MEETING NOTICE
AND AGENDA

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

Thursday, February 27, 2014
11:30 a.m. to 1 p.m.

SANDAG
7th Floor Conference Room
401 B Street, Suite 800
San Diego, CA 92101-4231

Staff Contact: Allison Wood
(619) 699-1973
allison.wood@sandag.org

AGENDA HIGHLIGHTS

• REGIONAL ENERGY STRATEGY TECHNICAL UPDATE
• REGIONAL ENERGY NETWORK UPDATE

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REGIONAL ENERGY WORKING GROUP
Thursday, February 27, 2014

ITEM #                     RECOMMENDATION

1. WELCOME AND INTRODUCTIONS

+2. APPROVAL OF MEETING MINUTES

The Regional Energy Working Group (EWG) is asked to approve the January 23, 2014, meeting minutes.

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.

REPORTS (4 through 7)

+4. REGIONAL ENERGY STRATEGY TECHNICAL UPDATE

Over the last several months, the EWG has been overseeing a Technical Update to the Regional Energy Strategy (RES). Two components of the RES will be presented for discussion by the EWG:

A) Update to the RES Chapter: Key Policy Drivers
B) Final Draft RES Goal Summary Reports

+5. REGIONAL ENERGY NETWORK UPDATE

The EWG will continue its discussion of Regional Energy Networks and opportunities for the San Diego region. Staff will provide information on potential next steps.

+6. 2014 SANDAG LEGISLATIVE PRIORITIES

On January 24, 2014, the SANDAG Board of Directors approved the 2014 Legislative Program (attached), which includes policies and proposals for possible federal and state legislation and local activities. Goals 2A, 2B, and 10B specifically related to energy and climate change.

7. UPCOMING MEETINGS

The next meeting of the EWG is scheduled from 11:30 a.m. to 1 p.m on Thursday, March 27, 2014.

+ next to an agenda item indicates an attachment
JANUARY 23, 2014, MEETING MINUTES

ITEM #1: WELCOME AND INTRODUCTIONS

Vice Chair Scott Anders, Energy Policy Initiatives Center at University of San Diego (EPIC), called the meeting to order at 11:40 a.m.

ITEM #2: NOVEMBER 21, 2013, MEETING MINUTES

Upon a motion by Greg Newhouse, San Diego Regional Clean Cities Coalition, to approve the Energy Working Group (EWG) meeting minutes, and a second by Paul Manasjan, San Diego County Regional Airport, the EWG approved the meeting minutes from November 21, 2013.

Yes: Paul Manasjan, Greg Newhouse, Deputy Mayor Pamela Bensoussan (City of Chula Vista), Rich Grudman (County of San Diego), Julie Yunker (San Diego Gas & Electric), Mike Evans (San Diego Regional Chamber of Commerce), Cody Hooven (Unified Port District of San Diego), Dave Weil (City of San Diego), Gary Bousquet (San Diego County Water Authority), Vice Chair Scott Anders (EPIC), and Josh Harman (CleanTECH San Diego).

No: None.

Abstain: Kayla Race (Environmental Health Coalition), and Charlie Buck (California Center for Sustainable Energy).

Absent: Don Mosier (City of Del Mar), Ed Gallo (City of Escondido), Rob McNelis (City of Santee), Sharon Cooney (Metropolitan Transit System), Bill Powers (Sierra Club), and David Lloyd (North County Economic Development Council).

ITEM #3: PUBLIC COMMENTS/MEMBER COMMENTS

John Wotzka, member of the public, discussed energy-related news and provided written comments that are summarized here: General Atomics' Small Modular Reactor is online and out for a bid; China will build two nuclear plants, 1,600-MW, European Pressurized-Reactor water units; the Nuclear Regulatory Commission is not requiring San Luis Obispo County, Diablo Canyon Nuclear Plant to meet the earthquake standards of other U.S. reactors; 11 offshore wind turbine projects are moving forward in the United States; state regulators approved a shift of $5 million from non-residential to residential rebates for rooftop solar at the request of the California Center for Sustainable Energy (CCSE); Vietnam wants to build a thermal power plant in the Southern Kien Giang Province that will need 50-million tons of coal; the California Coastal Commission approved a scaled back version of a 50-year beach sand replenishment project that will widen beaches and reduce erosion of coastal bluffs in Encinitas and Solana Beach; automobile manufacturing insiders
at the American Road and Transportation TransOvation workshop told attendees that cars that can drive themselves and “talk” to other cars will be on the road within the next decade; NRG Energy’s eVgo has only installed 110 of the promised 1,040 electric vehicle charging stations and says they have had resistance from property owners willing to provide parking spaces for chargers; China is now the world’s largest consumer of energy and emitter of Carbon Dioxide (CO2).

Mo Lahsaie, City of Oceanside, shared that Governor Brown gave a proclamation of drought on January 17, 2014. Mr. Lahsaie added that, if read carefully, the proclamation gives the indication that projects related to water transfer will go through quickly.

Allison Wood, SANDAG, announced that the grant that SANDAG applied for from the California Energy Commission (CEC) for alternative fuel planning received a notice of proposed award from the CEC. Ms. Wood shared that SANDAG will work with the San Diego Regional Clean Cities Coalition on the project. She informed that she will keep the EWG posted on the grant’s progress. The project will build off of the efforts from the Regional Electric Vehicle Infrastructure plan and will look more broadly at all alternative fuels. It is a two-year grant.

ITEM #4: ENERGY WORKING GROUP 2014 MEETING SCHEDULE AND UPDATED CHARTER

Vice Chair Anders shared Item 4, which was a consent item. He informed everyone that the meeting schedule for the 2014 EWG was included in the agenda packet. There were slight non-substantive revisions to the EWG charter pertaining to report titles.

ITEM #5: LOCAL GOVERNMENT PARTNERSHIPS IN THE SAN DIEGO REGION

Representatives from San Diego Gas & Electric (SDG&E), City of San Diego, City of Chula Vista, County of San Diego, Unified Port District of San Diego, and SANDAG gave brief descriptions of their Local Government Partnerships (LGPs) to the EWG.

Josh Brock, SDG&E, presented the Working Group with an overview of SDG&E’s LGP program. He shared the $13.3 million budget for the seven LGPs in the 2013-2014 program cycle. Mr. Brock gave a high-level overview of the three LGP program elements, including Government/Municipal Facilities Retrofits, California Long-Term Energy Efficiency Strategic Plan (LTEESP) Support, and Core Program Coordination. Mr. Brock shared reasons why the LGPs in SDG&E’s service territory are unique from other investor-owned utility (IOU) LGPs:

- Smaller service territory enables SDG&E to engage more frequently with partners.
- Regional collaboration among key stakeholders (SDG&E, LGPs, and non-profits) and goals closely aligned.
- SDG&E has direct partnerships with cities/county and with SANDAG, whereas other IOUs have regional partnerships via council of governments.
- LGPs are non-resource programs: energy efficiency savings born from the partnership are claimed and reported through SDG&E core programs. The LGPs do not have specific incentive dollars allocated towards them like resource programs do, but non-resource programs allow for more flexibility.
Next, Linda Pratt, City of San Diego, shared the details of the City of San Diego’s (City) LGP. Ms. Pratt shared the key provisions of the LGP:

- $2,249,200 total funding used for staff and consultants; not for equipment, construction costs, or customer rebates.
- The Environmental Services Department manages the LGP for the City and works collaboratively with other City departments.
- The LGP began in 2006 with a standard set of programs to increase energy efficiency within City operations and in the community through:
  - Facility upgrades and retrofits.
  - Codes and standards.
  - Public outreach and education.
  - Leveraging resources and expertise in the region.
- Internal programs include retro-commissioning, evaluating opportunities for zero net energy, and reviewing and refining codes.
- Community programs include climate mitigation and adaptation planning, Green Business Network, high school student outreach.

Ms. Pratt added that the City was the 2013 Energy Champion for local and state government and through the LGP, the City has saved 9.6 million kilowatt-hours (kWh) and has received incentives and rebates of over $1 million.

Robert Beamon, City of Chula Vista, introduced the City of Chula Vista’s LGP, which began in 2006 with the overarching goal to institutionalize energy efficiency in all municipal operations and services. He shared the project highlights from 2013:

- Municipal Energy Management.
  - Piloting LED street light adaptive controls.
- Community Upgrades and Outreach.
  - 687 business energy evaluations with two-thirds of those evaluated adopting recommendations.
  - In November 2013, the Chula Vista City Council approved residential and commercial Property Assessed Clean Energy.
- Sustainable Communities
  - >500 new buildings exceeding Title 24 by 15 percent - 20 percent.
  - New neighborhood energy efficiency planning tool.
- Sub-Regional Partnership – South Bay Energy Action Collaborative.
  - Energy Lounge kits (books and tools) in libraries.
  - Energy roadshow events in all jurisdictions (National City, Coronado, and Imperial Beach).
Mr. Beamon added that for 2014 the City of Chula Vista hopes to compete again in the Cool California Challenge, participate with the City of San Diego and SDG&E on the U.S. Department of Energy Energy Data Accelerator program, and update their internal sustainable operations plan and climate action plan.

Mr. Grudman, County of San Diego, introduced the County of San Diego's (County) LGP. The LGP started in 2006, has a current budget of about $2 million, and encompasses several departments (General Services, Planning and Development, and Parks and Recreation). Mr. Grudman shared the County's LGP program elements for internal operations and the community include: internal energy efficiency and water conservation projects, smart buildings and demand response, utility monitoring and reporting, and communications and training. Community programs include energy and climate planning, codes and standards, participation in the San Diego Regional Energy Partnership, and conservation outreach. Mr. Grudman also shared the County's operational highlights:

- Added over 800,000 green square feet of new Leadership in Energy and Environmental Design construction.
- Smart building at South Bay Regional Center. Smart buildings will eventually roll countywide, but for this year, there are five new facilities.
- Looking at demand-response for South Bay and looking to roll that out countywide.
- Communications and training.
- Leverage incentive programs (completed or in pipeline).
  - Rebates/incentives, on-bill financing, CEC loans, water efficiency grants.
- Current Cycle.
  - Demand-response standards adoption.
  - Zero-Net Energy (ZNE) facility condition assessment. The Alpine Library is the first ZNE facility, and should be operational in 2016. Two other buildings were identified to be ZNE by 2016. In February 2014, the County will start a series of studies on existing facilities to determine the feasibility of making them ZNE.
  - Plug load management strategy.
  - Water strategy: The County is in the process of a retrofit at the Vista Jail and hopes to save 21-million gallons of water a year. There are related energy savings for that as well.

Ms. Hooven, Unified Port District of San Diego, presented on the Unified Port District of San Diego’s (Port) LGP. The Port manages tidelands in trust for the state and people of California. There are five member cities and over 600 tenants and subtenants. Ms. Hooven explained that the Port’s LGP began in 2010; current funding for the 2013-14 cycle is $1.3 million; and LGP components include Port Operation Energy Management, Education and Training, Green Business Network, Climate Planning, and Regional Collaborations. Ms. Hooven shared the highlights of the LGP:

- Retrofits for port facilities:
  - In process of retrofitting port facilities and exterior street and parking lot lights.
    - Would yield a 12 percent reduction in energy use and 600,000 kWh savings in 2014.
- Anticipating over $160,000 in utility incentives and exploring on-bill financing.

- **Green Business Network.**
  - Innovative outreach program created to engage the businesses on tidelands in energy efficiency.
  - The Network members account for more than 78 percent of the energy consumed on tidelands.
  - Their participation in SDG&E programs has saved them over one million kWh and 63,000 therms.
  - Conduit for Direct Install.
  - Served as model for other agencies.

- **Climate Plan.**
  - Adopted in December 2013.
  - In process of developing innovative Sustainable Leasing Policy.
    - An innovative mechanism to mandate energy efficiency.
  - Beginning the development of a green building policy and other standards to integrate energy efficiency into the Port and tenant way of business.

- **West Coast Ports Energy Efficiency and Sustainability guidelines (integrating energy efficient LED lights into the Tenth Avenue Marine Terminal).**
  - Ports rely heavily on energy production (shore power, cranes, equipment).
  - Collaborating with other west coast ports, including Los Angeles and Long Beach.
  - Capacity building.
  - Enhance opportunities for energy efficiency in Port projects.

Finally, Susan Freedman, SANDAG, discussed the SANDAG LGP, which includes the Energy Roadmap Program for the 16 local governments that do not have direct partnerships with SDG&E. The Energy Roadmap program provides technical resources, engineers, and undergoes core program implementation on behalf of the cities. The program looks at ways to reduce energy in government operations and facilities, and partners with the Clean Cities Coalition to assess the jurisdictions’ fleets to see if there are alternative fuel options or higher efficiency options. SANDAG staff works with iCommute to evaluate commuter options and survey the municipal employees to determine if there are non-single occupancy driver opportunities.

Ms. Freedman went on to describe the regional collaborations that all LGPs support. The San Diego Regional Climate Collaborative is a portal for information on energy and climate activities in the San Diego region. The San Diego Regional Energy Partnership (SDREP) is a project that works to advance Energy Upgrade California goals for retrofit projects. CCSE is the subcontractor for the SDREP project and conducts outreach and education, training to local workforce, and works with realtors.
EWG members had the following comments and questions:

- Ms. Bensoussan asked Mr. Brock if the budget that he presented was the current budget. She commented that it would be interesting to see the summary of funding since 2006. She asked what the institutional partnerships were. She also asked for a funding comparison between the LGPs and the institutional partnerships.

- Mr. Brock explained that the budget presented is the current two-year cycle that is halfway through. With government partnerships there are LGPs and institutional partnerships. The institutional partnerships work with the State of California university system (e.g., the University of California system, the California State University system, community colleges) and the Department of Corrections. He explained that the funding of the two types of partnerships cannot be compared, since institutional partners are statewide, which SDG&E LGPs are local.

- Ms. Bensoussan asked Ms. Pratt what she meant by retro-commissioning. Ms. Pratt explained that it refers to buildings that are already in use. The buildings are evaluated to make sure that everything is operating optimally, and systems are adjusted if needed. It is essentially an audit to make sure everything is operating as efficiently as possible.

- Mr. Evans shared that it was encouraging to hear about the LGPs. Since there is a substantial amount of money going into the LGPs, he thought that it might be helpful to evaluate them with the three following components: the savings that are being achieved (reduction in CO₂, kWh, therms, etc.); value-analysis (dollars per kW, kWh, therms); and shared successes/methods (evaluate partnerships to determine successes to invest more resources in). Mr. Evans also suggested that SANDAG look at the codes that are inhibiting the energy efficiency programs and assess whether or not SANDAG has a role in encouraging things. One example was the City of Chula Vista’s request to put in conduit for future solar in homes. The costs are low, but it gives the homeowner future capability.

**ITEM #6: REGIONAL ENERGY NETWORKS**

Anna Lowe, SANDAG, gave the EWG a recap and an update on Regional Energy Networks (REN). She explained the difference between an LGP and a REN. The REN was approved by the California Public Utilities Commission (CPUC) as a pilot program in the 2013-2014 energy efficiency program cycle extension. The RENs are a regional collective of public entities that applied for funding and function independently of the IOU and function as part of the state’s portfolio. Part of the REN’s purpose was to extend some of the programs in the American Recovery and Reinvestment Act program. RENs are intended to complement LGP programs and offer a broader geographic reach.

Ms. Lowe presented the screening material used by the CPUC to evaluate the 2013-2014 REN applications. RENs are intended to address activities that a utility does not and will not undertake.

Ms. Lowe introduced the two existing RENs: the BayREN and the SoCalREN. Each REN has an associated lead agency that filed the application with the CPUC and functions as the lead fiscal agency. The two RENs are structured differently, and, due to their infancy, it is difficult to determine if one structure works better. Both offer residential retrofit programs for single and multi-family homes, and the programs are intended to complement and support existing IOU programs. The BayREN initiated a water-energy efficiency program that offers incentives for water conservation. The SoCalREN included a regional energy center, similar to CCSE, as part of their application. Ms. Lowe provided the different budgets for the two existing RENs and explained that
a REN could be another opportunity to fund additional programs in the San Diego region. Ms. Lowe shared potential REN program ideas and asked the EWG for their thoughts.

- Mr. Lahsaie asked if San Diego was a part of the SoCalREN. Ms. Lowe answered that the SoCalREN covers only the Southern California Edison service territory in Los Angeles County and Orange County. She added that REN territories cannot overlap.

- Ms. Bensoussan shared that Chula Vista is extremely interested in joining a REN. With the budget and monies available it would be unwise to not be a part of a REN. She added that even though it is early and there will not be any decisions until December 2014, SANDAG should keep a close eye on the process and determine next steps for the San Diego region.

- Ms. Freedman discussed with the EWG the next steps for a future San Diego REN. She informed that the CPUC released a scoping memo the week of January 19, 2014, that set a schedule for the first phase. Phase I continues the first two pilot RENS and continues the successful LGPs, third-party programs, and the energy efficiency portfolios. Successful programs will continue so that a policy can be developed for the RENs starting after 2016.

- Mr. Nagy asked about the budget and inquired if the money collected from the RENs was distributed to the entire REN or to each individual utility. Ms. Freedman answered that the money goes to the lead fiscal agency. She informed that other RENs are looking into using third-party implementers to manage most of the programs. The CPUC also recognizes that the REN startups are going to take time and cost a little more to get the message out and get people to start building on it.

- Ms. Bensoussan commented that she thought the water efficiency programs that the BayREN is working on are very interesting, and she would like to find out more information. Ms. Freedman agreed that water efficiency would absolutely be an area to find more information on. She suggested that the group pool information over the next year. If San Diego is interested in a REN, then stakeholders should be thinking about potential program ideas.

- Ms. Race asked if a REN application would only be available at Phase III in November. Ms. Freedman answered that applications will not necessarily occur in Phase III since the CPUC already came out with language that says RENs can apply directly to the CPUC at any time. She added that it would make sense to plan over the next several months the policy areas and programs that will be in an application.

- Vice Chair Anders asked for details on the flow of money for the REN model since it is ratepayer money and that typically does not leave the region and go to the CPUC for dispersal. Ms. Freedman explained that the RENs apply directly to the CPUC and if approved, then the CPUC directs the local utility to enter into a contract for an agreed upon funding amount.
ITEM #7: SAN DIEGO FORWARD: THE REGIONAL PLAN: EMERGING TECHNOLOGIES WHITE PAPER

James Dreisbach-Towle, SANDAG, gave a presentation on the Emerging Technologies White Paper. Mr. Dreisbach-Towle explained that the white paper is to inform San Diego Forward: The Regional Plan. He added that he would like to gather input and direction from the EWG. He explained that Intelligent Transportation Services (ITS) team works on the application of technology to the transportation infrastructure to maximize efficiency and effectiveness.

Mr. Dreisbach-Towle gave an emerging technologies overview and wanted to show the areas of technology that will influence lives. In particular, people are looking at technology that will influence how people work, live, and play. He added that currently, California is one of two states that have legislation in place that allows autonomous vehicles to operate and 19 other states have legislation pending. Autonomous vehicles can increase the fuel efficiency with technology that can smooth out the areas that waste the most fuel, such as the starting, stopping, and lane changing on highways. He added that the ITS team is looking at infrastructure technology, smart intersections, cooperative systems that work together, and autonomous vehicles.

Mr. Dreisbach-Towle asked the EWG for input on the draft outline for the Emerging Technologies white paper. He wanted to know if the ITS department was looking at the right areas and which policies ITS should be looking at.

EWG members offered the following comments:

- Mr. Manasjan shared that he is concerned that society is continuing the interest of the single use vehicle instead of focusing more on mass transportation. He suggested that the white paper consider mass transportation and how it relates to the carbon reduction goals.
- Ms. Bensoussan suggested that the white paper consider transit for older residents that starts at their homes. Seniors would be less likely to use a vehicle if they had a transit service that comes to their door. Mr. Dreisbach-Towle shared that Ms. Bensoussan is referring to the last mile issue that gets transit users to the main transit station.
- Mr. Nagy voiced that it would be good to have some type of agreement to work with local universities and institutions. Those entities could help get the idea from conception to reality.

ITEM #8: UPCOMING MEETINGS

The next meeting of the EWG is scheduled from 11:30 a.m. to 1 p.m. on Thursday, February 27, 2014.

Vice Chair Anders adjourned the meeting at 1:07 p.m.
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<td>Business</td>
<td>San Diego Regional Chamber of Commerce</td>
<td>Mike Evans</td>
<td>Member</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Michael Nagy</td>
<td>Alternate</td>
<td>YES</td>
</tr>
<tr>
<td>Economic</td>
<td>North County Economic Development Council</td>
<td>David Lloyd</td>
<td>Member</td>
<td>NO</td>
</tr>
<tr>
<td>Development</td>
<td>South County Economic Development Council</td>
<td>Hon. Pamela Bensoussan</td>
<td>Alternate</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>CleanTECH San Diego</td>
<td>Jason Anderson</td>
<td>Member</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Josh Harman</td>
<td>Alternate</td>
<td>YES</td>
</tr>
</tbody>
</table>

**OTHER ATTENDEES:**

Bob Beamon, City of Chula Vista  
Katie Benson, City of Del Mar  
Josh Brock, SDG&E  
Kimberly Burke, SDG&E  
Donna Chralowicz, City of San Diego  
Steve Ferguson, Honeywell  
Lindsey Hawes, CCSE  
Amanda Jenison, SDG&E  
Mo Lahsaie, City of Oceanside  
Cheryl Laskowski, Atkins  
Jenny Lybech, Port of San Diego  
Linda Pratt, City of San Diego  
Alisa Reinhardt, San Diego Regional Chamber of Commerce  
Terrie Seckie, Willdan Energy Solutions  
Thomas Sepulvado, Rep. Juan Vargas CA-51  
John Wotzka, member of public  
Jeff Wyner, City of Escondido  
James Dreisbach-Towle, SANDAG  
Alex Estrella, SANDAG  
Susan Freedman, SANDAG  
Sarah McCutcheon, SANDAG  
Anna Lowe, SANDAG  
Rob Rundle, SANDAG  
Allison Wood, SANDAG
Introduction

For the last several months, the Regional Energy Working Group (EWG) has been overseeing a Technical Update to the Regional Energy Strategy (RES). The update will demonstrate progress toward RES goals, extend the energy and climate forecasts to 2050 and be used in development of San Diego Forward: The Regional Plan (Regional Plan). Today staff will present A) an update to the RES chapter: Key Policy Drivers, and B) a final draft of the updated RES Goals for discussion by the EWG. Attachment 1 to this report is an explanation of the changes between the 2009 and 2014 chapters on Key Policy Drivers. Attachment 2 is the 2014 draft RES chapter on Key Policy Drivers, and Attachment 3 is the latest update to the RES goal summary reports.

Discussion

The SANDAG Regional Comprehensive Plan from 2004 incorporated policies from the 2030 RES adopted in 2003. Since then, the 2030 RES was updated in 2009 and this technical update will serve as a resource for the Regional Plan (www.sdforward.com/).

A) Key Policy Drivers

Changes to the Key Policy Drivers chapter focused on updating relevant energy and climate change policies. Many energy and climate policies are included in the RES Goals chapter as part of the narrative about each subject area. This policy chapter focuses on the largest drivers for clean energy supplies, energy efficiency, and reductions to greenhouse gas (GHG) emissions. Staff references included:

- Draft Proposed First Update to the Climate Change Scoping Plan (February 10, 2014 version and Discussion Draft of October 1, 2013), California Air Resources Board
- California Long-Term Energy Efficiency Strategic Plan (Strategic Plan) (2008 and 2011 update), California Public Utilities Commission

B) RES Goals

At the October EWG meeting, staff presented the draft goal summary reports, and edits to the Goals chapter of the RES. These also were presented to the Regional Planning Committee (RPC) at its November meeting. Comments received from EWG and RPC have been addressed in the attached
final draft goal summary reports (Attachment 3). For each RES Goal, the summary report describes progress made since RES adoption in 2009, relevant data and monitoring methods, and recommendations for continued progress toward achieving the goal. There are 11 regional goals of the RES:

1. Energy Efficiency and Conservation
2. Renewable Energy
3. Distributed Generation
4. Energy and Water
5. Peak Demand
6. Smart Energy (formerly Smart Grid)
7. Natural Gas Power Plants
8. Transportation Fuels
9. Land Use and Transportation Planning
10. Energy and Borders
11. Clean Energy Economy

**Next Steps**

At a future meeting, EWG will be presented with the 2012 regional GHG emissions inventory and the updated existing conditions and future projections chapter of the RES. All components of the RES Technical Update will be used to inform the energy policies of the Regional Plan.

Attachments: 1. Explanation of Revisions to the RES Chapter on Key Policy Drivers
2. Revised Chapter on Key Policy Drivers
3. Final Draft RES Goal Summary Reports

Key Staff Contact: Allison Wood, (619) 699-1973, allison.wood@sandag.org
Key Policy Drivers

3.1 California Preferred Loading Order

The CPUC and Energy Commission adopted a preferred loading order to meet goals for satisfying the state’s growing demand for electricity and significantly reducing the level of GHG emissions responsible for global climate change. The loading order calls for achieving these goals by placing top priority on first increasing energy efficiency and demand response, then with new generation from renewable and distributed generation resources, and finally with clean fossil-fueled generation and infrastructure improvements.

The California Preferred Loading Order

1. Increase energy efficiency.
2. Increase demand response – temporary reduction or shift in energy use during peak hours.
3. Meet generation needs with renewable and distributed generation resources.
4. Meet new generation needs with clean fossil-fueled generation and infrastructure improvements.

The components of the preferred loading order are addressed throughout the RES: Section 5.1 - Energy Efficiency and Conservation; Section 5.2 - Renewable Energy, including transmission issues; Section 5.3 - Distributed Generation; Section 5.5 - Peak Demand (i.e., demand response); and Section 5.7 - Natural Gas Power Plants.

3.2 Global Climate Change

3.2.1 Overview

Global climate change has emerged as the defining challenge of the 21st century, with the Intergovernmental Panel on Climate Change (IPCC) reporting that GHG emissions from human activities have begun to destabilize the Earth’s climate. The IPCC is the leading international scientific body for the assessment of climate change, established by the United Nations Environment Program (UNEP) and the World Meteorological Organization (WMO) to provide the world with a clear scientific view on the current state of climate change and its potential environmental and socio-economic

SANDAG Regional Energy Strategy
consequences. The changing climate threatens the public health, economy, and environment of the San Diego region, California, and the entire world. Projected adverse climate change impacts to the San Diego region include hotter temperatures, sea level rise, water shortages, more frequent and intense wildfires, increased risks to public health, loss of native plant and animal species, increased demand for electricity, and subsequent economic losses. Significant actions are needed to both reduce the region’s contribution to climate change and adapt to the impacts of climate change.

A more detailed and up-to-date discussion of global climate change and its impacts will be provided in the SANDAG Climate Action Strategy, which is anticipated for completion in March 2010. For discussion of the projected impacts of climate change on the San Diego region, please see San Diego’s Changing Climate: A Regional Wake-Up Call – A Summary of the Focus 2050 Study by the San Diego Foundation.

3.2.2 Key State Climate Change Policy and Legislation

California Global Warming Solutions Act of 2006 (Assembly Bill 32)

California has responded to the challenge of climate change in many ways, including passage of the California Global Warming Solutions Act of 2006 (Assembly Bill (AB) 32, Chapter 488, Statutes of 2006). This legislation establishes the 1990 emissions level as the statewide limit for 2020; an approximately 15 percent reduction from the baseline 2006 level. AB 32 calls for regulatory market mechanisms to achieve the GHG emissions reduction target. Many of the state’s energy policies and programs are now significantly shaped, at least in part, by the requirements and spirit of AB 32.

Climate Change Scoping Plan

The CARB Climate Change Scoping Plan report outlines the main strategies for meeting the AB 32 GHG reduction target, which include a range of actions including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms like a cap-and-trade system, and a cost of implementation fee to fund the program. CARB and other state agencies must adopt these reduction measures by the start of 2011, and already a number of “early action” measures required by Scoping Plan have been adopted, such as the Low Carbon Fuel Standard (LCFS). In addition, the Scoping Plan emphasizes the need to better connect land use and transportation planning to help the state achieve its GHG emissions reduction target for 2020.

Senate Bill 375

As described in the introduction, Senate Bill (SB) 375 (Statutes of 2008) requires MPOs like SANDAG to create a Sustainable Communities Strategy (SCS) that integrates the

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transportation network with development patterns in a way that achieves GHG emissions reduction targets from passenger cars and light-duty trucks while meeting housing needs and other regional planning objectives. The SCS must demonstrate how changes to land use patterns, transportation infrastructure investments, funding allocations, policies, or any other measures will achieve the targets to be established through the SB 375 process in the next update of the RTP.

**Governor’s Executive Order S-3-05**

Governor’s Executive Order S-3-05 establishes a long-term climate goal for the state of reducing emissions an additional 80 percent below the 1990 level by 2050 (an approximately 95 percent reduction from the baseline 2006 level). Although not required by statute, the 2050 target is based on the scientifically-supported level of emissions reduction required for climate stabilization and used as the long-term driver for state policy development.

**3.2.3 Greenhouse Gas Emissions Reduction Targets**

While achieving the near-term goal of reducing statewide GHG emissions to the 1990 level by 2020 is ambitious but likely achievable with available policy measures and technology options, the long-term goal of reducing statewide GHG emissions to 80 percent below the 1990 level by 2050 will require fundamental changes in policy, technology, and behavior.

Although the state does not set economy-wide reduction targets for specific geographic regions of the state, projections showing the theoretical emissions reductions necessary to reach the 2020 and 2050 targets illustrate the magnitude of change the region needs to make over the next four decades (Figure II-1). It should be noted that deep cuts in GHG emissions required for climate stabilization must also occur during a period of projected growth in population and economic output.

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1 Except for SB 375, which will lead to the establishment of regional GHG emission reduction targets for passenger cars and light-duty trucks.

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Environmental changes caused by climate change also will impact energy production. In the San Diego region and statewide, climate change is projected to increase the risk of drought or water shortages during summer months. In addition, winter runoff may increase and increase the risk of flooding. As a result, hydropower generation may be adversely affected. Lower runoff flows would decrease hydropower generation while higher flows often must be spilled past dams without generating any electricity. Lost hydropower generation would have to be replaced with electricity generated from renewable sources, or else GHG emissions from electricity generation would increase.

In addition, increased average temperatures and longer and more extreme heat events associated with climate change are expected to increase peak demand for electricity. In many cases, relatively inefficient and high cost “peaker plants” are utilized to meet peak demand. As a result, demand response strategies will become an even more important part of the region’s energy strategy as a result of climate change.

More discussion of the connection between how we use energy, the deep GHG reductions required to address climate change, and the regional impacts of climate change will be provided in the forthcoming SANDAG Climate Action Strategy.

3.3 The RES Approach to Climate Change

Achieving the near-term 2020 target for GHG emissions reduction will likely focus on increasing energy efficiency and the use of renewable energy and clean distributed energy systems. By contrast, reaching the 2050 target for GHG emission reductions will require more fundamental changes in how we use energy through technology and...
behavior change. The recommended actions of the RES start the region on a long-term path to do its part for climate stabilization. Consistent with the state's policy framework, the RES focuses primarily on strategies for reducing GHG emissions from electricity generation and natural gas end use by increasing energy efficiency and reducing the carbon intensity of electricity supplies.

The three primary strategies for reducing GHG emissions from fuel use in the on-road transportation sector are to: (1) improve vehicle fuel efficiency, (2) reduce the carbon content of transportation fuels, and (3) better integrate land use patterns and transportation infrastructure through improved planning. The RES focuses on reducing GHG emissions from transportation fuel consumption by transitioning the region away from petroleum-based fuels and reducing automobile dependence through a variety of policy measures, including improved integration of land use and transportation planning, smart growth development patterns, promoting walking, bicycling, and public transit as viable travel options, managing transportation demand, pricing vehicle trips and parking, and improving transportation system efficiency.

Comment [sf12]: The information in these paragraphs was used under Sections 3.4.2 (energy) and 3.4.3 (transportation) in describing the Scoping Plan.
Key Policy Drivers

California has promoted energy efficiency, clean energy supplies and alternative fuels through policies and programs since the 1970s. These policies and programs have made California a leader in the nation and helped keep per capita electricity consumption flat over decades. SANDAG has taken an active role in regional energy planning since 2000 when problems with state electricity restructuring arose.

The RES recognizes that the state and federal governments and utilities have significant control over certain energy policy areas. The RES focuses on the opportunities and authorities that SANDAG and its member agencies could take advantage of to achieve both local and regional goals related to energy and climate change.


Since 2003, the California Energy Commission (Energy Commission) adopts an Integrated Energy Policy Report (IEPR) every two years and an update every other year (SB 1389, Chapter 568, Statutes of 2002). The IEPR serves as the state’s energy policy blueprint, similar to the RES for the San Diego region. Over the years, the region has provided input into the state’s process and utilized the IEPR in regional policymaking decisions. The IEPR provides energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety. Through the IEPR, the Energy Commission also performs an independent analysis of each utilities electricity demand forecast, which is used in RES energy forecasting and existing conditions.

3.2 California Preferred Loading Order for Electricity Resources

The California Public Utilities Commission (CPUC) and Energy Commission follow a “preferred loading order” to meet goals for satisfying the state’s growing demand for electricity and significantly reducing the level of GHG emissions. The loading order calls for achieving these goals by placing top priority on first increasing energy efficiency and demand response, as shown below. Energy policies that the region chooses to support should be consistent with the “preferred loading order.”

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1 Electricity consumption is the amount of energy consumed in a process or system, or by an organization or society. As population continues to grow, the per capita (or per person) amount of energy used in California has remained flat through extensive energy efficiency and conservation measures.

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California’s Preferred Loading Order

1. Increase energy efficiency.
2. Increase demand response – temporary reduction or shift in energy use during peak hours.
3. Meet generation needs with renewable and distributed generation resources.
4. Meet new generation needs with clean fossil-fueled generation and infrastructure improvements.

3.3 California Long-Term Energy Efficiency Strategic Plan

In 2008, the CPUC led the development of the California Long-Term Energy Efficiency Strategic Plan (Strategic Plan) to achieve maximum energy efficiency savings across all sectors, including local government. Updated in 2011, this Strategic Plan identifies four “Big Bold Energy Efficiency Strategies” to help meet AB 32 GHG reduction targets.

1. All new residential construction in CA will be zero net energy (ZNE) by 2020;
2. All new commercial construction in CA will be ZNE by 2030;
3. Heating, ventilation, and air conditioning (HVAC) 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 specifically calls on 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.
- 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.
The Strategic Plan 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.

3.4 California Global Warming Solutions Act (Assembly Bill 32)

The California Global Warming Solutions Act (AB 32, Chapter 488, Statutes of 2006) established the 1990 GHG emissions level as the statewide limit for 2020; an approximately 15 percent reduction from the baseline 2006 level. AB 32 called for regulatory and market mechanisms to achieve the GHG reduction target. Many of the state’s energy policies and programs are now shaped, at least in part, by the requirements and spirit of AB 32.

AB 32 codified then Governor Schwarzenegger’s Executive Order (EO) S-03-05 that established the statewide target for reduction of GHG emissions to 1990 levels by 2020. The EO also called for long term GHG reductions to 80 percent below the 1990 level by 2050. Although not required by AB 32 or the EO, the 2013 Scoping Plan update (described below) begins to explore ways to reduce emissions beyond the 2020 target by continuing to pursue the maximum technologically feasible and cost-effective actions across several economic sectors.

3.4.1 AB 32 Climate Change Scoping Plan

In October 2013, CARB released a discussion draft that updates the 2008 Climate Change Scoping Plan. The statewide GHG reduction target for 2020 and primary methods to meet the target are shown in the next table. The Scoping Plan and subsequent updates outline the main strategies for meeting the 2020 target, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions and market-based mechanisms. The majority of GHG emissions to be reduced derive from energy and transportation fuels. The biggest policy drivers for these measures are outlined below the table.
Meeting the 2020 Emissions Target for California

<table>
<thead>
<tr>
<th>AB32 Baseline 2020 Forecast Emissions</th>
<th>509 MMT</th>
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<tbody>
<tr>
<td>2020 Target (remaining GHG emissions)</td>
<td>431 MMT</td>
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<tr>
<td>Emissions to be Reduced</td>
<td>78 million metric tons (MMT)</td>
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<td>Largest Sources of GHG Reductions</td>
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<td>Energy</td>
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<tr>
<td>Energy Efficiency</td>
<td>12*</td>
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<tr>
<td>Renewable Portfolio Standard</td>
<td>11*</td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
</tr>
<tr>
<td>Low Carbon Fuel Standard</td>
<td>15*</td>
</tr>
<tr>
<td>Pavley vehicle standards (Clean Cars)</td>
<td>4*</td>
</tr>
<tr>
<td>SB 375 (Sustainable Communities Strategies)</td>
<td>3</td>
</tr>
<tr>
<td>Cap-and-Trade</td>
<td></td>
</tr>
<tr>
<td>All Other Measures</td>
<td>23 MMT**</td>
</tr>
<tr>
<td></td>
<td>7 MMT</td>
</tr>
</tbody>
</table>

* Numbers shown are from CARB in 2013. Updated GHG reductions from Scoping Plan measures to be released by CARB in coming months.

3.4.2 Energy

Efficiency: Zero Net Energy

Achieving the State’s zero net energy (ZNE) building goals is important to achieve climate targets. In 2008, the CPUC set forth ZNE goals in the Long-Term Energy Efficiency Strategic Plan discussed earlier in this section. The Strategic Plan called for all new residential buildings to be ZNE by 2020, new commercial buildings shall be ZNE by 2030, and half of existing commercial buildings shall be retrofitted to ZNE by 2030.

In 2009, AB 758 (Skinner, Chapter 470) created the Comprehensive Energy Efficiency Program to achieve greater energy efficiency in all of California’s existing buildings. The Energy Commission was directed to develop an Action Plan for 758, which identifies solutions for energy efficiency issues in California’s existing buildings.

Efficiency: Proposition 39

In 2012 California voters approved the California Clean Energy Jobs Act (Prop 39). Subsequently through Senate Bill 73 (Skinner, Chapter 29, Statutes of 2013), the Prop 39 tax mechanism will provide a significant source of new revenue (an estimated 2.75 billion over five years) to support energy efficiency and clean energy projects in California’s public schools (K–12) and community colleges.

Renewable Portfolio Standard

Established in 2002 under Senate Bill 1078, accelerated in 2006 under Senate Bill 107 and expanded in 2011 under Senate Bill 2, California's Renewables Portfolio Standard
(RPS) is one of the most ambitious renewable energy standards in the country. The RPS program requires investor-owned utilities (IOUs), electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33% of total procurement by 2020. CARB established the Renewable Electricity Standard (Resolution 10-23) in 2010 to require renewable electricity targets for all retail sellers of electricity, including publicly-owned utilities (POUs).

3.4.3 Transportation

Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS) was established in 2007 through EO S-01-07. It requires producers of petroleum-based fuels to reduce the carbon intensity of their products, beginning with a quarter of a percent in 2011 culminating in a 10 percent total reduction in 2020. Petroleum importers, refiners and wholesalers can either develop their own low carbon fuel products, or buy LCFS Credits from companies that develop and sell alternative fuels, such as biofuels, electricity, natural gas or hydrogen.

The state actively plans for hydrogen and electric vehicles, known as zero emission vehicles (ZEV), and established requirements for automakers to provide plug-in electric and hydrogen vehicles for sale in California by 2020. In 2012, EO B-16-2012 directed state government to help accelerate the market for ZEVs in California and established several milestones on a path toward 1.5 million ZEVs in California by 2025. In 2013 the state released a ZEV Action Plan with specific strategies that state agencies will take.

Alternative and Renewable Fuel and Vehicle Technology Program

The Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) was established in 2007 through passage of AB 118 (Núñez, Chapter 750, Statutes of 2007) and reauthorized in 2013 by AB 8 (Perea, Chapter 401, Statutes of 2013) through January 1, 2024. It has provided funding to develop and deploy alternative and renewable fuels and technologies, and help attain California’s climate change and petroleum dependence policies. The Energy Commission will invest a total $1.5 billion between 2009 and 2024 to support development and deployment of zero- and low-emission vehicles and low-carbon fuels.

Clean Cars – Pavley Standard

The Pavley standard requires GHG emission reductions in new passenger vehicles from 2009 through 2016. The U.S. EPA granted California the authority to implement GHG emission reduction standards for new passenger cars, pickup trucks and sport utility vehicles in June 2009. In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of
smog, soot and GHG emissions and requirements for greater numbers of ZEVs into a single package of standards called “Advanced Clean Cars.”

**Senate Bill 375 – Sustainable Communities Strategy**

SB 375 (Statutes of 2008) requires Metropolitan Planning Organizations (MPOs) like SANDAG to create a Sustainable Communities Strategy (SCS) that integrates the transportation network with development patterns in a way that achieves GHG emissions reduction targets from passenger cars and light-duty trucks while meeting housing needs and other regional planning objectives. The SCS must demonstrate how changes to land use patterns, transportation infrastructure investments, funding allocations, policies, or any other measures will achieve the per capita GHG reduction targets established by CARB.

In October 2011, the 2050 Regional Transportation and Sustainable Communities Strategy (RTP/SCS) layed out a plan for investing $214 billion in local, state, and federal transportation funds expected to come into the region over the next 40 years. The 2050 RTP/SCS includes recommended actions that support energy efficiency, alternative fuels and GHG reductions. The RES Technical Update will help inform future regional plans including San Diego Forward: The Regional Plan.

**3.4.4 Cap-and-Trade Regulation**

The Scoping Plan recommended development of a state Cap-and-Trade program that links with other Western Climate Initiative partner programs to create a regional market system. The Cap-and-Trade regulation established a declining cap on approximately 85 percent of total statewide GHG emissions. Under the regulation, CARB issues allowances equal to the total amount of allowable emissions over a given compliance period and distributes these to regulated entities. One allowance equals one metric ton of greenhouse gases. Each regulated entity must hold allowances equal to its emissions.

Electric generating utilities, electricity importers and large industrial facilities became subject to the program beginning in 2013, and fuel distributors are added to the program in 2015. The Cap-and-Trade program works in concert with direct regulatory measures to provide an additional economic incentive to reduce emissions. Cap-and-Trade revenues will provide a significant source of new revenue to support GHG reduction measures.
Energy Efficiency and Conservation

Reduce per capita electricity consumption by 20 percent by 2030 in order to keep total electricity consumption flat.

Overview

Energy efficiency is the first priority in the state’s preferred loading order for meeting new energy demands and several state policies and programs work to reduce energy use through building and appliance efficiency. Local governments have a broad range of energy-related authorities and opportunities to influence energy efficiency in municipal facilities and their communities.

Progress since RES Adoption

<table>
<thead>
<tr>
<th>SDG&amp;E Local Government Partner Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Chula Vista, City of San Diego, County of San Diego, Port of San Diego and SANDAG have Local Government Energy Efficiency Partnerships (LGP) with SDG&amp;E. The SANDAG LGP created the Energy Roadmap Program to assist member agencies with energy planning and implementation. The LGPs collaborate on energy efficiency initiatives and programs including:</td>
</tr>
<tr>
<td>• San Diego Regional Climate Collaborative</td>
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<tr>
<td>• Regional Energy Mapping Project</td>
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<tr>
<td>• San Diego Regional Energy Partnership (SDREP)</td>
</tr>
</tbody>
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<table>
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<tr>
<th>Building Upgrade Programs</th>
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<tbody>
<tr>
<td>City of Chula Vista, City of San Diego and County of San Diego developed single- and multi-family home upgrade programs using American Recovery and Reinvestment Act (ARRA) funds. These funds, which expired in 2012, added incentives and workforce training to existing SDG&amp;E programs. Energy Upgrade California (EUC) began as the state brand for all residential whole-house upgrade programs. From December 2010 – February 2013, SDG&amp;E’s EUC program projects and savings were 87 Basic Path projects with an average 10% savings per project and 308 Advanced Path projects.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Financing Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financing programs help to enable property owners to retrofit their buildings by overcoming the hurdle of upfront capital.</td>
</tr>
<tr>
<td>• Property Assessed Clean Energy (PACE) programs assist commercial and residential customers through AB 811 and SB 555 financing districts</td>
</tr>
<tr>
<td>• On Bill Financing program from SDG&amp;E offers zero percent financing for eligible commercial and public agency customers</td>
</tr>
<tr>
<td>• Traditional and non-traditional loan products</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regional Energy Networks</th>
</tr>
</thead>
<tbody>
<tr>
<td>For 2013, the CPUC accepted a new regionally-focused and local government led structure termed Regional Energy Network (REN) as a mechanism to continue and expand local government ARRA-funded energy programs and implement climate action plans. RENs were approved as pilot programs in the Bay Area (Bay REN) and Southern California (SoCal REN) and complement LGPs.</td>
</tr>
</tbody>
</table>
**Planning Needs Going Forward**

- Support energy efficiency policies in local and regional plans, such as AB 758: CA Comprehensive Energy Efficiency Program for Existing Buildings
- Facilitate consistent permitting practices across the region
- Promote building energy ratings and disclosure
- Increase local availability and awareness of finance programs
- Support implementation of Proposition 39 and resulting energy and cost savings

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

![Graph showing projected energy efficiency impacts](source: CA Center for Sustainable Energy for 2030 RES, 2009)

**Monitoring**

- Evaluate progress on statewide Zero Net Energy (ZNE) goals
- Track type and number of local building retrofits against program goals
- Track regional electricity and GHG reductions from energy efficiency programs

**Resources**

- Statewide Energy Efficiency Strategic Plan
- California Center for Sustainable Energy
- San Diego Regional Climate Collaborative

**Recommendations**

- Explore potential benefits of a San Diego Regional Energy Network.
- Assist local governments in retrofitting their own facilities.
- Identify and expand effective energy efficiency programs.
- Support business and residential retrofit opportunities, and identify successful outreach methods.
Overview
After energy efficiency and demand response, the state’s preferred loading order calls for meeting electricity needs and reducing GHG emissions with renewable resources. The renewable energy goal specifically focuses on utility-scale renewable energy projects, including wind energy, geothermal, biofuel, hydroelectricity, and large scale solar photovoltaics (PV). Small-scale renewable energy generation, such as rooftop solar PV, is addressed in the Distributed Generation goal.

Progress since RES Adoption

<table>
<thead>
<tr>
<th>SDG&amp;E Renewable Energy Procurement</th>
<th>During 2012, SDG&amp;E served 20.3 percent of their retail electricity sales with utility-scale renewable power. The percentage is up from 10.2 percent in 2009.</th>
</tr>
</thead>
<tbody>
<tr>
<td>County of San Diego</td>
<td>The County of San Diego updated its Strategic Energy Plan and adopted a Wind Energy Ordinance to help streamline the siting and permitting processes within the unincorporated portions of the County. The Board of Supervisors directed staff to prepare a comprehensive renewable energy plan to streamline the development of large scale renewable energy projects.</td>
</tr>
<tr>
<td>Desert Renewable Energy Conservation Plan</td>
<td>The purpose of the Desert Renewable Energy Conservation Plan (DRECP) is to conserve and manage plant and wildlife communities in the desert regions of California while facilitating the timely permitting of compatible renewable energy projects. The DRECP is being prepared by a collaboration of state and federal agencies, with input from local governments, environmental organizations, industry, and other interested parties.</td>
</tr>
</tbody>
</table>

Planning Needs Going Forward
- Identify possible locations for utility-scale renewable energy projects within the San Diego region
- Consider energy storage technologies to advance renewable energy goals

Monitoring
- Track SDG&E renewable energy procurement
- Monitor regional renewable energy projects deployed since 2009
- Monitor development and implementation of the DRECP and Senate Bill 618 regulations for solar-use easements on Williamson Act lands

Renewable Energy
Support the development of renewable energy resources to meet a 33 percent renewable portfolio standard (RPS) by 2020 and exceed 33 percent beyond 2020.
Renewable Energy

SDG&E Renewable Energy Procurement

RPS Target: 33% by 2020

0.9% 3.7% 4.5% 5.2% 5.6% 5.2% 6.1% 10.2% 11.9% 20.8% 20.3%

Source: SDG&E, 2013.

SDG&E 2012 Renewable Sources

Wind 50%
Geo-thermal 30%
Biofuel 19%
Hydro & Solar PV 1%

Note: Distributed generation not included

Resources

- County of San Diego Energy Management Program
- Renewable Energy on Contaminated Lands Project
- CPUC Renewable Portfolio Standard Implementation
- Desert Renewable Energy Conservation Plan

Recommendations

- Advance efforts to site utility-scale renewable energy resources and associated infrastructure in the San Diego region.
- Participate in County of San Diego renewable energy planning.
Distributed Generation

Increase the total amount of clean distributed generation (renewable and non-renewable) to reduce peak demand and diversify electricity resources in the San Diego region.

Overview
Distributed generation (DG) includes resources on the customer side of the meter including: solar, combined heat and power (CHP), fuel cells and energy storage.

Progress since RES Adoption

<table>
<thead>
<tr>
<th>Project Financing</th>
<th>Financing programs have increased the uptake of both residential and commercial DG installations:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Self-Generation Incentive Program and California Solar Initiative</td>
</tr>
<tr>
<td></td>
<td>- Property Assessed Clean Energy programs</td>
</tr>
<tr>
<td></td>
<td>- California Energy Commission loans</td>
</tr>
</tbody>
</table>

| Net Energy Metering | Net Energy Metering (NEM) allows customers with solar electric or wind systems (under 1 MW) to earn credit for excess power they produce. In 2010, NEM caps were raised from 2.5% to 5% of each utility’s aggregate customer peak demand. For SDG&E, the NEM cap is 606 MW and 184 MW is installed. |

| Feed-in Tariff | As of July 2013, the state’s Renewable Market Adjusting Tariff (RE-Mat) implements the renewable resource feed-in tariff (FIT) program for up to 750 MW of renewable resources from qualifying facilities (QF) no larger than 3 MW. The program cap for SDG&E’s RE-Mat and related programs is 48.8 MW—SDG&E’s allocated share of the total statewide program cap of 750 MW. |

| Solar PV Installations | As of December 2013, the San Diego region has over 14,000 rooftop solar installations producing nearly 150 MW. This is triple the 49 MW of installed solar PV in 2008. |

| UCSD Microgrid | The microgrid at UC San Diego serves over 45,000 people, 13 million square feet in 450 buildings across 1,200 acres. It generates 90 percent of the campus’ electricity using two 13.5 MW gas turbines, a 3 MW steam turbine, 1.2 MW of solar and a 2 MW power purchase agreement (PPA) for fuel cell power that uses methane from a wastewater treatment plan. |

Regional Needs
- Planning for DG systems in the context of zero net energy buildings
- Incorporation of DG policies into local government plans
- Identify project opportunities for innovative DG combinations such as energy storage and plug-in electric vehicles using smart communication technologies

Monitoring
- Implementation of rate design changes and impacts to DG installations
- Electric Program Investment Charge (EPIC) program
Resources

- 2012 IEPR Update (CHP Assessment and Renewable Action Plan)

Recommendations

- Support integration of DG goals into local government plans.
- Support policies to increase cost-effective installations of customer-side DG systems.
- Support state targets for CHP and energy storage.
Overview
In the San Diego region, water and energy resources are closely connected. The amount and ways water is supplied and used in the region require large amounts of energy. Water-related energy uses include:
- End uses: heating, cooling, on-site pumping
- Upstream uses: surface conveyance, pumping, treatment, distribution
- Downstream uses: waste water pumping, treatment, recycling

Progress since RES Adoption

**State Water-Energy Nexus Initiatives**
The Public Utilities Commission authorized programs to determine energy savings that may be realized through water conservation measures and how cost effectiveness should be analyzed for water-energy programs. Research by the Energy Commission found that water and energy resources are inextricably connected, and termed it as the Water-Energy Nexus.

**San Diego County Water Authority**
The San Diego County Water Authority (SDCWA) is working on long-term actions to ensure efficient energy use at SDCWA facilities. SDCWA completed a Climate Action Plan in conjunction with its 2013 Master Plan to address climate change as it relates to activities within its jurisdiction.

**SDG&E-SDCWA programs**
Collaborative SDG&E and SDCWA activities include:
- High-efficiency clothes washer rebates (over 100,000 residential and 9,100 commercial installs)
- Energy efficiency assessments for water agencies (103 facilities)
- Showerhead distributions (more than 500,000)
- Pre-rinse spray valve installations at more than 300 restaurants

**Direct Potable Reuse Law**
SB 322 (Senator Hueso, San Diego) established a process to expand the state’s water recycling program. Signed into law October 8, 2013, the Act requires the State Department of Public Health, in consultation with the State Water Resources Control Board, to develop criteria for direct potable reuse.

Planning Needs Going Forward
- Inclusion of water-energy nexus measures in Climate Action Planning
- Identification and support for water reuse policies that reduce energy needs
- Collaboration with water agencies on water-energy nexus programs and climate change efforts
Energy and Water

<table>
<thead>
<tr>
<th>Water Supply</th>
<th>Average Energy Intensity to Supply Southern California (kWh/Acre Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>groundwater</td>
<td>593</td>
</tr>
<tr>
<td>Central Plant Recycled Water</td>
<td>1,129</td>
</tr>
<tr>
<td>Colorado River Aqueduct</td>
<td>1,976</td>
</tr>
<tr>
<td>State Water Project</td>
<td>2,839</td>
</tr>
<tr>
<td>Desalination</td>
<td>4,000</td>
</tr>
</tbody>
</table>


Monitoring

- Total annual water use and water-related energy use
- Total local water supplies and energy intensity of each
- Water-energy program metrics
- Water reuse demonstration projects

Water-Related Energy Use in CA

- Residential, Commercial and Industrial Water End Use: 11%
- Residential, Commercial and Industrial Water Supply and Treatment: 3%
- Agricultural End Use: 3%
- Agricultural Water Supply and Treatment: 1%
- Wastewater Treatment: 1%

Source: Refining Estimates of Water-Related Energy Use in California, CEC

Resources

- City of San Diego Recycled Water Study (2012) and Water Supply Resources
- San Diego County Water Authority
- California Sustainability Alliance Water-Energy Toolkit (2013)
- California Public Utilities Commission Water-Energy Nexus Programs

Recommendations

- Support water conservation measures that reduce energy use.
- Evaluate water reuse policies that local governments can consider.
- Coordinate planning and evaluate intersections among energy, water and climate change.
Overview
After energy efficiency, demand response is the next priority in the state’s preferred loading order for meeting new energy needs and reducing GHG emissions. Addressing peak demand can offer additional consumer benefits like cost savings and little or no environmental impact. Several of the RES goals also address peak demand; see goals for Energy Efficiency and Conservation, Renewable Energy, Distributed Generation, Smart Energy, and Natural Gas Power Plants.

Progress since RES Adoption

<table>
<thead>
<tr>
<th>SDG&amp;E Demand Response Programs</th>
<th>SDG&amp;E has programs to encourage residences and businesses to reduce use during peak hours (between 11 A.M. and 6 P.M.) on high demand days including Reduce Your Use, Summer Saver Program and Critical Peak Pricing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time-of-Use Rates for EV Charging</td>
<td>SDG&amp;E offers two plug-in electric vehicle time-of-use (EV-TOU) rates for customers to receive lower rates for charging their vehicles during off-peak hours, between midnight and 5 A.M. Customers that sign up for the EV-TOU can either use their existing household meter to track electricity of both the home and EV, or they can install a separate meter for the EV.</td>
</tr>
<tr>
<td>Energy Storage Targets</td>
<td>Assembly Bill 2514 (Skinner, 2010) directed the CPUC to establish an energy storage procurement target to be achieved by each load-serving entity. In October 2013, the CPUC adopted a target of 1,325 MW for PG&amp;E, SCE and SDG&amp;E by 2020, with installations required by the end of 2024. Energy storage is to contribute to grid optimization including peak reduction, reliability, renewables integration, and GHG reductions.</td>
</tr>
</tbody>
</table>

Needs Going Forward
- Support retrocommissioning projects to reduce peak demand
- Utilize green business networks to advance demand response and reduce GHG emissions
- Utilize smart communication technology to advance demand response programs and reduce peak demand
- Increase deployment of energy storage, distributed generation, and plug-in electric vehicles to address peak demand
Monitoring

- Annual changes to peak demand, average demand, and load factor
- Changes to peak demand due to the onset of renewable resources
- Peak demand energy used and supplied by plug-in electric vehicle charging
- Demand reduction programs that save energy and reduce consumer costs

Resources

- SDG&E Demand Response Programs
- SDG&E Electric Vehicle Time-of-Use Rates
- CPUC Demand Response and Smart Technologies
- CPUC Electric Energy Storage Programs and Proceedings

Recommendations

- Identify and explore investments that help address the variability of generation resources and other changes to peak demand.
- Expand the deployment of energy storage and distributed generation to reduce peak demand.
- Support siting of distributed generation with plug-in electric vehicle chargers to avoid negative peak demand impacts.
Overview
The smart grid enables two-way communication between an electricity user and the utility. Newer appliances and communication networks can give the consumer control over their appliances when away from home. Smart technologies and utility programs can enable consumers to know their electricity costs based on the time of use, and utilities can electronically communicate with end users and/or their equipment to power them down when the grid is in high use. Smart communications can improve reliability and reduce outages, as well as enable electric vehicles, renewable energy, and distributed generation technologies to be effectively integrated into the electric grid. Collectively, these policies are referred to here as “smart energy.”

Progress since RES Adoption

<table>
<thead>
<tr>
<th>SDG&amp;E Smart Grid Deployment</th>
<th>SDG&amp;E completed region wide installation of smart meters for all electricity customers, along with education and outreach. Its Smart Grid Deployment Plan estimates smart grid deployment costs at $3.5 to $3.6 billion and total benefits, including societal and environmental benefits, at $3.8 to $7.1 billion for 2006-2020.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstration Projects</td>
<td>Projects to better understand smart energy applications with EV charging and solar PV are at the San Diego Zoo, UCSD, and transit facilities.</td>
</tr>
<tr>
<td>SDG&amp;E Local Area Networks</td>
<td>Local area networks (LANs) operate through devices available for residents and businesses to connect with smart meters to manage appliances and monitor energy use.</td>
</tr>
<tr>
<td>UC San Diego Microgrid</td>
<td>The microgrid at UCSD generates over 90 percent of the electricity used on campus annually in 450 buildings across 1,200 acres. Smart communication networks and devices efficiently operate the campus generators (solar, gas turbines, steam turbine and fuel cell power from methane) and the end use heating, cooling and electricity.</td>
</tr>
<tr>
<td>SANDAG Activities</td>
<td>During the rollout of smart meters in the County, SANDAG provided information to local governments and stakeholders through the Regional Energy Working Group and Energy Roadmap Program about smart energy.</td>
</tr>
</tbody>
</table>

Regional Needs
- Demonstration projects that integrate energy storage, distributed generation, electric vehicle charging and smart communications
Smart Energy

- Understanding of interactive communication technologies to best utilize smart grid capabilities
- Consumer outreach and education on making best use of smart meters and technologies

Source: SDG&E Presentation, Borrego Springs Microgrid Demonstration Project, 2012

**Monitoring**

- Investments in the region to modernize the electricity grid, undertake demonstration projects, and develop and deploy smart technologies
- State and local reports on smart energy impacts to grid reliability, integration of distributed generation and energy consumption

**Resources**

- [SDG&E Smart Grid Deployment Plan, 2011.](#)
- [Sustain UCSD](#)
- [Borrego Springs Microgrid factsheet](#)

**Recommendations**

- Utilize the smart grid and advanced technologies to better inform decision making at the utility level and consumer level.
- Consider broadening RES goal to include microgrids.
- Continue to explore opportunities for emerging technology demonstration projects.
Natural Gas Power Plants

Increase overall efficiency of electricity production and support replacement of inefficient power plants consistent with the state’s preferred loading order.

Overview
The RES goal for natural gas power plants is focused on using natural gas in electricity generation most efficiently. Natural gas power plants remain an important source of electricity generation for the San Diego region and continue to serve a role in the state’s loading order. Natural gas use can become more efficient through measures in energy efficiency, demand response, distributed generation, and renewable energy. Natural gas power supports grid reliability as intermittent renewable resources and energy storage are integrated into the grid.

Progress since RES Adoption

<table>
<thead>
<tr>
<th>Natural Gas Plants in the Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calpine’s Otay Mesa combined cycle natural gas plant (590 MW) became operational in 2009 as the RES was considered for adoption.</td>
</tr>
<tr>
<td>J-Power’s Orange Grove single cycle natural gas plant (96 MW) became operational in May 2010 as a peaker plant</td>
</tr>
<tr>
<td>NRG’s Carlsbad combined cycle gas plant (558 MW) was approved by California Energy Commission in 2012 to replace the less efficient Encina plant on the same site.</td>
</tr>
<tr>
<td>Chula Vista and the Port demolished the South Bay Power Plant in 2013.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Natural Gas Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressed natural gas (CNG) and liquefied natural gas (LNG) are used as transportation fuels primarily in buses, commercial vans, shuttles and trucks. The natural gas demand for transportation fuel has grown 146% in the San Diego region, from 785,256 therms in 2009 to 1,928,079 therms in 2012. Growth is expected to continue as more natural gas vehicles are used to meet state alternative fuel and climate change goals.</td>
</tr>
</tbody>
</table>

Regional Planning Needs

- Evaluate infrastructure needs for natural gas storage and distribution, including refueling stations and the existing pipeline system
- Assess natural gas supply and cost impacts from the shutdown of the San Onofre Nuclear Generating Station (SONGS)
- Explore need of natural gas peaker plants as more energy storage and renewable resources are integrated in the electric grid
- Identify natural gas issues with local impacts and policy measures for local governments to address them
Natural Gas Consumption by Sector (MM Therms)

- Other
- Agricultural
- Mining
- Manufacturing
- Commercial
- Residential

Source: California Energy Commission. California Energy Demand 2012-2022 Staff Final Forecast - Mid Demand Case, SDG&E Natural Gas Planning Area

**Monitoring**
- Annual cost, supply and demand changes to natural gas for electricity and transportation
- Pipeline and storage capacity for the region
- Energy efficiency and alternative fuel programs

**Resources**
- California Energy Commission Natural Gas Resources
- California Public Utilities Commission Natural Gas Resources
- San Diego Regional Clean Cities Program

**Recommendations**
- Broaden RES goal to address end-user energy efficiency, regional access to supplies, transportation and/or other pertinent issues.
- Assess cost, supply, demand and GHG changes to natural gas from electricity and transportation uses.
Overview
Fuel conservation, efficiency, and increases in clean alternative fuels have the largest impact on greenhouse gas (GHG) emissions. Support of alternative fuel vehicles (AFVs), stations and supplies help meet climate change goals and expand choices for drivers. Alternatives fuels include biofuels, electricity, hydrogen, natural gas, and propane.

Progress since RES Adoption

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecotality and U.S. Department of Energy’s The EV Project</td>
<td>In Winter 2010, the all-electric Nissan Leaf car was released in San Diego and deployment of plug-in electric vehicle (PEV) chargers through the EV Project began. As of March 2013, PEV chargers from the EV Project totaled 731 residential Level 2 (L2) chargers, 64 nonresidential L2, 302 publicly available L2, and 3 DC Fast chargers in the region. The EV Project will collect data on charging behavior into 2014. SANDAG and many local stakeholders participated in EV Project planning.</td>
</tr>
<tr>
<td>San Diego Airport Clean Vehicle Conversion Program</td>
<td>The Airport adopted a policy to convert all ground transportation to AFVs by 2017. The California Center for Sustainable Energy (CCSE) developed the Airport Clean Vehicle Rebate Program (AVRP) to provide incentives to assist ground transportation providers in switching to AFVs. AVRP helped fund 181 vehicles conversions totaling 12% of the ground fleet. The Airport, Miramar College and SANDAG were project partners.</td>
</tr>
<tr>
<td>San Diego Regional Electric Vehicle Infrastructure Working Group (REVI)</td>
<td>The California Energy Commission awarded grants to MPOs to create working groups to address barriers to PEV deployment. SANDAG and CCSE formed the REVI that developed best practices and a Regional Readiness Plan for use by public agencies and regional stakeholders.</td>
</tr>
<tr>
<td>State AB118 Program and Grants</td>
<td>The Air Resources Board and Energy Commission offer over $100 million in alternative transportation grants and rebates annually through 2015 via the AB118 Program. The Clean Vehicle Rebate Program, Hybrid Truck and Bus Voucher Incentive Project, and planning through groups like REVI are part of AB118 funding.</td>
</tr>
<tr>
<td>Energy Roadmap Program’s Green Fleets for Local Governments</td>
<td>Basic fleet assessments that considered high efficiency and alternative fuel options were provided to 12 local governments via the Energy Roadmap program. SANDAG partnered with CCSE and San Diego Regional Clean Cities Coalition to provide economic and petroleum reduction assessments based on a jurisdiction’s vehicle replacement and procurement protocols.</td>
</tr>
</tbody>
</table>
Transportation Fuels

Planning Needs Going Forward

- Facilitate public-private partnerships to plan and deploy alternative fuel stations
- Evaluate clean fuel opportunities for goods movement projects
- Support the continuation of AB118 incentives for local alternative fuel stations, vehicles and production
- Support education and outreach on the economic and environmental benefits of alternative fuels
- Assess barriers to the installation, operation and maintenance of PEV chargers and alternative fuel infrastructure for public agencies

San Diego Region’s Electric Vehicle Landscape

<table>
<thead>
<tr>
<th>Plug-In Electric Vehicles (PEV)</th>
<th>Rebates Issued</th>
<th>Rebate Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero Emission Vehicles (battery electric)</td>
<td>2,748</td>
<td>$7,673,133</td>
</tr>
<tr>
<td>Plug-in Hybrid Electric Vehicles</td>
<td>1,331</td>
<td>$1,994,317</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>4,079</strong></td>
<td><strong>$9,667,450</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PEV Chargers</th>
<th>Home/Fleet</th>
<th>Public Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2 Chargers</td>
<td>975</td>
<td>488</td>
</tr>
<tr>
<td>DC Fast Chargers</td>
<td>1</td>
<td>8</td>
</tr>
</tbody>
</table>

San Diego Region’s Electric Vehicle Landscape

<table>
<thead>
<tr>
<th>Alternative Fuelling Stations in San Diego Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
</tr>
<tr>
<td>Biodiesel</td>
</tr>
<tr>
<td>E85</td>
</tr>
<tr>
<td>Natural Gas</td>
</tr>
<tr>
<td>Hydrogen</td>
</tr>
<tr>
<td>Propane</td>
</tr>
</tbody>
</table>

Sources: California Clean Vehicle Rebate Project by CCSE; SDG&E Clean Transportation

Monitoring

- Annual gasoline, diesel and alternative fuel use and/or sale in region
- CARB Low Carbon Fuel Standard and state petroleum reduction goals
- CEC Transportation Energy Forecasts for Integrated Energy Policy Reports
- California Energy Almanac

Resources

- Alternative Fuels Data Center Station Locator
- San Diego Regional Clean Cities Coalition
- California Energy Commission Transportation Division
- The EV Project documents
- San Diego Regional PEV Readiness Plan

Recommendations

- Support local government measures to transition municipal and contracted fleets to AFVs.
- Continue to support public-private partnerships to fund and deploy regional alternative fuel vehicles and infrastructure.
- Support measures that enable public agencies to install, operate and maintain alternative fuel infrastructure at public sites.
Overview
Land Use and Transportation Planning (LUTP) was a new goal in the 2030 Regional Energy Strategy (2009). SANDAG’s Sustainable Communities Strategy (SCS) is the primary planning mechanism to reduce the region’s LUTP related energy and fuel consumption. SCS strategies include smart growth, walking, biking, public transit, carpooling, telecommuting, and congestion pricing. The primary local government mechanisms are Climate Action Plans (CAPs) and General Plan Updates (GPUs).

Progress since RES Adoption

<table>
<thead>
<tr>
<th>Regional Lead</th>
<th>SANDAG SCS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Describes how to meet greenhouse gas reduction targets for 2020 and 2035 set by the California Air Resources Board (CARB). Places priority on mixed uses, smart growth and mobility.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Energy Roadmaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>As of October 2013, SANDAG has completed 13 Roadmaps with local governments and 5 are underway. LUTP is a primary piece of each and can be used in General Plan updates and CAPs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Local Lead</th>
<th>General Plan Updates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>As local jurisdictions update their General Plans, energy demand reduction in land use and transportation planning has become a component.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Climate Action Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 local governments completed GHG inventories, 7 adopted CAPs, and 5 are under development.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Collaboration and Outreach</th>
</tr>
</thead>
<tbody>
<tr>
<td>The San Diego Foundation’s Climate Network provided peer to peer forums, and now operates as the San Diego Regional Climate Collaborative.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regional and Local Active Transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SANDAG created the Bike EAP to implement high-priority projects from the Regional Bike Plan within 10 years. Local governments are also hiring active transportation staff and developing local bike plans.</td>
</tr>
</tbody>
</table>

Planning Needs Going Forward
- Local climate planning assistance
  - Climate Action Plans, CAP Implementation Plans, and Projects
  - Accessible energy and emissions data for GHG inventories
  - Climate considerations for local Housing Elements
  - Funding opportunities to support climate action planning
- Regional climate planning
  - Develop or make available guidance materials for above needs
  - Prepare or share CEQA thresholds guidance for development projects
Per Capita GHG Reductions from 2050 Regional Transportation Plan and Sustainable Communities Strategy (RTP/SCS)

*BAU (Business as Usual) = CO₂ emissions under status quo scenario, without implementation of 2050 RTP/SCS

Monitoring
- GHG reductions from local CAPs and GPUs, and from regional LUTP in the SCS
- State measures and targets for GHG reductions from LUTP

Resources
- Adopted SANDAG Sustainable Communities Strategy
- Riding to 2050: the San Diego Regional Bike Plan
- Local Climate Action Plans
- Energy Roadmap Planning Chapter and Appendices
- San Diego Regional Climate Collaborative
- The Governor’s Office of Planning and Research (OPR)

Recommendations
- Expand SANDAG data warehouse to include jurisdictional data to support climate action planning.
- Provide forum to address consistency on CEQA thresholds for GHG emissions in the region.
- Support mobility options to reduce GHG emissions.
- Identify and secure long term funding sources for land use and transportation planning to reduce energy use.
Overview

Energy supply, usage and conservation in the San Diego region are impacted by actions of its neighbors and vice versa. San Diego County borders include Orange, Riverside and Imperial Counties, Mexico, 17 tribal governments and the military. Collaborative projects on congestion management, goods movement and Ports of Entry (POEs) are ongoing. Energy, transportation fuels, and climate change are growing areas of mutual interest for SANDAG’s Borders Committee and Military Working Group.

Progress since RES Adoption

| Tribal Policy Summit and Workshop | In April 2010 a Tribal Summit was convened by SANDAG, Southern California Tribal Chairmen’s Association (SCTCA), Reservation Transportation Authority (RTA), Caltrans, County of San Diego, and the 17 federally recognized tribal governments in the San Diego region to identify policy issues and priorities that could be jointly addressed. Energy was identified as a priority. In November 2013, SANDAG and SCTCA held a Tribal Policy Workshop at the Sycuan Reservation to address energy and other policies. |
| 2010 Binational Event: Crossborder Climate Change Strategies | In June 2010, SANDAG, Caltrans, Metropolitan Planning Institute of Tijuana (IMPLAN), USD’s EPIC and other experts discussed climate change and adaptation strategies being considered in the San Diego region and Baja California, Mexico. Subsequent crossborder meetings and events have occurred to share experiences and promote climate collaboration. |
| CARB New Truck Regulations | SANDAG collaborated with California Air Resources Board (CARB) to conduct information sessions on new clean truck regulations impacting border truckers. |
| Intelligent Transportations System Pre-Deployment Strategy | SANDAG is conducting an Intelligent Transportations System Pre-Deployment Strategy to enhance the efficiency of truck flows across the border and reduce GHG emissions. The strategy investigates a congestion pricing system for the proposed Otay Mesa East POE and accompanying State Route 11, and a wait time detection system for all three ground POEs. |
| SCTCA Energy Cooperative | The Southern California Tribal Chairmen’s Association is creating an energy cooperative for tribes located in the San Diego region. |
Planning Needs Going Forward

- Continued communication among border communities and military on energy, fuel and climate change
- Collaboration as possible on energy, alternative fuels and climate adaptation
- Integrated planning for electric and alternative fuel vehicles along transportation corridors like the I-5 and I-15
- Public and private partnership on energy and climate change planning efforts

Military and City of San Diego Collaborative Clean Energy Project

- Miramar Energy Project
- Operational June 2012
- Converts methane gas from landfill waste into renewable energy
- Reduced MCAS’s energy pull from the San Diego grid by 45%

Monitoring

- Fuel and energy use from goods movement at Ports of Entry and inter-county
- Climate adaptation studies that cross regional borders
- Tribal energy planning and initiatives
- Local military net zero energy policies and practices
- Renewable energy projects in Mexico and tribal lands

Resources

- SANDAG Borders Committee
- SANDAG Regional Military Working Group
- SANDAG Projects with Neighboring Jurisdictions

Recommendations

- Expand the RES Goal to include actions that support coordination with border military sites and tribal nations.
- Support stakeholder coordination on opportunities to integrate plug-in electric vehicle charging and other alternative fuel infrastructure.
- Explore public-private and joint border agency partnerships for energy and climate change planning efforts.
Overview
The Clean Energy Economy goal has focused on training and development for the local workforce to perform sought after green services for local homes, businesses, and the public sector. In 2009, the clean energy programs received an injection of investment dollars from the American Recovery and Reinvestment Act (ARRA) to support workforce training on the installation, operation and maintenance of green buildings, distributed generation, and clean fuel vehicles and infrastructure. The California Center for Sustainable Energy (CCSE) implemented training programs related to green building for several public entities.

Progress since RES Adoption
From 2009-2012, ARRA funded several state and local workforce training programs including Energy Upgrade California (EUC) and Alternative and Renewable Fuel and Vehicle Technology Program:
- EUC - County of San Diego GETUP Program
- EUC - Regional contractor trainings by CCSE and SDG&E
- EUC - Home Energy Rater and building performance trainings
- CEC - Allocated $16 million to train workers for long-term employment in the alternative fuel and vehicle market.

CleanTECH San Diego Cluster Database
CleanTECH San Diego focuses on stimulating innovation and advancing the adoption of clean technologies and sustainable industry practices. It maintains a Cluster Database that catalogs over 800 clean tech companies in the San Diego region. Having this database for the region helped to establish the clean tech sector as an industry cluster for regional economic analyses.

CleanTECH-SANDAG Economic Studies
In 2011, CleanTECH San Diego commissioned SANDAG to prepare economic impact reports for six key clean tech sectors: Biofuels, Clean Transportation, Clean Energy Storage, Energy Efficiency, Smart Grid and Solar Energy Generation.

Planning Needs Going Forward
- Consider impacts of the clean energy sector on the regional economy
- Support job placement and training programs for clean energy sector
- Identify economic costs and benefits of energy-related climate change mitigation and adaptation measures
San Diego Regional Economic Impact Studies

<table>
<thead>
<tr>
<th>Clean Tech Sector</th>
<th>Direct Jobs</th>
<th>Direct Wages</th>
<th>Direct and Indirect Economic Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algal Biofuels</td>
<td>466</td>
<td>$41.1 million</td>
<td>$80.9 million</td>
</tr>
<tr>
<td>Clean Transportation</td>
<td>1,050</td>
<td>$92.6 million</td>
<td>$311.3 million</td>
</tr>
<tr>
<td>Clean Energy Storage</td>
<td>561</td>
<td>$56.3 million</td>
<td>$133.9 million</td>
</tr>
<tr>
<td>Energy Efficiency</td>
<td>1,013</td>
<td>$89.6 million</td>
<td>$299.8 million</td>
</tr>
<tr>
<td>Smart Grid</td>
<td>460</td>
<td>$37.2 million</td>
<td>$91.5 million</td>
</tr>
<tr>
<td>Solar Energy Generation</td>
<td>1,133</td>
<td>$143.2 million</td>
<td>$517.6 million</td>
</tr>
</tbody>
</table>

Source: CleanTECH San Diego and SANDAG Service Bureau

Monitoring

- Job creation and placement by energy sector, California Community Colleges Economic and Workforce Development
- Economic impact of clean tech industry
- Reports to the Joint Legislative Budget Committee on AB 32

Resources

- CleanTECH-SANDAG San Diego Economic Development Studies
- SANDAG Traded Industry Clusters in the San Diego Region Report
- California Workforce Education & Training Needs Assessment for Energy Efficiency, Distributed Generation and Demand Response, UC Berkeley
- Workforce Needs for Green Industries, California Community Colleges

Recommendations

- Broaden RES Goal to include economic impacts of the clean energy sector.
- Support green job training and placement mechanisms in absence of ARRA funded programs.
- Explore and promote collaborative economic development activities to attract clean technology industries to the region.
Regional Energy Working Group (EWG) has been discussing energy efficiency programs and opportunities available through the California Public Utilities Commission (CPUC), including Local Government Partnerships (LGPs) and Regional Energy Networks (RENS). EWG Chair Carrie Downey and staff will present an overview of LGPs and REINS to the Regional Planning Committee in March. Possible next steps to pursue this opportunity will be discussed.

Discussion

Last month, the public agencies that have LGPs (SANDAG, the City and County of San Diego, the City of Chula Vista, and the Port of San Diego) with San Diego Gas & Electric presented on their energy efficiency programs and projects. The LGPs then discussed the collaborative projects they jointly fund for the San Diego region such as the San Diego Regional Climate Collaborative and Regional Energy Mapping Project.

Staff also presented information on the two CPUC-approved REINS: BayREN and SoCalREN. REINS are comprised of multiple governments and public agencies within a geographic area and complement LGP programs. They offer another means for the region to receive energy efficiency funding. Budgets for 2013-2014 LGPs and REINS are described in the table below.

<table>
<thead>
<tr>
<th>SDG&amp;E Budget (LGP only)</th>
<th>REN Region Budgets (LGP and REN)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SDG&amp;E LGP</strong></td>
<td><strong>Bay Area</strong></td>
</tr>
<tr>
<td>$13,022,575</td>
<td>LGP (PG&amp;E) $139,500,000**</td>
</tr>
<tr>
<td>SANDAG</td>
<td>BayREN $26,567,750</td>
</tr>
<tr>
<td>$1,262,660</td>
<td>TOTAL $166,067,750</td>
</tr>
<tr>
<td>Regional collective</td>
<td><strong>Includes non-REN public agencies</strong></td>
</tr>
<tr>
<td>programs:</td>
<td><strong>Contributions from each SDG&amp;E LGP</strong></td>
</tr>
<tr>
<td>$710,500*</td>
<td><strong>Includes non-REN public agencies</strong></td>
</tr>
</tbody>
</table>

The EWG has expressed interest in the program and funding possibilities of a REN. LGP program administrators have begun exploring how a local REN would enhance existing energy efficiency programs in the San Diego region.
Next Steps

Staff will provide updates and seek input from the EWG as more is learned from the CPUC and through communication with existing REN administrators. As the San Diego region’s LGPs continue to meet about regional energy programs, REN opportunities will be considered alongside other local government energy efficiency programs. Possible future actions and timeline for a REN application include:

### Possible Timeline

<table>
<thead>
<tr>
<th>Near-term</th>
<th>Communicate with existing RENs.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Learn more about each structure, administration, and staff needs.</td>
</tr>
<tr>
<td></td>
<td>• Resource and non-resource programs, planning, and issues.</td>
</tr>
<tr>
<td>Mid 2014</td>
<td>Determine probable REN organizational structure.</td>
</tr>
<tr>
<td></td>
<td>• Explore methods to enable multiple governments to jointly pursue a REN.</td>
</tr>
<tr>
<td></td>
<td>• Method could be Resolutions, Memorandums of Understanding, or other.</td>
</tr>
<tr>
<td>Mid-late 2014</td>
<td>REN application development (with consultant).</td>
</tr>
<tr>
<td></td>
<td>• Identify regional energy and water efficiency programs.</td>
</tr>
<tr>
<td></td>
<td>• Prepare implementation plan to launch REN.</td>
</tr>
<tr>
<td>2014 or 2015</td>
<td>Submittal to CPUC.</td>
</tr>
<tr>
<td>2015</td>
<td>CPUC decision on REN application.</td>
</tr>
<tr>
<td>2016</td>
<td>REN energy and water efficiency programs available.</td>
</tr>
</tbody>
</table>

Key Staff Contact: Anna Lowe, (619) 595-5603, anna.lowe@sandag.org
### 2014 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 including appropriate funding levels, goods movement and border programs, transit investment and reforms, process improvements (including streamlined environmental processes), active 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, smart growth, and higher pass-through maintenance/preservation funding. (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>5A</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>
</tr>
<tr>
<td>6A</td>
<td>Pursue policy and/or legislative changes to streamline or reform the California Environmental Quality Act (CEQA) for public transit improvements, active transportation projects, and other transportation projects located within existing rights-of-way. (2013)</td>
<td>High</td>
<td>Sponsor</td>
<td>●</td>
<td></td>
<td></td>
<td></td>
<td>State</td>
</tr>
<tr>
<td>7A</td>
<td>Pursue policy and/or legislative changes to improve the planning and implementation of the RTP/SCS, including modifying the required planning cycle for major updates of the RTP/SCS and clarifying the level of CEQA analysis required for the associated program environmental document. (2013)</td>
<td>High</td>
<td>Sponsor</td>
<td>●</td>
<td></td>
<td></td>
<td></td>
<td>Federal/State</td>
</tr>
</tbody>
</table>

**Legend** - T: Transportation; R: Regional Planning; P: Public Safety; B: Borders
<table>
<thead>
<tr>
<th>NO.</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 a Full Funding Grant Agreement for the Mid-Coast Corridor Transit Project and continued support for intercity rail. (2008, 2013)</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 simple majority vote. (2002)</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>
</tbody>
</table>
### (B) SUPPORT/OPPOSE (continued)

<table>
<thead>
<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>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>
<td></td>
<td></td>
<td></td>
<td>State</td>
</tr>
<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>14B</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</td>
</tr>
<tr>
<td>15B</td>
<td>Transit boards’ legislative programs where consistent with SANDAG Policy. (2002)</td>
<td>Lower</td>
<td>Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State</td>
</tr>
</tbody>
</table>

### (C) MONITOR

<table>
<thead>
<tr>
<th>NO.</th>
<th>GENERAL DESCRIPTION OF GOAL</th>
<th>PRIORITY</th>
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<th>T</th>
<th>R</th>
<th>P</th>
<th>B</th>
<th>JURISDICTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1C</td>
<td>Proposals that limit the use of eminent domain for public infrastructure projects. (2005)</td>
<td>Lower</td>
<td>Monitor/Respond</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State</td>
</tr>
<tr>
<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>
<td></td>
<td></td>
<td></td>
<td></td>
<td>State/Local</td>
</tr>
<tr>
<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>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State/Local</td>
</tr>
<tr>
<td>4C</td>
<td>Legislation requiring local agencies to implement new administrative compliance measures. (2005)</td>
<td>Lower</td>
<td>Monitor/Respond</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Federal/State</td>
</tr>
</tbody>
</table>

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