Cost**
   o N/A

10. **Terms, Conditions and Exceptions**

<Insert project specific terms, conditions and exceptions>

To view an example, please reference section 9 of the City of Long Beach RFP No. PW12-016.

<Insert individual public liability and insurance requirements for your agency>

**Additional Resources - Sample evaluation criteria for scoring RFPs**

1. Vendor Evaluation Criteria sample 1
2. SANDAG Criteria Used in Evaluating Proposals (simple version)
3. SANDAG Consultant Short List Evaluation Form (with weighting for scores)
Regional Planning for Siting Public EVSE

Introduction

Through the Electric Vehicle (EV) Project, regional modeling to identify optimal locations to site publicly available electric vehicle supply equipment (EVSE) was undertaken in 2009-2010. Several REVI members participated in the EV Project’s Stakeholder Advisory Committee and provided direction on a land use suitability model. SANDAG developed a visual and interactive version of the model using the Community Viz geographic information systems (GIS) application. Ecotality, as manager of the EV Project, utilized this regional planning approach and model results as a jumping off point to undertake site assessments and outreach to potential optimum EVSE host sites. This report provides an overview of this regional planning effort.

With a heavy reliance on the EV Project for a significant portion of the EV infrastructure development in 2010-2012, the Stakeholder Committee’s primary and secondary goals were to:

1. Enable study of infrastructure deployment and driver behavior, to learn lessons from this study and refine the EV infrastructure deployment methodology.
2. Place EV Project EVSEs in locations that will serve as the foundation of a rich charging network for all future PEV drivers, where this goal does not conflict with the primary strategic goal.

At the time this modeling began, the Nissan LEAF had not been released yet and this was the first time planning for public EVSE had taken place since the EV1 in the 1990s. A primary purpose of the EV Project was to establish the public infrastructure necessary to provide a level of confidence to consumers that plug-in electric vehicles were a reality and could be used as everyday cars.

As more car manufacturers release PEVs each year, home and workplace charging are expected to be the primary places for PEV charging. Thus far, significant federal and state investment in EVSE has been focused on establishing robust public charging networks to address real and perceived range anxiety concerns.

Across the country, approaches for establishing public EVSE have varied. The San Diego region applied a modeling approach based on our land use and transportation network. The intent was to create a robust public EVSE network to meet near term EV Project goals as well as the long term EV needs for charging stations across the region.

The REVI should consider possible further uses for this model, such as:

- Producing maps by sub-region or jurisdiction to identify potential publicly accessible EVSE.
- Factors in the model could be re-scored as needed based on lessons learned and to serve this next phase of public EVSE siting.
- Factors could be weighted differently to identify optimal public EVSE sites for other priority areas like transportation corridors, smart growth areas, employment areas, or other criteria.
The Participants: EV Project Stakeholder Advisory Committee

As part of the EV Project, Ecotality formed a local stakeholder group comprised of public and private entities in the San Diego region. The EV Project Stakeholder Advisory Committee (ESAC) was to help guide EV infrastructure planning efforts, with the intent to ensure that EV charging needs are identified and met with the unique characteristics of San Diego in clear focus.

Through review of materials for, and participation in, 20 working group meetings of 1-2 hours and one half-day interactive workshop, ESAC members developed a strong working knowledge of PEV ranges, battery recharge times with various levels of EVSE charging, factors (such as temperature, terrain, driving behavior, etc.) that affect PEV performance, PEV consumer demographics, and electric utility rate structures. The ESAC was provided with summary information of the latest academic studies on PEV charging perceptions and behavior, to further inform their modeling choices.

<table>
<thead>
<tr>
<th>EV Project Stakeholder Advisory Committee Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Chula Vista</td>
</tr>
<tr>
<td>City of Escondido</td>
</tr>
<tr>
<td>City of La Mesa</td>
</tr>
<tr>
<td>City of Oceanside</td>
</tr>
<tr>
<td>City of Poway</td>
</tr>
<tr>
<td>City of San Diego</td>
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<td>City of Santee</td>
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<td>County of San Diego</td>
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<tr>
<td>ECONA</td>
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<tr>
<td>Nissan</td>
</tr>
</tbody>
</table>

Model Development

STAGE 1

First, the ESAC members were provided a spreadsheet listing the 102 land use categories (as defined in municipal planning) to be scored from 1 to 5. ESAC members were to assign a value to each land use based on the following factors.
FACTORS FOR HOSTING LEVEL 2 AND DC FAST CHARGE EVSE

Could a high number of users take advantage of this site?
- Integrated into daily life
- Available to many different users (takes account of any restrictions like employee only use, etc.)

Is there an appropriate amount of vehicle turnover for the type of charger?
- Level 2: vehicle stay times of one to four hours
- DC fast charge: vehicle stay times of five minutes to thirty minutes

What is the daily and weekly availability of the site?
- Maximize the number of open days per week & per year (taking account of seasonality)
- Maximize the number of open hours per day

STAGE 2

Next, the values assigned by each ESAC member were aggregated into group data and averaged. SANDAG analysts applied these scores to “Master Geographic Reference Areas” (MGRAs), which are the base units of geography for this model and most SANDAG applications. MGRAs are roughly the size of census blocks in urban and suburban areas, and census block groups in rural areas. They are delineated in a way to preserve the contiguity of trip producing and attracting land uses.¹

The ESAC reconvened to discuss and clarify the overall score results. The final agreed upon scores for each land use category were then used in the regional modeling and Community Viz application. The purpose was to identify the most suitable land uses for hosting Level 2 EVSE and DC fast charge EVSE.

STAGE 3

In addition to scoring generic land use categories based on their suitability to host EVSE (see factors table above), location-specific factors were included. Land use category scores were multiplied by a standardized average daily traffic score for the road that serves the specific sites. If a site was within a major activity center or employment area, the major activity center / standardized employment area score was added to the average daily traffic score before being multiplied by the land use score. The definition used for each of these factors is provided in the following table of model considerations.

¹ Master Geographic Reference Area (MGRA) is the base unit of geography for this model and is a proprietary data unit designed and used by SANDAG. MGRAs are designed to nest to larger standard geographies such as census tracts, zip codes, and municipal boundaries.
## MODEL CONSIDERATIONS

| Traffic Patterns | Significant study has already been completed on identifying traffic flows and patterns on major freeways. What is useful in identifying potential sites for publicly available EV charging infrastructure are where trips are attracted to in the greatest numbers—regional attractors. Vehicle trips points can be broken into trip origination points, typically residential areas, and trip destinations. Uses that draw trips from all over the region are regional attractors, and one type of regional attractor is an employment center, which is described in more detail in the next sub-section. Other regional attractors include retail and entertainment districts, along with recreation areas and multi-modal transportation hubs. |
| Land Uses | Land use categories, 102 in total, were used as the potential targets for EVSE placement. The land use categories generally correspond to underlying municipal zoning designations and covered all possible uses in the region, such as airports, beach, park and ride lots, hotel, regional shopping centers, specialty retail, and many others. The land use category data is maintained by SANDAG, through periodic updating with local municipalities and the County of San Diego in the San Diego region. |
| Trip Attractors | Trip attraction refers to the destination point of a trip in the trip generation model. Each trip has two trip “ends” (i.e. a beginning point and a destination point) and the trip generation model calculates trip ends separately. One end is classified as a trip attraction (i.e. the destination, or end point of the trip). For example, the home end of home-based trips is defined as the production end and the work location is defined as the attraction end. Shopping centers, recreation facilities, and work locations are all trip “attractors” upon which the attraction weight is based for modeling purposes. This bifurcation of trip ends and subsequent focus on destinations allows for a quick initial screening out of all trip origination locations, and for the development of a trip attraction weight based on the volume of trips attracted. |
| Employment Centers | Employment center refers to the number of jobs in the zone that the land use is located in, and implies a nearby day-time population. Employment data was not disaggregated by job classification (e.g. service, retail, industrial, etc.); rather it reflects aggregated job counts. Employment centers were first defined on a binary scale as MGRAs with more than twice the employment density of the study area mean. Then, the remaining areas were standardized on the number of jobs in the area. |
| Regional Attractors | Regional attractors refer to those areas or locations that have historically attracted trips from a broad area across the San Diego region. Specifically, regional attractors often attract trips from greater distances than other locations or areas. All regional attractors with qualifying land uses (those ranked highest in the land use suitability analysis described in detail later) were mapped. |
| Smart Growth Areas | Smart growth areas refer to areas mapped by SANDAG, as part of the 2008 Smart Growth Concept Map update. The areas reflect existing, planned or potential locations for smart growth that can be characterized as typically more compact higher density areas that are typically walkable and near public transit. The areas were identified by SANDAG through extensive outreach with and input from the municipalities and communities where the areas are located. These areas will see future development investment and remain or develop as vital areas within the many communities in the San Diego region, and for that reason are seen as important possible locations for public EV charging. |
STAGE 4

During subsequent ESAC meetings, members were better informed of transportation and land use characteristics that SANDAG uses to accurately model and/or assess sub-regional transportation projects. One more level of weighting was then discussed and utilized to better identify optimal EVSE host sites. ESAC members were asked to weight some of these scores like the importance of trip attractors, employment centers or major regional destinations (attractors).

STAGE 5

SANDAG analysts prepared GIS layers showing which MGRAs scored well to effectively develop EVSE Optimization models for both Level 2 and DCFC EVSEs. SANDAG used the Community Viz GIS application to portray the data. Maps of optimum sites were created with ¼ mile diameter location boundaries yielding approximately 400 – 500 locations.

Model review occurred over approximately one month. Many ESAC organizations sought input and review from multiple departments/units, leveraging areas of expertise, such as transportation facility planning, electric distribution system planning, and land use planning, amongst others.

Raw scores were normalized and broken down into three main categories – highly probable (well above average), probable (above average), and average/below average. Only MGRAs in the top two categories were mapped as potentially optimal locations for EVSE. A series of region-wide and sub-regional maps were prepared for the EV Project and are listed below. A sample map is included at the end of this report.

<table>
<thead>
<tr>
<th>Maps Produced</th>
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<tbody>
<tr>
<td><strong>Region-wide Maps</strong></td>
</tr>
<tr>
<td>Potential Locations AC Level 2</td>
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<tr>
<td>Potential Locations DCFCs</td>
</tr>
<tr>
<td>Potential Locations Regional Attractor Focus</td>
</tr>
<tr>
<td>Potential Locations Employment Focus</td>
</tr>
<tr>
<td><strong>Aerial imagery Level 2 EV Chargers and DCFCs</strong></td>
</tr>
<tr>
<td>Central East San Diego Region</td>
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<tr>
<td>Central San Diego North</td>
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<tr>
<td>Central San Diego South</td>
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<tr>
<td>East San Diego Region</td>
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<tr>
<td>Northeast San Diego Region</td>
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<tr>
<td>Northwest San Diego Region</td>
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<tr>
<td>South San Diego Region</td>
</tr>
</tbody>
</table>
Conclusion

The REVI should consider possible further uses for this model, and other mechanism to inform regional planning for publicly available EVSE in the near and long term. The original purpose of this modeling effort was to aid the EV Project in its development of public EVSE infrastructure for the San Diego region. Ecotality was able to use the results as a jumping off point to undertake site assessments and outreach to potential optimal EVSE host sites.

Data used in this planning effort for the EV Project is retained by SANDAG to enable further use by SANDAG and its member agencies. One exception is the data used in Electric Utility Grid Capacity analysis, which is retained exclusively by SDG&E. SANDAG can provide the modeling results, maps, and other relevant information on request.
2013 SANDAG LEGISLATIVE PRIORITIES WITH AN ENERGY NEXUS

Introduction

SANDAG’s Legislative Program is approved by the Board of Directors on an annual basis. The program includes the agency’s legislative policies and sets priorities for possible federal and state legislation and local activities for the calendar year. The Regional Energy Working Group (EWG) was presented with the 2012 Legislative Program in March 2012 and in more specificity in April 2012. Energy related legislation continues to be an active policy area prioritized in goals 2B and 10B of the 2013 Legislative Program (see Attachment 1). EWG Members are asked to review the 2013 program and recommend to the EWG legislative bills that could be appropriate to monitor. Next month, a list of identified bills of interest and relevance will be presented to the EWG.

Information

For additional legislative considerations, the Regional Energy Strategy (RES) priority actions, broad strategies and eleven RES goals follow.

<table>
<thead>
<tr>
<th>RES Priority Early Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pursue a comprehensive building retrofit program to improve efficiency and install renewable energy systems.</td>
</tr>
<tr>
<td>2. Create financing programs to pay for projects and improvements that save energy.</td>
</tr>
<tr>
<td>3. Utilize the SANDAG-SDG&amp;E Local Government Partnership to help local governments identify opportunities and implement energy savings at government facilities and throughout their communities.</td>
</tr>
<tr>
<td>4. Support land use and transportation planning strategies that reduce energy use and greenhouse gas emissions.</td>
</tr>
<tr>
<td>5. Support planning of electric charging and alternative fueling infrastructure.</td>
</tr>
<tr>
<td>6. Support use of existing unused reclaimed water to decrease the amount of energy needed to meet the water needs of the San Diego region.</td>
</tr>
<tr>
<td>TOPIC</td>
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<tr>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>Energy Efficiency and Conservation</td>
</tr>
<tr>
<td>Renewable Energy</td>
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<tr>
<td>Distributed Generation</td>
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<tr>
<td>Energy and Water</td>
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<tr>
<td>Peak Demand</td>
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<tr>
<td>Smart Grid</td>
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<tr>
<td>Natural Gas Power Plants</td>
</tr>
<tr>
<td>Transportation Fuels</td>
</tr>
<tr>
<td>Land Use and Transportation Planning</td>
</tr>
<tr>
<td>Energy and Borders</td>
</tr>
<tr>
<td>Clean Energy Economy</td>
</tr>
</tbody>
</table>

Attachment: 1. SANDAG 2013 Legislative Program

Key Staff Contact: Anna Lowe, (619) 595-5603, Anna.Lowe@sandag.org
### 2013 LEGISLATIVE PROGRAM

**Overarching Goal:** Pursue policy and legislative changes that enable SANDAG to better implement its adopted plans and programs.

#### (A) SPONSOR

<table>
<thead>
<tr>
<th>NO.</th>
<th>GENERAL DESCRIPTION OF GOAL</th>
<th>PRIORITY</th>
<th>BOARD POSITION</th>
<th>T</th>
<th>R</th>
<th>P</th>
<th>B</th>
<th>JURISDICTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>Work with federal, state, and local stakeholders to implement Moving Ahead for Progress in the 21st Century (MAP-21), including appropriate funding levels, goods movement and border programs, transit investment and reforms, process improvements (including streamlined environmental processes), non-motorized transportation, and tribal transportation planning. (2007, 2012)</td>
<td>Highest</td>
<td>Sponsor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State</td>
</tr>
<tr>
<td>2A</td>
<td>Pursue resources and funding mechanisms consistent with financial strategies adopted in the Regional Transportation Plan (RTP) and Regional Comprehensive Plan (RCP), including but not limited to, increasing revenues for transportation, cap-and-trade revenues, gas tax or equivalent revenue sources, bond measures, public/private partnerships, and smart growth. (2012)</td>
<td>Highest</td>
<td>Sponsor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State/Local</td>
</tr>
<tr>
<td>3A</td>
<td>Expand access to resources and technical tools that will enable SANDAG to implement the 2050 RTP and its Sustainable Communities Strategy. (2009)</td>
<td>Highest</td>
<td>Sponsor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State</td>
</tr>
<tr>
<td>4A</td>
<td>Pursue policy and/or legislative changes to enable the use of freeway shoulders as transit lanes on major corridors in the San Diego region. (2006)</td>
<td>High</td>
<td>Sponsor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>State</td>
</tr>
<tr>
<td>6A</td>
<td>Pursue efforts that address border transportation infrastructure needs consistent with the RTP, RCP, and California-Baja California Border Master Plan. (2012)</td>
<td>High</td>
<td>Sponsor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State/Local</td>
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</table>

**Legend** - T: Transportation; R: Regional Planning; P: Public Safety; B: Borders
<table>
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<tr>
<th>NO.</th>
<th>GENERAL DESCRIPTION OF GOAL</th>
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<th>P</th>
<th>B</th>
<th>JURISDICTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1B</td>
<td>Legislation that provides incentives to jurisdictions that provide opportunities for more housing, including affordable and transit-oriented developments, supports regional fair-share allocation of housing funds, and provides additional affordable housing funding with greater local/regional control. (2002)</td>
<td>Highest</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State</td>
</tr>
<tr>
<td>2B</td>
<td>Support policies and/or legislation implementing climate change plans and programs including cap-and-trade that are consistent with the RCP and RTP. (2007)</td>
<td>Highest</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State/Local</td>
</tr>
<tr>
<td>3B</td>
<td>Support efforts to pursue public transit funding including continued support for intercity rail. (2008)</td>
<td>Highest</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>State</td>
</tr>
<tr>
<td>4B</td>
<td>Efforts to pursue resources to improve regional public safety voice and data communications and interoperability, including connectivity with state and federal systems. (2005)</td>
<td>Highest</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State/Local</td>
</tr>
<tr>
<td>5B</td>
<td>Efforts to pursue funding at both the state and federal levels to improve public safety and security in the San Diego region through Automated Regional Justice Information System operations and enhancements, regional transportation system improvements, and activities related to regional emergency preparedness, prevention, and response to catastrophic events. (2003, 2005, 2011)</td>
<td>Highest</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State/Local</td>
</tr>
<tr>
<td>6B</td>
<td>Fiscal reform initiatives that enable regions to develop their own fiscal strategies and oppose unfunded mandates on local governments. Pursue initiatives that balance the fiscal influence that sales tax revenues have upon local land use decisions. (2002)</td>
<td>Highest</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State/Local</td>
</tr>
<tr>
<td>7B</td>
<td>Lower the current two-thirds voter requirement for special purpose taxes, such as transportation and quality of life improvements, to a 55 percent voter threshold. (2002, 2012)</td>
<td>Highest</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>State</td>
</tr>
<tr>
<td>8B</td>
<td>Efforts assisting in the implementation of key environmental issues, including habitat conservation, planning, beach restoration and replenishment, and water quality-related issues. (2002)</td>
<td>Higher</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>State/Local</td>
</tr>
<tr>
<td>9B</td>
<td>Mechanisms providing for the implementation of the RTP, including value pricing, managed lanes, high-occupancy toll lanes, the alleviation of current constraints on transponder technology, transit priority treatments, Transportation Demand Management, and other efforts that promote efficient use of highways and local roads. (2003)</td>
<td>Higher</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State</td>
</tr>
<tr>
<td>10B</td>
<td>Support energy-related legislation, programs, and policies that are consistent with the Regional Energy Strategy. (2002)</td>
<td>Higher</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State/Local</td>
</tr>
<tr>
<td>11B</td>
<td>Efforts to expand available methods of transportation project delivery, including design-build, design sequencing, construction manager/general contractor, and other alternative methods that expedite connectivity with state and federal systems. (2005)</td>
<td>High</td>
<td>Support</td>
<td></td>
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<td></td>
<td>State</td>
</tr>
</tbody>
</table>

Legend - T: Transportation; R: Regional Planning; P: Public Safety; B: Borders
### (B) SUPPORT/OPPOSE (continued)

<table>
<thead>
<tr>
<th>NO.</th>
<th>GENERAL DESCRIPTION OF GOAL</th>
<th>PRIORITY</th>
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<th>P</th>
<th>B</th>
<th>JURISDICTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>12B</td>
<td>Efforts to support funding opportunities and legislation that promote the implementation of effective and collaborative strategies and programs that maintain public safety and promote quality of life, including initiatives that address substance abuse and graffiti abatement, and reduce youth and gang violence. (2005, 2009)</td>
<td>High</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State/Local</td>
</tr>
<tr>
<td>13B</td>
<td>Support legislation and/or policies that promote governmental efficiencies and cost savings. (2009)</td>
<td>High</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State/Local</td>
</tr>
<tr>
<td>14B</td>
<td>Transit boards’ legislative programs where consistent with SANDAG policy. (2002)</td>
<td>High</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State</td>
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### (C) MONITOR

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<th>JURISDICTION</th>
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<tr>
<td>1C</td>
<td>Proposals that limit the use of eminent domain for public infrastructure projects. (2005)</td>
<td>Lower</td>
<td>Monitor/</td>
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<td>2C</td>
<td>Legislation affecting solid waste, water supply, and storm water, support of funding opportunities to assist in these areas. (2003)</td>
<td>Lower</td>
<td>Monitor/Respond</td>
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<td>3C</td>
<td>Legislation relating to personnel matters, i.e., workers’ compensation, Public Employee Retirement System (PERS) benefits, and other labor related issues. (2003)</td>
<td>Lower</td>
<td>Monitor/Respond</td>
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<td>Federal/State/Local</td>
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<td>4C</td>
<td>Legislation requiring local agencies to implement new administrative compliance measures. (2005)</td>
<td>Lower</td>
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STATUS OF CAP-AND-TRADE INVESTMENT PLAN DEVELOPMENT

Introduction

California’s greenhouse gas (GHG) cap-and-trade program is a central element of Assembly Bill 32 (AB 32) (Pavley, 2006), the Global Warming Solutions Act, and covers major sources of GHG emissions in the state such as refineries, power plants, industrial facilities, and transportation fuels. The regulation includes an enforceable GHG cap that will decline over time. The California Air Resources Board (CARB) will distribute allowances, which are tradable permits, equal to the emissions allowed under the cap. In September 2012, the Legislature passed and Governor Brown signed into law two bills – AB 1532 (Perez, 2012) and Senate Bill 535 (De Leon, 2012) – that together establish a framework for developing an investment plan for projects and programs to be funded with cap-and-trade auction proceeds. Staff will provide the EWG with an overview of the investment plan and a timeline for its development. The Energy Working Group (EWG) may wish to discuss investment areas of importance for the San Diego region.

Information

On February 15, 2013, CARB released a draft concept paper on the investment plan for auction proceeds. The state held three public workshops in February to provide an overview of the draft plan and to seek input on its development. The workshop presentation is included as Attachment 1. A draft concept paper can be viewed at: http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/workshops/concept_paper.pdf.

SANDAG staff attended the Los Angeles workshop on February 27, 2013, and provided oral comment. SANDAG also submitted a comment letter to CARB on March 8, 2013, which is included as Attachment 2. At each workshop, public comments were heard by a dais of state agency representatives, including CARB, California Energy Commission, Governor Brown’s Office, Department of Water Resources, Strategic Growth Council, Department of Housing and Community Development, Business, Transportation and Housing Agency, Environmental Policy & Community Programs at California Environmental Protection Agency, and Department of Finance. These agency representatives also summarized the focus areas for the first year(s) of the cap-and-trade program investment plan for auction proceeds.
1) TRANSPORTATION AREAS FOR INVESTMENT

A) Cleaner vehicles and equipment
   • Expand use of zero-emission passenger cars and buses
   • Develop, demonstrate, and deploy zero/near-zero emission equipment to move freight (e.g., trucks, locomotives, cargo equipment)
   • Build new infrastructure to support electrification, high-speed rail, and advanced technology vehicles
   • Research/develop biofuels & other low-carbon fuels

B) Improve system connectivity and efficiency
   • Provide coordinated ticketing & scheduling for transit (e.g., between bus and train)
   • Upgrade infrastructure to improve transit operations & reduce travel times
   • Expand infrastructure to link systems
     o Transit (high-speed rail, other rail, bus)
     o Freight (trucks, ships, locomotives)
   • Increase freight efficiency

C) Planning and land use
   • Help locals develop implementable plans:
     o Connect transportation and land use
     o Support SB 375 (Steinberg, 2008) goals
   • Support biking and walking
   • Promote infill and transit oriented development
   • Improve transit access for disadvantaged communities

2) ENERGY AREAS FOR INVESTMENT

A) Residential Property Assessed Clean Energy (PACE) Guarantee Fund
   • Serve as PACE loan insurance
   • Each $1 million of payment guarantee insurance supports $10 million of energy improvements
   • Portion to low income communities/multi-family housing
   • Administered by State Controller or Treasurer, and/or California Housing Finance Agency or Infrastructure Bank

B) Water / Energy Use
   • Water system energy efficiency (e.g. pump upgrades, system audits, leak repair)
   • Water use efficiency measures (e.g. appliances, fixtures, landscaping)
**Next Steps**

The timeline below was provided by CARB. For additional information, please visit http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm.

- Early April 2013 – CARB releases Draft Investment Plan
- April 25-26, 2013 - CARB public hearing on draft plan in Sacramento
- May 2013 – CARB submits Final Investment Plan to Legislature

Attachments: 1. Presentation slides from CARB Cap-and-Trade Investment Plan Workshop, Los Angeles, February 27, 2013

Key Staff Contact: Susan Freedman, (619) 699-7387, Susan.Freedman@sandag.org
Development of 3-Year Investment Plan for Cap-and-Trade Auction Proceeds

Public Workshops: Fresno Sacramento Los Angeles

February 2013

State of California

Overview
Sources of Greenhouse Gases that Contribute to Climate Change

Year 2009

- Industrial: 18%
- Electricity Generation: 23%
- Transportation: 38%
- Commercial & Residential: 9%
- Agriculture & Forestry: 7%
- High-Global Warming Potential Gases: 4%
- Recycling & Waste: 2%

457 MMTCO2e

Disadvantaged Communities for Investment of Auction Proceeds

SB 535  
(De León, Chapter 830)
Clean Transportation: Policy Overview

Clean Transportation: Program Overview
Clean Transportation – Investment Priorities

Highlighted in the Governor’s proposed budget:

- Mass transit
- High speed rail
- Electrification of heavy duty and light duty vehicles
- Sustainable communities
- Electrification and energy projects that complement high speed rail

Clean Transportation - Coordination

- Business, Transportation & Housing Agency (BTH)
- CA Environmental Protection Agency (Cal/EPA)
- CA Department of Transportation (Caltrans)
- CA Air Resources Board (ARB)
- CA Energy Commission (CEC)
- High Speed Rail Authority (HSRA)
- Strategic Growth Council (SGC)
Investments in cleaner vehicles & equipment:

- Expand use of zero-emission passenger cars and buses
- Develop, demonstrate, and deploy zero/near-zero emission equipment to move freight (e.g., trucks, locomotives, cargo equipment)
- Build new infrastructure to support electrification, high-speed rail, and advanced technology vehicles
- Research/develop biofuels & other low-carbon fuels
Investments to improve system connectivity and efficiency:

- Provide coordinated ticketing & scheduling for transit
- Upgrade infrastructure to improve transit operations & reduce travel times
- Expand infrastructure to link systems
  - Transit (high-speed rail, other rail, bus)
  - Freight (trucks, ships, locomotives)
- Increase freight efficiency

Investments in planning & land use:

- Help locals develop implementable plans:
  - Connect transportation and land use
  - Support SB 375 goals
- Support biking and walking
- Promote infill and transit oriented development
- Improve transit access for disadvantaged communities
Co-Benefits of Transportation Investments

- Reduced air pollution and improved health, especially in disadvantaged communities
- Improved transportation mobility and safety, reduced traffic congestion
- Enhanced energy security
- Job creation
- Preservation of agricultural land and protection of natural resources
Opportunities to Cut Greenhouse Gases through Improved Energy Efficiency

Energy Efficiency and Conservation – Investment Priorities

Highlighted in the Governor’s proposed budget

- Residential sector
  - Property Assessed Clean Energy program (PACE)
- Water sector
  - Reduce energy and increase energy efficiency related to the supply, conveyance, treatment, and use of water
Residential Energy Improvements Benefit Climate Change

Benefits:
- Save energy and reduce greenhouse gas emissions
- Reduce utility bills (50-100% w/efficiency and solar)
- Grow local jobs and deliver economic benefits to communities

Need:
- Low interest financing for low monthly costs,
- Terms matched to duration of benefits (10-20 years)
- Ability to transfer repayment to successor owners.

Answer: PACE property assessments

Property Assessed Clean Energy (PACE) Financing

- Enables secure, low-rate, financing
- No upfront payments
- Financed with local bond assessment
- Paid back on property tax bill – automatic transfer to successor owners
- Five California communities introduced PACE
  - Yucaipa, Western Riverside COG, Palm Desert, Sonoma County, and Berkeley
But, PACE Derailed By Federal Housing Finance Agency in 2010

- FHFA (insures mortgages) advised mortgage lenders it would not insure any mortgage with PACE assessment
  - Alleged risk because PACE tax assessments are in “first position” for payments
- Attorney General Brown sued FHFA
  - Court directed FHFA to reconsider
- FHFA proposed guarantee/insurance on PACE loans

Potential Investments in Residential PACE Guarantee Fund

- Cap and Trade funds could be used for PACE loan insurance
- Each $1M of payment guarantee insurance supports $10M of energy improvements
- Portion to low income communities/multi-family housing
- Administered by State Controller or Treasurer, and/or CA Housing Finance Agency or Infrastructure Bank
Potential Investments in Water/Energy Use

- Already underway
  - Reduce per capita water use by 20 percent by 2020 (SBX7-7)
  - Appliance standards
  - Recycled water policy/rulemaking
  - Energy efficiency funding proceeding

Potential Investments in Water/Energy Use

- Potential for investment of cap and trade funding
  - Water system energy efficiency (e.g. pump upgrades, system audits, leak repair)
  - Water use efficiency measures (e.g. appliances, fixtures, landscaping)
Co-Benefits of Efficiency Gains in the Residential and Water Sectors

- Community investment
- Job creation
- Cleaner air and improved health
- System security and longevity
- Innovation
Wrap Up and Next Steps

Next Steps

• Early April – draft investment plan
• April 25-26 - ARB public hearing in Sacramento
• May - final investment plan to Legislature
• June - budget decisions for FY 2013-14
Staying in touch

Please submit any written comments by March 8, 2013

See the program website at:
http://www.arb.ca.gov/cc/capandtrade/auctionproceeds/auctionproceeds.htm

• Submit comments electronically
• See available documents and notices of meetings
• Subscribe to list serve
March 7, 2013

Ms. Mary Nichols, Chairperson
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Ms. Ana Matosantos, Director
California Department of Finance
915 L Street
Sacramento, CA 95814

Dear Ms. Nichols and Ms. Matosantos:

SUBJECT: SANDAG Comments on the Cap-and-Trade Auction Proceeds Investment Plan Draft Concept Paper

The San Diego Association of Governments (SANDAG) supports the proposal submitted by the Transportation Coalition for Livable Communities and is providing additional comments here. SANDAG adopted the 2050 Regional Transportation Plan and its Sustainable Communities Strategy (RTSCS) in October 2011. It includes a significantly increased commitment to transit and active transportation enhancements through the plan’s horizon.

The RTP/SCS envisions 156 miles of new Trolley and light rail service as well as more than doubling transit service miles and increasing frequencies in key corridors. Further, the RTP/SCS makes an unprecedented commitment to new active transportation facilities to provide safe access throughout the region. SANDAG highlighted the need to identify new sources of revenue to fully realize the vision outlined in the RTP/SCS, and believes the investment of cap-and-trade revenues here would provide great public and local community benefits while achieving the most cost effective implementation of Assembly Bill 32, the Global Warming Solutions Act (AB 32).

Since the transportation sector contributes about 40 percent of the state’s greenhouse gas (GHG) emissions and over 50 percent of the San Diego region’s GHG emissions, we believe that a similar share of allowance revenues should be dedicated to projects and programs that reduce GHG emissions from the transportation sector.

In addition to the RTP/SCS, the SANDAG Regional Energy Strategy (RES) serves as an energy policy blueprint for the San Diego region. The electricity and natural gas sectors are the next largest contributors of GHG emissions in the San Diego region. The RES priorities align with the transportation and energy areas identified in the concept paper for investment of cap-and-trade revenues. RES priority actions include:

- Pursuing a comprehensive building retrofit program
- Supporting finance programs to pay for retrofit projects
• Supporting land use and transportation strategies that reduce energy use and GHG emissions
• Supporting electric charging and alternative fueling infrastructure

SANDAG recognizes the need to identify new sources of revenue to effectively implement the RES, and therefore supports the California Air Resources Board's attention to retrofit and financing programs as energy areas for investment.

We believe investments from cap-and-trade revenues should be consistent with regional plans and Sustainable Communities Strategies. Eligible projects should be consistent with Air Resources Board approved and regionally adopted Sustainable Communities Strategies. Further, each region's share of allowance revenues should be allocated on a formula basis to reflect a geographically equitable distribution of funds.

Lastly, the California Communities Environmental Health Screening Tool (EnviroScreen), developed by the California Environmental Protection Agency (CalEPA) Office of Environmental Health Hazard Assessment, is apparently a tool that will be used to make determinations regarding the allocation of cap-and-trade revenues. SANDAG and many other organizations have expressed concerns regarding the technical capabilities of this tool and its ability to accurately identify communities most in need of GHG reduction strategy investments. If it is too late make improvements to EnviroScreen prior to its implementation, SANDAG requests that CalEPA make it clear that the tool only is intended for use as one tool that can be used to indicate areas that need such investments, versus a requirement that the cap-and-trade funds be used solely in the particular zip codes identified by EnviroScreen. Additionally, in an effort to provide clarity, SANDAG requests that a statement along the lines of the following be published by CalEPA in coordination with dissemination of EnviroScreen and its modeling results:

"EnviroScreen and its model outputs are not intended to, and do not, create any right or benefit, substantive or procedural, enforceable by law or in equity by any party against state or local governments, or their departments, agencies, or entities, officers, employees, or agents, or any other person."

Thank you for your consideration in developing the AB 32 Cap-and-Trade Investment Plan. If you have any questions, please contact Kim Kawada, SANDAG, at (619) 699-6994 or Kim.Kawada@sandag.org.

Sincerely,

GARY L. GALLAGHER
Executive Director

GGA/SFR/mmo