MEETING NOTICE AND AGENDA

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

Thursday, September 25, 2008
11:30 a.m. to 1:00 p.m.
SANDAG, 7th Floor Conference Room
401 B Street, Suite 800
San Diego, CA 92101-4231

Staff Contact: Susan Freedman
(619) 699-7387
sfr@sandag.org

AGENDA HIGHLIGHTS

• NEW USD-EPIC REPORT: SAN DIEGO GREENHOUSE GAS INVENTORY
• SUSTAINABLE REGION PROGRAM FOR LOCAL GOVERNMENTS
• CASE STUDIES OF LEED-CERTIFIED BUILDINGS

SANDAG offices are accessible by public transit.
Phone 1-800-COMMUTE or see www.sdcommute.com for route information.

In compliance with the Americans with Disabilities Act (ADA), SANDAG will accommodate persons who require assistance in order to participate in SANDAG meetings. If such assistance is required, please contact SANDAG at (619) 699-1900 at least 72 hours in advance of the meeting.

To request this document or related reports in an alternative format, please call (619) 699-1900, (619) 699-1904 (TTY), or fax (619) 699-1905.
<table>
<thead>
<tr>
<th>ITEM #</th>
<th>RECOMMENDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>WELCOME AND INTRODUCTIONS</td>
</tr>
<tr>
<td>2.</td>
<td>APPROVE</td>
</tr>
<tr>
<td>3.</td>
<td>COMMENT</td>
</tr>
<tr>
<td>4.</td>
<td>INFORMATION</td>
</tr>
<tr>
<td>5.</td>
<td>DISCUSSION</td>
</tr>
<tr>
<td>6.</td>
<td>DISCUSSION</td>
</tr>
<tr>
<td>7.</td>
<td>DISCUSSION</td>
</tr>
</tbody>
</table>

1. **WELCOME AND INTRODUCTIONS**

2. **SUMMARY OF JULY 24, 2008, ENERGY WORKING GROUP MEETING**

   The July 24, 2008, meeting summary is attached for the Energy Working Group (EWG) review and approval.

3. **PUBLIC COMMENT**

   Members of the public who would like to address the EWG on a topic not on the agenda should do so at this time. Speakers are limited to three minutes each.

4. **NEW UNIVERSITY OF SAN DIEGO – ENERGY POLICY INITIATIVES CENTER REPORT: SAN DIEGO GREENHOUSE GAS INVENTORY**

   The Energy Policy Initiatives Center (EPIC) completed the first regional Greenhouse Gas (GHG) Emissions Inventory for the San Diego Region. Scott Anders, EPIC, will present key findings and answer questions. The inventory will be used in the SANDAG Regional Energy Strategy Update and Regional Climate Action Plan.

5. **SUSTAINABLE REGION PROGRAM FOR LOCAL GOVERNMENTS**

   A. SANDAG, the California Center for Sustainable Energy (CCSE), and SDG&E will jointly present energy saving activities undertaken with the Cities of Solana Beach, Poway, and Imperial Beach under the Sustainable Region Program (SRP), and program and discuss next steps for 2009-2011.

   B. CCSE will present and solicit feedback on a draft report on financing municipal energy-saving initiatives in California.

6. **OUTLINE FOR 2009 REGIONAL ENERGY STRATEGY UPDATE**

   The EWG is asked to provide comment on a revised outline for the Regional Energy Strategy (RES) Update. Please provide input during the meeting or written comment by October 9, 2008.

7. **CASE STUDIES OF LEED-CERTIFIED BUILDINGS**

   Jennifer Green, CCSE, will present three Draft case studies of municipal buildings in the San Diego region built to LEED standards and above 2005 Title 24 California Building codes. The EWG is asked to provide comments on the drafts during the meeting or in writing by October 7, 2008. A final draft will be presented to the EWG at its October 23, 2008, meeting.
+8. EWG ADMINISTRATIVE ITEMS

Carrie Downey, EWG Chair, will discuss several housekeeping items:
A. Agendized Meeting Calendar for remainder of 2008
B. Timeline and Task Numbers for SANDAG-California Energy Commission (CEC) contract deliverables
C. EWG Member List
D. EWG Charter

9. SCHEDULING AGENDA ITEMS FOR FUTURE MEETINGS

EWG members are invited to suggest topics for the upcoming October 23, 2008, meeting.

10. ADJOURN

+ next to an item indicates an attachment
SUMMARY OF JULY 24, 2008, EWG MEETING

AGENDA ITEM #1: WELCOME AND INTRODUCTIONS

Energy Working Group (EWG) Chair Carrie Downey, City of Coronado, called the meeting to order at 11:32 a.m. and welcomed the group, noting the number of new faces in attendance. Members made self introductions.

AGENDA ITEM #2: SUMMARY OF JUNE 26, 2008, MEETING

Ms. Downey asked working group members to look over the meeting summary and to approve it if there were no changes.

Paul O’Neal, North County Economic Development Council, motioned to approve the minutes. Rebecca Jones, City of San Marcos, seconded the motion, which passed without opposition.

AGENDA ITEM #3: PUBLIC COMMENT AND COMMUNICATIONS

Members of the public were given the opportunity to address the EWG on a topic not on the agenda. No public comments were made.

Ms. Downey announced that Brian Holland, SANDAG, will be leaving his energy planning position to pursue opportunities on the east coast. Mr. Holland said had enjoyed working with EWG and thanked members for their support of regional energy planning.

AGENDA ITEM #4: RESTRUCTURING THE SANDAG ENERGY WORKING GROUP

Ms. Downey stated that the Board of Directors has been trying to make all of the agency’s working groups more effective and meet the needs of the region. All working groups undergo an annual review and this year some working groups were disbanded, others merged together, and others were restructured. The Board decided to reduce the size of the group from 25 to a maximum of 20, but still leave room for effective discourse so that all issues are fleshed out before they move from the EWG to the Regional Planning Committee (RPC) and Board. The organizations and their representatives that are no longer voting members have been invited to continue attending meetings and offering their expertise to the group. The EWG always has solicited and considered both member input and that of the other meeting attendees and the EWG will continue to act in this manner.

Ms. Downey also stated that some current and past members may have held misconceptions about the authority of the EWG. All working groups including the EWG serve at the pleasure of SANDAG. Regarding subgroups of the EWG, Ms. Downey stated that she’d like critical discussions to involve as
many members (volunteers) as possible, which would be during the regularly scheduled monthly working group meetings. She elaborated that there was nothing in the new guidelines that precluded continued use of a subcommittee, either standing or ad-hoc, and that a subcommittee can be useful to iron out details that guide EWG recommendations. She continued that all decisions should be made at the full working group level.

Councilmember Donna Frye, City of San Diego, said that the working group held discussions on its bylaws and membership in the past, and she was concerned that the Executive Committee made changes in these areas without consulting EWG members. Ms. Frye believed that reducing the membership resulted in removing members who made great contributions to the group.

Ms. Downey agreed that many people past and present have contributed greatly to the energy working group, but that it is hard to allocate spots to everyone who could contribute while keeping the group a manageable size.

Laura Hunter, Environmental Health Coalition, stated that the decision to reduce membership size felt like “no-good politics.” The group did not betray the mission of advising the Board on the implementation of the RES, but she feels like the group is being punished for making a recommendation against the desires of the Executive Committee.

Ms. Downey apologized for the timing and process by which changes were made which might seem distasteful to some members. The changes, including a newly appointed EWG Chair, were planned well in advance of the recent Sunrise Powerlink recommendation to the RPC. However, since Ms. Downey’s private practice is involved in the Sunrise regulatory proceeding, she did not wish to take over as chair until the EWG completed its assessment and made its recommendation for the RPC.

Alex Hart, International Brotherhood of Electrical Workers Local 569, stated that labor should remain a member of the EWG.

Jim Cron, Public, said that although he is not a member, he has been attending meetings for more than a year and that renewable energy interests should be members.

JC Thomas, SDG&E, said that this group has been valuable for the utility. Although the group does not have direct authority, its discussions and recommendations do influence what happens with the company. It also is a great sounding board for cities, business, environmental, and other groups to get together and hammer out ideas.

Dr. Heather Honea, San Diego State University (SDSU), suggested that the EWG figure out what other organizations or policy institutes it could make recommendations to.

Ms. Downey clarified that [SANDAG] working groups do not have the authority to make recommendations to entities outside of SANDAG. That said, if members and attendees had strong interest in collectively addressing energy issues outside of this scope, a consideration of the usefulness of another forum at another venue outside of SANDAG could be undertaken.

Cecilia Aguillon, Kyocera Solar, said that she had been active with the CPUC and the legislature for a number of years, and the CPUC loves to hear from the community. It would be great if the group had the authority to communicate directly with the CPUC.
Andrew McAllister, CCSE, said that the group was a valuable forum for exchanging ideas even when nothing concrete came of the discussions. Although individual members are free to communicate with the CPUC or legislature on their own, any recommendations coming out of such a broad based group would have a very special quality.

Ms. Frye said she was concerned that a working group recommendation could be superseded by a [SANDAG] staff recommendation and asked for more information on that process. Ms. Downey said one of her goals would be for the group to discuss all items before they became action items so that any staff analysis could be brought to the group. Staff is required to provide an independent recommendation from working group recommendations for all items that escalate to the RPC and Board. Generally, staff and the EWG recommendations have been similar, but not always.

**AGENDA ITEM #5: SDG&E SOLAR PHOTOVOLTAIC INTITIVE**

JC Thomas, SDG&E, presented information on SDG&E'S solar initiative and covered SDG&E's other work on energy efficiency and renewables. The California Solar Initiative (CSI) has completed 3.2 MW in 453 photovoltaic (PV) systems. Overall there is a total of 34 MW of grid-connected solar in the region. If the CSI meets its goals, there could be 200 MW of solar in the next decade.

Through the sustainable cities program, SDG&E has placed 6 MW of rooftop PV around the region. Customers do not get the electricity or of Renewable Energy Credit (REC) for these systems, but customers like the Ruben H. Fleet Science Center get the public relations and educational benefits. SDG&E gets the Renewable Portfolio Standard Credit for the systems.

Mr. Thomas briefly reviewed other renewables under contract to SDG&E. SDG&E is pursuing a number of other opportunities including wind, geothermal and large scale solar. He showed supply forecasts for 2015.

Ms. Hunter asked why distributed generation (DG) was such a small part of the 2015 supply plan. Mr. Thomas said it required customer investment in DG systems, that many large customers already have cogeneration facilities, and that there are a limited number of large industrial customers. Mr. Evans said that there was an existing district chiller plant downtown as well as a newer cogeneration facility which supplies Petco Park and adjacent hotels and business. This sort of arrangement can be a huge positive if the rate structure exists to support it. Mr. Evans stated that the barrier to more DG was in part due to the SDG&E rate structure.

Mr. Thomas said that when Southern California Edison (SCE) announced their large scale solar PV program, SDG&E was already talking to cities about sites for a similar program. However there are many differences between SCE's and SDG&E's programs. SDG&E is looking at sites between 10 acre parking lots and 100 acre landfills and not rooftop systems. Parking lots would have fixed shade structures while the large scale ones would have single axis tracking. The total proposed project would be 52mw and $250 million dollars, which would be a $0.12-0.26 monthly rate impact to customers. The CPUC still needs to approve the project before it can proceed.

Mr. Evans said that an incentive based program might encourage better performance monitored installations from third parties. There may be certain incentives available to third parties that are unavailable to the utility. There may be more effective things like centralized solar that could be of lower cost to customers.
AGENDA ITEM #6: REPORT OF SUNSTAINABLE REGION PROGRAM

Due to the shortage of time, this item was tabled until the next meeting (September 25, 2008). Ms. Downey encouraged members to read the report on the program included in the agenda and to send comments to Susan Freedman, SANDAG.

AGENDA ITEM #7: CALIFORNIA CITY-COUNTY STREET LIGHT ASSOCIATION PRESENTATION

Dave Byers, California City-County Street Light Association (CAL-SLA) Presentation said his organization represents jurisdictions in street light and traffic signal rate cases before the California Public Utilities Commission (CPUC). California City-County Street Light Association (CAL-SLA) was formed in the early 1980’s in response to the continued raising of rates. CAL-SLA has saved its members millions of dollars through these cases. It responds to advice letters and other rate changes outside the general rate cases. Mr. Byers said that CAL-SLA represents all cities, but its membership mostly is centered in Northern California. More involvement from members in the SDG&E territory could lead to better outcomes for ratepayers.

Reed Schmidt, CAL-SLA, said that his organization intervened in rate cases, but also works on other subjects, such as new technology and energy efficiency. The current rates are based on a model developed jointly by CAL-SLA and SDG&E. CAL-SLA has saved cities over $2.3 million dollars in SDG&E territory while making sure that tariffs accurately reflect the costs of service. Street lighting is off-peak and predictable, so its costs to utilities if lower than other rate classes.

Risa Barron said that SDG&E was supporting a demonstration program looking at induction street lamps in three cities, including an installation around San Diego City hall. Energy usage from these lamps will be compared to other lamps.

AGENDA ITEM #8: SCHEDULING AGENDA ITEMS. FOR FUTURE MEETINGS

Ms. Downey suggested that the EWG look into the Assembly Bill 32 (AB 32) Scoping plan and if see if the goals laid out for the cities are reasonable and feasible. Mr. Holland stated that the Executive Committee would be discussing a letter to the CARB at their next meeting involving most of the jurisdictions.

AGENDA ITEM #9: ADJORN

The meeting was adjourned at 1:48 p.m. The next meeting will be September 24, 2008.
# SANDAG ENERGY WORKING GROUP
## MEETING ATTENDANCE JULY 24, 2008

<table>
<thead>
<tr>
<th>GEOGRAPHICAL AREA/ORGANIZATION</th>
<th>JURISDICTION</th>
<th>NAME</th>
<th>MEMBER/ALTERNATE</th>
<th>PRESENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SANDAG Subregional Representation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>South County</td>
<td>City of Coronado</td>
<td>Carrie Downey, Chair</td>
<td>EWG Chair</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Steve Castaneda</td>
<td>Alternate</td>
</tr>
<tr>
<td></td>
<td>North County Coastal</td>
<td>City of Del Mar</td>
<td>Henry Abarbanel</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vacant</td>
<td>Alternate</td>
</tr>
<tr>
<td></td>
<td>North County Inland</td>
<td>City of San Marcos</td>
<td>Rebecca Jones</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vacant</td>
<td>Alternate</td>
</tr>
<tr>
<td></td>
<td>East County</td>
<td></td>
<td>Vacant</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vacant</td>
<td>Alternate</td>
</tr>
<tr>
<td></td>
<td>City of San Diego</td>
<td></td>
<td>Donna Frye</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vacant</td>
<td>Alternate</td>
</tr>
<tr>
<td></td>
<td>County of San Diego</td>
<td></td>
<td>Peter Livingston (staff)</td>
<td>Alternate</td>
</tr>
<tr>
<td><strong>Regional Transit Agencies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regional Transit Authorities</td>
<td>Metropolitan Transit System (MTS)</td>
<td>Sharon Cooney</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td></td>
<td>North County Transit District (NCTD)</td>
<td>Vacant</td>
<td>Alternate</td>
</tr>
<tr>
<td><strong>Regional Investor Owned Utility (IOU)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>San Diego Gas &amp; Electric (SDG&amp;E)</td>
<td>David Geier</td>
<td>Member</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>JC Thomas</td>
<td>Alternate</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frank Urtasen</td>
<td>Alternate</td>
<td>N</td>
</tr>
<tr>
<td><strong>Regional Business Groups</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>San Diego Regional Chamber of Commerce</td>
<td>Shell Trading</td>
<td>Mike Evans</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Carmen Sandoval (staff)</td>
<td>Alternate</td>
</tr>
<tr>
<td></td>
<td>North County Economic Development Council</td>
<td>Paul L. O’Neal and Associates</td>
<td>Paul O’Neal</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Battle Strategies, LLC</td>
<td>Keith Battle</td>
<td>Alternate</td>
</tr>
<tr>
<td></td>
<td>South County Economic Development Council</td>
<td>Designed Internet</td>
<td>Dan Biggs</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Alternate</td>
</tr>
<tr>
<td><strong>Regional Energy Experts (Nonprofits)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>California Center for Sustainable Energy (formerly San Diego Regional Energy Office)</td>
<td>Andrew McAllister</td>
<td>Member</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Irene M. Stillings</td>
<td>Alternate</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Energy Policy Initiative Center (EPIC)</td>
<td>Scott Anders</td>
<td>Member</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Regional Public Agencies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Port of San Diego</td>
<td>Bill Hays</td>
<td>Member</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dave Carey</td>
<td>Alternate</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Michelle White</td>
<td>Alternate</td>
<td>Y</td>
</tr>
<tr>
<td>GEOGRAPHICAL AREA/ORGANIZATION</td>
<td>JURISDICTION</td>
<td>NAME</td>
<td>MEMBER/ALTERNATE</td>
<td>PRESENT</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>-----------------------</td>
<td>------------------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Regional Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>San Diego Universities</td>
<td>University of California San Diego (UCSD)</td>
<td>Dave Weil</td>
<td>Member</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>San Diego State University (SDSU)</td>
<td>Dr. Heather Honea</td>
<td>Alternate</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Regional Alternative Transportation Groups</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Clean Transportation Representative</td>
<td>San Diego Clean Cities Coalition</td>
<td>Greg Newhouse</td>
<td>Member</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>Regional Sustainability Partnership Clean Transportation Committee</td>
<td>Derek Turbide</td>
<td>Alternate</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Regional Environmental Groups</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sierra Club</td>
<td>Border Power Plants Working Group</td>
<td>Bill Powers</td>
<td>Member</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td>David Grubb</td>
<td>Alternate</td>
<td>Y</td>
</tr>
<tr>
<td>Environmental Health Coalition</td>
<td></td>
<td>Laura Hunter</td>
<td>Member</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Leo Miras</td>
<td>Alternate</td>
<td>Y</td>
</tr>
<tr>
<td><strong>OTHERS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cari Dale, City of Carlsbad</td>
<td></td>
<td>Reed Schmidt, Cal Sla</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mary Ann Kempczenski, Councilmember Frye's office</td>
<td></td>
<td>Jennifer Green, CCSE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tom Blair, City of San Diego</td>
<td></td>
<td>Sephra Ninow, CCSE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alexandra Hart, IBEW Local 569</td>
<td></td>
<td>Bob Resley, Resley Consulting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Julie Gelfat, IBEW Local 569</td>
<td></td>
<td>Noel Crisostomo, SDG&amp;E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linda Wagner, City of Chula Vista</td>
<td></td>
<td>Ruseell Laub, SDG&amp;E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micah Mitrosky, Sierra Club</td>
<td></td>
<td>Michelle Corti, SDG&amp;E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Al Hurt, SD Regional Sustainability Partnership</td>
<td></td>
<td>Julie Ricks, SDG&amp;E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elaine Rosenberger, SD Regional Sust. Partnership</td>
<td></td>
<td>Risa Baron, SDG&amp;E</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joe Bessler, Silverwood Energy</td>
<td></td>
<td>Gulsum Rustemoglu, Ecology &amp; Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bob Martin, San Diego City Schools</td>
<td></td>
<td>Rob Rundle, SANDAG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J. Naish, San Diego City Schools</td>
<td></td>
<td>Bob Lieter, SANDAG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cristina Frisby, CCSE</td>
<td></td>
<td>Susan Freedman, SANDAG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dave Byers, Cal-Sla</td>
<td></td>
<td>Brian Holland, SANDAG</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kevin Wood, SANDAG</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
NEW UNIVERSITY OF SAN DIEGO – ENERGY POLICY INITIATIVES CENTER REPORT: SAN DIEGO GREENHOUSE GAS INVENTORY

Introduction

On September 19, 2008, the Energy Policy Initiatives Center (EPIC), a research center at the University of San Diego (USD) School of Law, released a report (Attachment 1) that provides a detailed accounting of greenhouse gas emissions (GHG) for San Diego County. The report also identifies 21 strategies for the region to reduce its emissions to 1990 levels by 2020, the statutory limits in the California Global Warming Solutions Act of 2006.

Scott Anders, EPIC, will present key findings of the report and answer questions.

Background

This is the first inventory of its kind in San Diego and perhaps California. The report provides fact-based information about the sources of greenhouse emissions in the region in order to help local and regional decision-makers prioritize actions as they consider ways to reduce emissions. SANDAG contributed funds to this study and is utilizing the results for both the 2009 Regional Energy Strategy Update and development of its Regional Climate Action Plan.

The GHG Inventory is a joint project between EPIC and the Department of Chemistry and Biochemistry at USD. It calculated historical GHG emissions from 1990 to 2006 using the best available data, and then estimated future emissions to 2020 for San Diego County. Using emissions reduction targets codified in California’s Global Warming Solutions Act of 2006 (Assembly Bill 32 [AB 32]) as a guide, the study also sought to establish emissions reductions targets for the region. Although AB 32 does not require individual sectors or jurisdictions (e.g., cities and counties) to reduce emissions by a specific amount, the study calculated the theoretical emissions reductions necessary in each emissions category (e.g., transportation, electricity, etc.) for San Diego County to reduce emissions to 1990 levels by 2020. Finally, the study sought to identify and quantify potential emissions reduction strategies to determine the feasibility of reducing emissions to 1990 levels by 2020.

Attachment: 1. Executive Summary of San Diego County Greenhouse Gas Inventory

Key Staff Contact: Susan Freedman, (619) 699-7387, sfr@sandag.org
San Diego County
Greenhouse Gas Inventory

An Analysis of Regional Emissions and Strategies to Achieve AB 32 Targets
Authors:

Scott J. Anders  
*Director, Energy Policy Initiatives Center, University of San Diego School of Law*

David O. De Haan, Ph.D  
*Associate Professor of Chemistry, University of San Diego*

Nilmini Silva-Send, Ph.D  
*Senior Policy Analyst, Energy Policy Initiatives Center, University of San Diego School of Law*

Sean T. Tanaka  
*Energy and Environment Research Scientist and Engineer, Tanaka Research and Consulting*

Lauren Tyner  
*2008 Graduate University of San Diego, Chemistry and Biochemistry*

Acknowledgements:

This project could not have happened without the generous support of the San Diego Foundation, San Diego Association of Governments and NRG Energy, Inc.

The authors would like to thank the following individuals (listed alphabetically by organization) for their help in providing data, reviewing drafts and providing insightful comments, and for their advice and counsel during the project: Andy Alexis, Nicole Dolney, Kevin Eslinger, Larry Hunsaker, Karen Lutter, Ben Montoya, Webster Tasat and Walter Wong of the California Air Resources Board (CARB); Andrea Cook of the California Center for Sustainable Energy (CCSE); Al Alvarado, Gerry Bemis and Tom Gorin of the California Energy Commission (CEC); Judith Icklé and Scott Murtishaw of the California Public Utilities Commission (CPUC); John Theroux of the City of San Diego; Wayne Spencer of the Conservation Biology Institute; Michelle White, Dave Carey and Darren Correia of the Port of San Diego; Albert Mar of the San Diego Air Pollution Control District (APCD); Robert Anderson, David Barker and Gregory K. Katsapis of San Diego Gas & Electric (SDG&E); Anne Fege and Exequiel Ezcurra of the San Diego Natural History Museum; Ted Anasis, Phil Bracamonte and Nelson Kelly of the San Diego Regional Airport Authority; Melissa Porter of the County of San Diego, Solid Waste Local Enforcement Agency; and Steve Messner and John Westerman of Science Applications International Corporation (SAIC). We would also like to thank Merry Maisel of Sherwood Associates, our project editor.

Liz Kraak (USD ’07), Rebecca Kress and Andrea McBeth (USD ’08) also contributed to this report.

For an electronic copy of this summary report and the full documentation of the San Diego Greenhouse Gas Inventory project, go to www.sandiego.edu/epic/ghginventory.
Table of Contents

Key Findings ............................................................................................................. 2
Report Overview ........................................................................................................ 2

Greenhouse Gas Emissions in San Diego County .................................................... 3
  Emissions Projections ............................................................................................ 5
  Regional Greenhouse Gas Emissions by Category ............................................... 6
  Emissions from Cars and Trucks .......................................................................... 8
  Emissions from Electricity Use ............................................................................. 9
  Emissions from Natural Gas End-use ................................................................ 10
  Sequestration and Wildfires ................................................................................ 10
  Emissions Reduction Targets .............................................................................. 11
  Reduction Strategies—Wedges ............................................................................ 11

Conclusion .................................................................................................................. 15

Table of Figures

Figure 1  San Diego County and California GHG Emissions .............................. 3
Figure 2  2006 San Diego County GHG Emissions by IPCC Category ............ 4
Figure 3  2006 San Diego County GHG Emissions by Economic Sector ......... 4
Figure 4  Comparison of Total and Per-capita Emissions
  San Diego County ................................................................................................. 5
Figure 5  Total GHG Emissions for San Diego County (1990-2020) ............ 5
Figure 6  San Diego County GHG Emissions by Category (2006) ............... 6
Figure 7  Top 10 GHG Emitting Subcategories
  San Diego County (2006) ................................................................................... 8
Figure 8  GHG Emissions from Passenger Vehicles and
  Light-duty Trucks, San Diego County ................................................................. 8
Figure 9  On-Road Transportation GHG Emissions by Vehicle Type
  San Diego County (2006) ................................................................................... 9
Figure 10 Electricity GHG Emissions by Subcategory
  San Diego County (2006) .................................................................................. 9
Figure 11 Natural Gas End-use Emissions by Sector
  San Diego County (2006) .................................................................................. 9
Figure 12 Total GHG Sources and Sinks in San Diego County ....................... 10
Figure 13 Theoretical GHG Reduction Targets for San Diego County ........... 11
Figure 14 Emissions Reduction Wedges by Sector, San Diego County ........ 12
Figure 15 Emissions Reduction Strategies for San Diego County
  to Meet Hypothetical AB 32 Targets by 2020 ............................................... 14

List of Tables

Table 1  Emissions Inventory Categories ............................................................... 7
Table 2  Emissions Reduction Wedges to Achieve AB 32 Targets .................. 13
Table 3  San Diego County GHG Inventory and Emissions Projections ....... 16
Key Findings

- San Diego County emitted 34 million metric tons of carbon dioxide equivalent (MMT CO₂E) in 2006 – an 18% increase over 1990 levels, commensurate with population growth during the same period.

- In 2006, per-capita emissions for San Diego County were 12 metric tons CO₂E, which is slightly lower than California as a whole (13) and significantly lower than the U.S. levels (24).

- In 2006, emissions from cars and light-duty trucks represented 46% of total greenhouse gas emissions in San Diego County.

- By 2020, under a business-as-usual scenario, regional greenhouse gas emissions are expected to be 43 MMT CO₂E, an increase of 9 MMT CO₂E (26%) over 2006 levels and 14 MMT CO₂E (48%) over 1990 levels.

- To meet AB 32 emissions reduction targets (1990 levels by 2020), San Diego County would have to reduce emissions by 14 MMT CO₂E (33%) below projected business-as-usual levels in 2020.

- Nearly 60% of total regional emissions are associated with individuals (e.g., passenger vehicles, light-duty trucks, residential electricity and natural gas consumption).

- San Diego County likely can reduce its greenhouse gas emissions to 1990 levels by 2020 through a combination of reduction strategies from all sectors. This study estimates that through a combination of 21 strategies, the region could reduce its emissions by 15 MMT CO₂E by 2020, more than the quantity required to reach 1990 levels.

- In the scenario above, reductions from the on-road transportation sector (7 MMT CO₂E) and the electricity sector (5 MMT CO₂E) represent 81% of total reductions.

- Two statewide policies would account for 41% of these greenhouse gas emissions reductions. Implementing the Pavel (AB 1493) vehicle emissions standards by 2020 would reduce emissions by just over 3 MMT CO₂E, 21% of total reductions, and implementing a 33% renewable portfolio standard by 2020 would reduce emissions by 3 MMT CO₂E, 19% of total reductions.

Report Overview

This study developed a greenhouse gas inventory for San Diego County to better understand the emissions sources in the region and to serve as a resource for local and regional decision makers as they consider ways to reduce emissions at the local and regional levels. To that end, the project team calculated historical greenhouse gas emissions from 1990 to 2006 using the best available data, and then estimated future emissions to 2020 for San Diego County. Using emissions reduction targets codified in California’s Global Warming Solutions Act of 2006 (AB 32) as a guide, the study also sought to establish emissions reductions targets for the region. Although AB 32 does not require individual sectors or jurisdictions (e.g., cities and counties) to reduce emissions...
by a specific amount, the study calculated the theoretical emissions reductions necessary in each emissions category (e.g., transportation, electricity, etc.) for San Diego County to reduce emissions to 1990 levels by 2020—the statewide statutory target under AB 32. Finally, the study sought to identify and quantify potential emissions reduction strategies to determine the feasibility of reducing emissions to 1990 levels by 2020.

To the extent possible, the study followed the same calculation methodology used by the California Air Resources Board (CARB) to develop the statewide greenhouse gas inventory. In some instances, when doing so could yield a more accurate or precise result, the project modified the CARB method. This summary report is intended as an overview of the findings from the inventory, and no discussion of method is included. It provides information about the total greenhouse gas emissions for San Diego County and a summary of the highest emitting categories, including on-road transportation, electricity, and natural gas end-use consumption. It also gives an overview of the emissions reduction strategy analysis for each category of the inventory. Detailed analysis for each emissions category, including emissions levels, emissions reduction strategies (wedges), and detailed methodologies for calculating emissions are provided in eight supplemental reports available for download on the Energy Policy Initiatives Center Web site.¹

**Greenhouse Gas Emissions in San Diego County**

In 2006 San Diego County emitted 34 million metric tons of carbon dioxide equivalent (MMT CO₂E), an increase of 5 MMT CO₂E (18%) over 1990 level emissions.² This increase is commensurate with growth in regional population, which increased at the same rate during this period. Statewide emissions grew at rate of about 12% during this same period. Though this is slightly lower, the general trends have been similar. Figure 1 shows San Diego County and California statewide greenhouse gas emissions from 1990 through 2006. Note that 2003 emissions are significantly higher due to the wildfires in San Diego County that year.

---

¹. Detailed reports are available at www.sandiego.edu/epic/ghginventory.
². Carbon dioxide equivalent includes the sum of all greenhouse gases converted to the global warming potential (GWP) of carbon dioxide. For example, the GWP for methane is 21. This means that 1 million metric tons of methane is equivalent to emissions of 21 million metric tons of carbon dioxide.
Greenhouse gas emissions in San Diego County are primarily the result of energy use, 91% of total emissions are associated with fuel use. Figure 2, compares emissions in the four principal categories established by the United Nations Intergovernmental Panel on Climate Change (IPCC).

Dividing San Diego County greenhouse gas emissions by economic sectors, as shown in Figure 3, reveals that the residential sector is responsible for more than half of all San Diego County emissions. When aggregated, the impact of individual actions on San Diego County’s regional greenhouse gas levels is significant. The combination of passenger vehicles, light-duty trucks, residential electricity use, and natural gas consumption accounts for about 19 MMT CO₂E, or 56% of total emissions. These are the sectors for which residential data are readily available, and it assumes that all light-duty trucks are used by individuals rather than by the commercial or industrial sectors.³ It is possible that a portion of passenger vehicles and light-duty trucks are used for commercial and industrial purposes, which would lower this estimate, but it is also true that the portion of civil aviation and waste attributable to individuals would increase slightly the estimated impact of individuals.⁴

---

3. This is consistent with CARB’s designation of these vehicle categories as “non-commercial.”
4. Data was not available to divide emissions from civil aviation and waste into economic sectors.
Per-capita emissions for the San Diego region was 12 metric tons of CO$_2$E in 2006 and has been basically flat since 1990; however, total emissions increased by 18%, as shown in Figure 4. It should be noted that while per-capita metrics are useful for comparing different geographical entities, total emissions is the most important metric, since the object of AB 32 and other similar polices is to reduce the absolute amount of greenhouse gases in the atmosphere.

Emissions Projections

Given a business-as-usual trajectory, defined as no change in current trends or policies, greenhouse gas emissions from San Diego County will be approximately 43 MMT CO$_2$E in 2020, a 26% increase over 2006 levels and a 48% increase over 1990 levels. Figure 5 shows the projected emissions levels under the business-as-usual scenario.
Regional Greenhouse Gas Emissions by Category

While many different sources emit greenhouse gases in San Diego County, a few sources account for the vast majority of emissions in San Diego County. The on-road transportation category—comprising cars and trucks—is by far the largest contributor of greenhouse gas emissions in the region, accounting for 46% of the total, almost twice as much as the next largest sector. Electricity generation and natural gas combustion were the second (25%) and third (9%) highest emitting sectors. These top three categories emit 80% of total greenhouse gases in San Diego County. Civil aviation, mainly interstate flights from Lindbergh Field, is the fourth highest emitting category (5%). Given San Diego’s economic make up, emissions associated with non-fuel industrial processes and product use (mainly refrigerants) are relatively small and represent just under 5% of emissions, slightly higher than the emissions from the other fuels/other category (4%), which includes the use of fuels such as propane, which are not captured in other categories of the inventory. Finally, off-road transportation and equipment activities, which include construction and mining equipment, pleasure boats, and some agricultural equipment, account for about 4% of the emissions. Figure 6 shows the breakdown of emissions by source. A detailed table of inventory results can be found on page 16 of this report. (Table 3)

5. Emissions from industrial activities involving fuel combustion are captured mainly in the electricity and natural gas categories.
Table 1 shows the emissions categories and subcategories included in the inventory.

### Table 1. Emissions Inventory Categories

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AGRICULTURE</strong></td>
<td>Enteric Fermentation</td>
</tr>
<tr>
<td></td>
<td>Manure</td>
</tr>
<tr>
<td><strong>CIVIL AVIATION</strong></td>
<td>Interstate Flights</td>
</tr>
<tr>
<td></td>
<td>Intrastate Flights</td>
</tr>
<tr>
<td><strong>ELECTRICITY</strong></td>
<td>Residential</td>
</tr>
<tr>
<td></td>
<td>Commercial</td>
</tr>
<tr>
<td></td>
<td>Industrial</td>
</tr>
<tr>
<td></td>
<td>Mining</td>
</tr>
<tr>
<td></td>
<td>Agricultural</td>
</tr>
<tr>
<td></td>
<td>Telephone, communications, utilities (TCU)</td>
</tr>
<tr>
<td></td>
<td>Street Lighting</td>
</tr>
<tr>
<td><strong>DEVELOPMENT</strong></td>
<td>Loss of farmland</td>
</tr>
<tr>
<td></td>
<td>Loss of native vegetation</td>
</tr>
<tr>
<td><strong>INDUSTRIAL PROCESSES AND PRODUCTS</strong></td>
<td>HFC refrigerants</td>
</tr>
<tr>
<td></td>
<td>Sulfur hexafluoride</td>
</tr>
<tr>
<td></td>
<td>Other</td>
</tr>
<tr>
<td><strong>NATURAL GAS END USES</strong></td>
<td>Residential</td>
</tr>
<tr>
<td></td>
<td>Commercial</td>
</tr>
<tr>
<td></td>
<td>Industrial</td>
</tr>
<tr>
<td></td>
<td>Mining</td>
</tr>
<tr>
<td></td>
<td>Agricultural</td>
</tr>
<tr>
<td><strong>OFF-ROAD EQUIPMENT AND VEHICLES</strong></td>
<td>Construction and Mining Equipment</td>
</tr>
<tr>
<td></td>
<td>Pleasure Craft</td>
</tr>
<tr>
<td></td>
<td>Industrial Equipment</td>
</tr>
<tr>
<td></td>
<td>Agriculture Equipment</td>
</tr>
<tr>
<td></td>
<td>Other</td>
</tr>
<tr>
<td><strong>ON-ROAD TRANSPORTATION</strong></td>
<td>Passenger Vehicles</td>
</tr>
<tr>
<td></td>
<td>Light-Duty Trucks</td>
</tr>
<tr>
<td></td>
<td>Heavy-Duty Trucks and Vehicles</td>
</tr>
<tr>
<td></td>
<td>Motorcycle</td>
</tr>
<tr>
<td><strong>OTHER FUELS/OTHER</strong></td>
<td>Manufacturing</td>
</tr>
<tr>
<td></td>
<td>Transport</td>
</tr>
<tr>
<td></td>
<td>Residential</td>
</tr>
<tr>
<td></td>
<td>Commercial</td>
</tr>
<tr>
<td></td>
<td>Non-Specified</td>
</tr>
<tr>
<td></td>
<td>Agriculture</td>
</tr>
<tr>
<td></td>
<td>Cogeneration Thermal Emissions</td>
</tr>
<tr>
<td><strong>RAIL TRANSPORTATION</strong></td>
<td></td>
</tr>
<tr>
<td><strong>SEQUESTRATION FROM LAND COVER</strong></td>
<td>Forest growth</td>
</tr>
<tr>
<td></td>
<td>Woodland growth</td>
</tr>
<tr>
<td></td>
<td>Chaparral, scrub, and grasslands</td>
</tr>
<tr>
<td><strong>WASTE</strong></td>
<td>Landfills</td>
</tr>
<tr>
<td></td>
<td>Wastewater Treatment</td>
</tr>
<tr>
<td><strong>WATER-BORNE NAVIGATION</strong></td>
<td>Ocean Going Vessels (OGV)</td>
</tr>
<tr>
<td></td>
<td>Harbor Craft</td>
</tr>
<tr>
<td><strong>WILDFIRES</strong></td>
<td>Forest</td>
</tr>
<tr>
<td></td>
<td>Woodlands</td>
</tr>
<tr>
<td></td>
<td>Chaparral, scrub, and grasslands</td>
</tr>
</tbody>
</table>
Figure 7 shows the top 10 emitting subcategories in San Diego County in 2006. Light-duty trucks and passenger vehicles are the highest emitting subcategories by a wide margin in all years. In 2003, the year of the devastating wildfires, emissions from all fires were the single largest source of greenhouse gases in the region that year, totaling 8 MMT CO₂E (20% of total emissions).

### Emissions from Cars and Trucks

In 2006, light-duty trucks accounted for just over 50% of total on-road emissions, while passenger vehicles accounted for nearly 38%. Emissions from passenger vehicles were higher than those from light-duty trucks until 2003, when light-duty trucks became the highest emitting vehicle type in San Diego County (Figure 8). Figure 9 shows the on-road greenhouse gas emissions in 2006 by vehicle type.

---

6. TCU is transportation, communication, and utilities.
By 2020, greenhouse gas emissions from on-road vehicles are expected to reach 19 MMT CO₂E, a 21% increase over 2006 levels. Light-duty trucks are expected to continue to be the largest emitter among the vehicle classes representing nearly 50% of all emissions from the on-road transportation sector by 2020.

Emissions from Electricity Use

In 2006, electricity use accounted for 25% of total emissions in the region. About 44% of emissions from electricity came from consumption in the commercial sector. Residential sector consumption was close behind with 36%. Transportation, communication, and utilities (TCU) (9%) and the industrial sector (8%) are significantly lower than the leading subsectors. Figure 10 shows the relative breakdown of the electricity category.

Emissions from electricity use increased by about 31% between 1990 and 2006, faster than population growth, and they are expected to increase by 28% over 2006 levels by 2020 under a business-as-usual scenario.
Emissions from Natural Gas End-use

Emissions from combustion of natural gas by end-users accounts for just under 9% of total greenhouse gas emissions in San Diego County. Of this total, the residential sector accounts for 60% of emissions, while the commercial sector emits about 33%. Figure 11 shows the contribution of each end-use sector to total natural gas emissions. Emissions associated with power generation from natural gas are accounted for in the electricity sector data.

Sequestration and Wildfires

In addition to the sources of emissions described above, this study estimated the ability of the vegetation in the county to absorb and sequester greenhouse gases. Carbon dioxide is taken up by growing plants and released again by decomposing plant matter displaced by development. During wildfires, the carbon dioxide stored in vegetation is released along with the other greenhouse gases nitrous oxide and methane. Figure 12 shows the total sources and sinks of greenhouse gas emissions for San Diego County from 1990 to 2008. The very small green bars at the bottom indicate the level of carbon dioxide sequestered by vegetation. By contrast, the red bars at the top indicate the amount of greenhouse gas emitted by wildfires. The 2003 firestorm released nearly 8 MMT CO₂E, more greenhouse gases than any other single emitting subcategory that year. These fires caused greenhouse gas emissions for that year to reach levels approximately equivalent to the projected emissions for 2017.
Emissions Reduction Targets

In 2006, California Governor Arnold Schwarzenegger signed the Global Warming Solutions Act (AB 32), establishing statutory limits on greenhouse gas emissions in California. AB 32 seeks to reduce statewide emissions to 1990 levels by the year 2020. While AB 32 does not specify reduction targets for specific sectors or jurisdictions, this study calculated theoretical reductions targets for San Diego County. To meet the targets established by AB 32, the San Diego region would have to reduce its projected business-as-usual 2020 emissions by 14 MMT CO₂E or 33%.

In 2005, Governor Schwarzenegger signed Executive Order S-3-05, which establishes long-term targets for greenhouse gas emissions reductions to levels 80% below 1990 levels by 2050. While this reduction target is not law, it is generally accepted as the long-term target of California regulations. Like AB 32, Executive Order S-3-05 is intended to be a statewide target, but if applied hypothetically to San Diego County, total emissions would have to be reduced to 6 MMT CO₂E, 37 MMT CO₂E (87%) below the 2020 business-as-usual projection and 28 MMT CO₂E (83%) below 2006 levels. Figure 13 illustrates the magnitude of the theoretical emissions reductions necessary if San Diego County were required to meet both AB 32 and Executive Order S-3-05 targets.

Reduction Strategies—Wedges

To illustrate how San Diego County could achieve the AB 32 targets and reduce emissions by 14 MMT CO₂E, the project team developed a range of strategies and calculated how much each could reduce emissions. The results were used to develop emissions reduction “wedges” illustrated in Figure 14 and Table 2. This approach was adapted from the well-known study by Pacala and Sokolow demonstrating that global emissions could be reduced to levels that would stabilize climate change using existing technologies. They took the total reductions needed to stabilize emissions and split that amount into equal parts, or wedges, each wedge representing an equal reduction.

This study followed a similar approach to demonstrate how San Diego County could reduce its greenhouse gas emissions to meet AB 32 targets. Instead of making equal wedges to achieve the reduction goals, the project team developed specific wedges.

---

7. For simplicity, the business-as-usual projection is smoothed from 1990 to 2020.
to show the effects of existing or expected policy changes. In most cases, wedges represent emissions reductions associated with existing law or regulation or are based on an authoritative source. In some cases, wedges were calculated on the basis of hypothetical but practical or realistic future policy changes. Figure 14 shows the relative greenhouse gas reduction possible from each major emissions category. The highest emitting categories also have the potential for the most emissions reduction. The on-road transportation and electricity categories account for 81% of total reductions: on-road transportation contributing 7 MMT CO₂E (45%) and electricity contributing 5 MMT CO₂E (36%) to the total. Some sectors have no emissions reduction wedge, due to their limited reduction potential.

The study identified 21 emissions reduction wedges and calculated how much each could reduce greenhouse gas emissions by 2020. Table 2 shows each wedge, its category, and the amount of emissions that it could reduce by 2020. The combined emissions reductions of these 21 wedges are 15 MMT CO₂E, slightly more than the 14 MMT CO₂E needed to reach AB 32 emissions targets prorated for San Diego County.

The largest reductions derive from state standards for renewable energy, vehicle tailpipe emissions, and clean fuels. California’s tailpipe carbon dioxide regulations (Pavley) if fully implemented would account for 21% of total emissions reductions by 2020. It should be noted that the Pavley regulations would reduce emissions by just over 3 MMT CO₂E, significantly more than the new Federal corporate average fleet efficiency (CAFE) standards, adopted as part of the Federal energy legislation passed in 2007, which would reduce regional emissions by about 2 MMT CO₂E.

---

9. See AB 1493 (Pavley).
<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>REDUCTION AMOUNT (MMT CO₂E)</th>
<th>PERCENTAGE OF TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ON-ROAD TRANSPORTATION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005 CAFE Standard</td>
<td>2.3</td>
<td>15%</td>
</tr>
<tr>
<td>Low-Carbon Fuel Standard</td>
<td>1.6</td>
<td>11%</td>
</tr>
<tr>
<td>Reduce Vehicle Miles Traveled by 10%</td>
<td>1.4</td>
<td>9%</td>
</tr>
<tr>
<td>Pavley Standard (Incremental to CAFE)*</td>
<td>0.9</td>
<td>6%</td>
</tr>
<tr>
<td>Light/Heavy Vehicle Efficiency/Hybridization</td>
<td>0.6</td>
<td>4%</td>
</tr>
<tr>
<td><strong>ELECTRICITY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renewable Portfolio Standard 20%</td>
<td>2.0</td>
<td>13%</td>
</tr>
<tr>
<td>Reduce Electricity Consumption 10%</td>
<td>1.1</td>
<td>7%</td>
</tr>
<tr>
<td>Renewable Portfolio Standard 33% (Incremental)</td>
<td>1.0</td>
<td>7%</td>
</tr>
<tr>
<td>Cleaner Electricity Purchases (≤1100 lbs/MWh)</td>
<td>0.6</td>
<td>4%</td>
</tr>
<tr>
<td>Replace Boardman Contract</td>
<td>0.3</td>
<td>2%</td>
</tr>
<tr>
<td>California Solar Initiative 400 MW</td>
<td>0.2</td>
<td>1%</td>
</tr>
<tr>
<td>Increase CHP by 200 MW</td>
<td>0.2</td>
<td>1%</td>
</tr>
<tr>
<td><strong>INDUSTRIAL PROCESSES AND PRODUCTS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase out of HFCs</td>
<td>1.3</td>
<td>9%</td>
</tr>
<tr>
<td><strong>OFF-ROAD EQUIPMENT AND VEHICLES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduce Fuel Consumption by 15%</td>
<td>0.4</td>
<td>3%</td>
</tr>
<tr>
<td>Low-Carbon Fuel Standard</td>
<td>0.2</td>
<td>1%</td>
</tr>
<tr>
<td>Reduce Pleasure Craft Fuel Use by 35%</td>
<td>0.1</td>
<td>1%</td>
</tr>
<tr>
<td><strong>NATURAL GAS END-USE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduce Natural Gas Consumption 8%</td>
<td>0.3</td>
<td>2%</td>
</tr>
<tr>
<td><strong>CIVIL AVIATION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civil Aviation Low-Carbon Fuel Standard</td>
<td>0.3</td>
<td>2%</td>
</tr>
<tr>
<td><strong>WASTE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capture 80% of Landfill Gas</td>
<td>0.3</td>
<td>2%</td>
</tr>
<tr>
<td><strong>AGRICULTURE/FORESTRY/LAND USE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban Tree Planting / Preservation</td>
<td>0.02</td>
<td>0.1%</td>
</tr>
<tr>
<td>Tree Preservation during Development</td>
<td>0.03</td>
<td>0.2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15.0</td>
<td>100%</td>
</tr>
</tbody>
</table>

*The entire reduction attributable to Pavley is 3.2 MMT CO₂E (CAFE & Pavley).*
Figure 15 shows the magnitude of each individual emissions reduction wedge.

Emissions reductions from the Renewable Portfolio Standard (RPS) wedges account for 20% of total reductions. California’s RPS requires the state’s three investor-owned utilities to provide at least 20% of energy supplies from renewable sources by 2010.10

The emissions savings attributed to the 20% RPS wedge presented in Table 2 represents incremental renewable energy additions above levels already achieved by the local utility. In addition, the California Energy Commission’s Integrated Energy Policy Report for 2007 recommends increasing the RPS to 33%.11 While this increase to 33% is not law, it is very likely to be codified in the coming years. The wedge amount in Table 2 for the 33% RPS represents the incremental emissions reductions over the existing RPS requirements that would be achieved by increasing renewable energy supplies an additional 13%. A single amount for both the 20% and 33% RPS is presented in Figure 15.

The California Air Resources Board (CARB) has approved the Low-Carbon Fuel Standard as an early action measure for meeting AB 32 emissions reduction targets. This standard,

---

which was promulgated in Executive Order S-01-07, would reduce the carbon intensity of transportation fuels sold in California by 10% by 2020. Applying this standard to fuels used by on-road vehicles would reduce greenhouse gas emissions by 11%. Reduction in vehicle miles traveled and increased vehicle efficiency measures make up the final transportation wedges.

While many of the strategies identified here are based in state and federal law, there is a significant role for local governments in realizing emissions reductions. While local governments can help to facilitate statewide standards like the renewable portfolio standard, they can play a more direct role in locally and regionally based strategies. Strategies include reducing vehicle miles traveled, electricity and natural gas consumption, increasing use of distributed energy resources such as cogeneration and photovoltaics, and capturing more methane gas at our region’s landfills.

**Conclusion**

San Diego County emitted 34 million MMT CO$_2$E in 2006—an 18% increase over 1990 levels. This increase is commensurate with the increase in county population and statewide trends over the same period. On-road transportation, mainly cars and light-duty trucks, was responsible for 16 MMT CO$_2$E in 2006, 46% of total greenhouse gas emissions in San Diego County for that year, and was by far the largest emitting category of the inventory. The electricity category emitted 7 MMT CO$_2$E (25%) and natural gas end-use emitted 3 MMT CO$_2$E (9%). These top three emitting categories are significantly associated with activities by individuals (e.g., driving and home electricity and natural gas use); thus nearly 60% of total regional emissions are associated with individual activities.

By 2020, under a business-as-usual scenario, regional greenhouse gas emissions are expected to be 43 MMT CO$_2$E, increase of 8.52 MMT CO$_2$E (26%) over 2006 levels. Even though AB 32 does not specify reduction targets for counties, to achieve its emissions reduction targets (1990 levels by 2020), San Diego County would have to reduce emissions by 14 MMT CO$_2$E (30%) below projected business-as-usual levels in 2020. San Diego County can reduce its greenhouse gas emissions to 1990 levels by 2020 through a combination of reductions strategies from all sectors, mainly driven by renewable energy mandates, fuel efficiency standards, and a low-carbon fuel standard. This study estimates that through a combination of 21 strategies, the region could reduce its emissions by 15 MMT CO$_2$E by 2020, slightly more than required to reach 1990 levels.

Clearly, meeting the greenhouse gas emissions targets of AB 32 targets will involve the entire state, and actions taken on a multi-county or regional basis may well influence the contributions made by or needed from San Diego County. A detailed analysis of the local and regional policy changes necessary to achieve the potential emissions reductions presented here was beyond the purview of this report, but will be addressed in the next phase of the project.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ON-ROAD TRANSPORTATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger Vehicles</td>
<td>7.4</td>
<td>6.5</td>
<td>6.3</td>
<td>6.2</td>
<td>6.5</td>
<td>6.6</td>
</tr>
<tr>
<td>Light-Duty Trucks</td>
<td>5.1</td>
<td>5.1</td>
<td>3.9</td>
<td>7.6</td>
<td>8.5</td>
<td>8.4</td>
</tr>
<tr>
<td>Heavy-Duty Trucks and Vehicles</td>
<td>1.8</td>
<td>1.6</td>
<td>1.7</td>
<td>1.6</td>
<td>1.9</td>
<td>2.0</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>0.04</td>
<td>0.03</td>
<td>0.02</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>ELECTRICITY</strong></td>
<td>0.5</td>
<td>7.2</td>
<td>8.0</td>
<td>8.2</td>
<td>9.4</td>
<td>10</td>
</tr>
<tr>
<td>Residential</td>
<td>2.4</td>
<td>2.6</td>
<td>2.2</td>
<td>3.9</td>
<td>3.4</td>
<td>3.4</td>
</tr>
<tr>
<td>Commercial</td>
<td>2.6</td>
<td>2.9</td>
<td>3.6</td>
<td>3.7</td>
<td>4.3</td>
<td>4.7</td>
</tr>
<tr>
<td>Industrial</td>
<td>0.7</td>
<td>0.7</td>
<td>0.5</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Mining</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Agriculture</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>TCU</td>
<td>0.6</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Street Lighting</td>
<td>0.03</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.05</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>NATURAL GAS ENDUSES</strong></td>
<td>3.0</td>
<td>2.8</td>
<td>2.6</td>
<td>2.9</td>
<td>3.2</td>
<td>3.4</td>
</tr>
<tr>
<td>Residential</td>
<td>1.8</td>
<td>1.7</td>
<td>1.8</td>
<td>1.9</td>
<td>2.0</td>
<td>2.1</td>
</tr>
<tr>
<td>Commercial</td>
<td>0.7</td>
<td>0.7</td>
<td>0.5</td>
<td>0.9</td>
<td>1.0</td>
<td>1.1</td>
</tr>
<tr>
<td>Industrial</td>
<td>0.4</td>
<td>0.3</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Mining</td>
<td>0.04</td>
<td>0.02</td>
<td>0.01</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Agricultural</td>
<td>0.03</td>
<td>0.03</td>
<td>0.02</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td><strong>OFF-ROAD EQUIPMENT AND VEHICLES</strong></td>
<td>1.0</td>
<td>1.0</td>
<td>1.2</td>
<td>1.3</td>
<td>1.4</td>
<td>1.5</td>
</tr>
<tr>
<td>Construction and Mining Equipment</td>
<td>0.4</td>
<td>0.5</td>
<td>0.6</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Pressure Craft</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Industrial Equipment</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Agriculture Equipment</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Other</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>CIVIL AVIATION</strong></td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Interstate</td>
<td>1.0</td>
<td>1.1</td>
<td>1.4</td>
<td>1.7</td>
<td>1.8</td>
<td>1.9</td>
</tr>
<tr>
<td>Intranstate</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>WASTE</strong></td>
<td>0.9</td>
<td>1.1</td>
<td>0.5</td>
<td>0.4</td>
<td>0.7</td>
<td>0.8</td>
</tr>
<tr>
<td>Landfills</td>
<td>0.3</td>
<td>0.5</td>
<td>0.3</td>
<td>0.4</td>
<td>0.4</td>
<td>0.5</td>
</tr>
<tr>
<td>Wastewater Treatment</td>
<td>0.6</td>
<td>0.6</td>
<td>0.3</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>INDUSTRIAL PROCESSES AND PRODUCTS</strong></td>
<td>0.3</td>
<td>0.7</td>
<td>1.2</td>
<td>1.6</td>
<td>2.0</td>
<td>2.4</td>
</tr>
<tr>
<td>HFC Refrigerants</td>
<td>0.001</td>
<td>0.3</td>
<td>0.8</td>
<td>1.2</td>
<td>1.6</td>
<td>2.0</td>
</tr>
<tr>
<td>Sulfur Hexafluoride</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>3.05</td>
<td>0.03</td>
</tr>
<tr>
<td>Other</td>
<td>0.3</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>WATER-BORNE NAVIGATION</strong></td>
<td>0.04</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Ocean Going Vessels (DGV)</td>
<td>0.03</td>
<td>0.0</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Harbor Craft</td>
<td>0.01</td>
<td>0.03</td>
<td>0.02</td>
<td>0.02</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td><strong>RAIL TRANSPORTATION</strong></td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>OTHER OTHER FUELS</strong></td>
<td>1.6</td>
<td>1.4</td>
<td>1.5</td>
<td>1.3</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>0.7</td>
<td>0.5</td>
<td>0.5</td>
<td>0.6</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Transport</td>
<td>0.2</td>
<td>0.1</td>
<td>0.04</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Non-Specified</td>
<td>0.04</td>
<td>0.04</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Residential</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Energy</td>
<td>0.02</td>
<td>0.02</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Commercial</td>
<td>0.3</td>
<td>0.2</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Cogeneration Non-Electrical</td>
<td>0.3</td>
<td>0.4</td>
<td>0.4</td>
<td>0.3</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td><strong>AGRICULTURE LIVESTOCK</strong></td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Cattle Fermentation</td>
<td>0.1</td>
<td>0.1</td>
<td>0.05</td>
<td>0.04</td>
<td>0.03</td>
<td>0.02</td>
</tr>
<tr>
<td>Mariner</td>
<td>0.1</td>
<td>0.1</td>
<td>0.04</td>
<td>0.03</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td><strong>WILDFIRES</strong></td>
<td>0.2</td>
<td>0.6</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Fire</td>
<td>0.03</td>
<td>0.04</td>
<td>0.05</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Woodland</td>
<td>0.01</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Chaparral, Scrub, and Grasslands</td>
<td>0.1</td>
<td>0.5</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>DEVELOPMENT (LOSS OF VEGETATION)</strong></td>
<td>0.1</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Loss of Farmland</td>
<td>0.04</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Loss of Native Vegetation</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td><strong>SEQUESTRATION FROM LAND COVER</strong></td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Forest</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Woodland Growth</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Chaparral, Scrub, and Grasslands</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
</tr>
</tbody>
</table>

| **TOTAL** | 29 | 29 | 31 | 34 | 37 | 39 | 43 |
About the Energy Policy Initiatives Center (EPIC)

The Energy Policy Initiatives Center (EPIC) is a nonprofit academic and research center of the University of San Diego School of Law that studies energy policy issues affecting the San Diego region and California. EPIC integrates research and analysis, law school study and public education. The organization also serves as a source of legal and policy expertise and information in the development of sustainable solutions that meet our future energy needs.

For more information, please visit the EPIC Web site at www.sandiego.edu/epic.

About the College of Arts and Sciences

The College of Arts and Sciences is a liberal arts college that is both historically and educationally the core of the University of San Diego. The intellectual disciplines within arts and sciences assist students in developing a coherent, integrated and rich world view. Each intellectual discipline in the college reflects a sense of community by involving students in a network of scholars.

For more information, please visit the college Web site at www.sandiego.edu/as/.

About the Department of Chemistry & Biochemistry

University of San Diego’s Department of Chemistry & Biochemistry is a student-centered department offering bachelor’s degrees in both chemistry and biochemistry and a research-centered curriculum. The department shares the spacious new Donald P. Shiley Center for Science and Technology with three other science departments. Aspiring to become a national leader in undergraduate education and research, the department recently received a five-year Department Development Award from Research Corporation.

For more information, please visit the department Web site at www.sandiego.edu/chemistry/.
SUSTAINABLE REGION PROGRAM FOR LOCAL GOVERNMENTS

Introduction

Susan Freedman, SANDAG, Jennifer Green, California Center for Sustainable Energy (CCSE), and Risa Baron, SDG&E will jointly present energy saving activities undertaken this year with the Cities of Solana Beach, Poway, and Imperial Beach under the Sustainable Region Program (SRP) and discuss expanding the program to additional cities in 2009-2011. At the October EWG Meeting, Ms. Baron and Ms. Freedman will discuss and solicit input on analysis underway to integrate energy efficiency and greenhouse gas (GHG)-reducing measures into municipal General Plans and codes and standards. A presentation on the SRP is attached (Attachment 1).

In addition, Ms. Green will present and solicit feedback on a draft report on financing municipal energy-saving initiatives in California. EWG members can provide comments at the meeting and in writing to Ms. Green through October 7, 2008.

Background

SRP is an energy-saving program for local governments that provides technical assistance and staff support to cities that either have not participated or have participated minimally in regional energy efficiency, renewable, and green building programs available to them. The program addresses energy-saving measures for existing buildings and new construction as well as policy measures that local governments can adopt. Policy measures now include integrating energy efficiency and GHG-reducing measures into General Plans and assessment of municipal codes and standards. A final product for each city will be an energy roadmap tailored to their needs.

For 2007-2008, the SRP has expanded to four cities through financial assistance from the California Energy Commission and SDG&E. CCSE and SDG&E are providing technical assistance to SANDAG and its member agencies. SRP is an expansion of a Carlsbad pilot project carried out in 2005-2006. This program will expand in 2009-2011 as a Local Government Energy Efficiency Partnership Program with SDG&E. The following cities are participating in the current SRP:

- City of Solana Beach
- City of Poway
- City of Imperial Beach
- City of Coronado


Key Staff Contact: Susan Freedman, (619) 699-7387, sfr@sandag.org
Sustainable Region Program (SRP) for Local Governments in the San Diego Region

Planning Smarter – Living Better

Susan Freedman, SANDAG
Jennifer Green, California Center for Sustainable Energy
Risa Baron, San Diego Gas and Electric

Energy Working Group Meeting
SANDAG
September 25, 2008

Presentation Overview

- State & regional energy policy drivers
- Sustainable Region Program (SRP) purpose and history
- SRP products for local governments
- Progress Report on work for participating cities
- Going forward 2009-2011: Local Government Energy Roadmap
A million new residents by 2030

A half million new jobs
SANDAG Response

- Develop regional, long-term plans that will meet the combined needs of the 18 cities and county of San Diego

- Provide guidelines and incentives to assist local government (member agency) planning
State Energy Policy Drivers

- State adopted “Preferred Loading Order”

  - CEC biannual report to Governor and Legislature
  - Energy policy blueprint for the state

- Energy Action Plan (EAP)
  - Jointly developed by CEC, CPUC, CalEPA
  - Implementation policies and programs

- AB 32 – Global Warming Solutions Act of 2006

- Executive Orders by Governor
  - Climate Change | Green Building

- Energy Efficiency Strategic Plan-DRAFT

Regional Energy Policy Drivers

- Regional Energy Strategy 2030 (SANDAG)
  - Long-term plan to set region on a more sustainable path
  - Adopted by SANDAG in 2003, update underway
  - Nine goals including more energy efficiency, renewable energy, distributed generation and reduced energy consumption

- Long Term Procurement Plan (SDG&E)
  - Long-term plan to “keep the lights on”
  - 10-year plan for the Region, required/approved by CPUC
  - Outlines how region will meet state requirements for energy efficiency, demand response, renewable energy, reliability, etc…
Sustainable Region Program (SRP)

- Currently funded by SANDAG member assessments, CEC, and SDG&E (2007 – 2008)
- Targets local governments with little or no experience in energy management planning
- Targets local governments that have not taken advantage of energy efficiency programs available to them, at little or no cost

Member Agencies in Pilot(s)

- City of Carlsbad (initial pilot in 2005-2006)
- Expanded Pilot 2007-2008
  - City of Poway (underway via CCSE)
  - City of Solana Beach (underway via CCSE)
  - City of Imperial Beach (underway via SDG&E)
  - City of Coronado (to begin 10/08 via SDG&E)
Sustainable Region Program

SANDAG bridges the gap by providing technical assistance and an alternate delivery mechanism to energy efficiency and renewable programs:

- Municipal building energy assessments
- New construction assessments
- Policy and General Plan assessments
- Performance monitoring mechanism
- Funding opportunities identified

Who Is Involved?

- Cross section of member agency staff
- City Planners / Economic Development
- Environmental Services
- Financial Services
- Public Works / General Services
- City Council / Mayor
- City Manager
- SANDAG, CCSE and SDG&E
  - One contact point across programs and staffs
  - Working jointly to educate and develop recommendations on municipal energy efficiency and renewable opportunities
Progress Report: Poway & Solana Beach

- Initial meetings with CCSE/municipal staff
  - Introduced program mission/goals/strategies
  - Initial discussion of municipalities’ needs
- Municipal building energy assessments conducted through June, supplemental meetings
- Next Steps:
  - Determining which EE ECOs can be implemented short-, mid- and long-term
  - General Plan analysis & recommendations

Progress Report: Imperial Beach

- Initial meetings with SDG&E/municipal staff
  - Introduced representatives to program mission/goals/strategies
  - Initial discussion of municipalities’ needs
- Energy assessments of municipal buildings conducted
- Identified energy efficiency and greenhouse gas (GHG)-reducing measures to integrate in city General Plan
- Next Steps:
  - Review EE ECOs for municipal buildings
  - Identify near term EE projects and GP recommendations
  - City of Coronado to begin in Fall 2008
Going Forward 2009-2011

- Program to expand as SDG&E Local Government Partnership
- SANDAG program name may change to “Local Government Energy Roadmap”
  - Provide standardized approach to energy planning and projects based on state, regional and local goals
  - Build institutional knowledge at local governments
  - Serve as conduit to additional energy efficiency program funds
  - Performance monitoring component

Energy Roadmap Elements

- Energy Assessments
- Code and Standards Review
- Land-Use Planning and Development Opportunities
- Clean Transportation
- Clean Generation
- Education and Outreach

*Energy Roadmaps will be consistent with state and regional policy drivers*
Additional SANDAG LGP Elements

- SANDAG cross-cutting Green Team
  - Green Team Operations Manual
  - Department or all staff trainings
  - Sustainable contracting assessment
- Pilot joint procurement initiative
- Education and outreach

Sustainable Region Program (SRP) for Local Governments in the San Diego Region

Planning Smarter – Living Better

Susan Freedman, SANDAG
Jennifer Green, California Center for Sustainable Energy
Risa Baron, San Diego Gas and Electric

Energy Working Group Meeting
SANDAG
September 25, 2008
OUTLINE FOR 2009 REGIONAL ENERGY STRATEGY UPDATE

Introduction

In November 2007, SANDAG submitted to the California Energy Commission a high-level outline to assist in the Regional Energy Strategy (RES) Update. A draft plan will be completed circa March 2009. As pieces of the RES Update are developed, they are being brought to the EWG for discussion. The RES Update will use a public process to develop a long-term energy plan to 2030 for the San Diego region that:

- Integrates land use, transportation, water, and climate change impacts;
- Addresses local implementation of the loading order;
- Identifies bi-national energy issues and solutions;
- Identifies energy imperatives for the region and implementation plan; and
- Is developed in a way that can be modeled by other regional and local governments in California.

Recommendation

The Energy Working Group is asked to review the updated RES outline and provide feedback to staff through discussion at this meeting and in written form by October 9, 2008.

Attachment: 1. Outline for 2009 RES Update

Key Staff Contact: Susan Freedman, (619) 699-7387, sfr@sandag.org
I. Executive Summary
   A. State of the Region on Energy
      1. Infrastructure
      2. Policy
   B. Why We’re Updating the Old Plan
   C. Planning Approach (Different energy, environment and policy priorities from 2003)
   D. Findings/Recommendations

II. Introduction
   A. SANDAG Regional Energy Planning History
   B. Why We’re Updating the Old Plan
   C. Previous Regional Energy Planning Outcomes (goals, establish EWG, establish CEC partnership)
   D. What Role Does SANDAG Play in Energy Policy for Region/State
      1. State and Regional Policy Drivers
      2. RPC and RTP: Guidance and Incentives
   E. The 2003 Energy Plan (why that focus, why SANDAG)
   F. The 2009 Energy Plan
      1. Address implementation (focus on areas that SANDAG has some control over)
      2. Address transportation Sector, Electricity Sector, and Natural Gas.
      3. Role of Climate Change (sea change in policy in California)
      4. Focus on Actions Instead of Duplicating Efforts Done by Others (long-term resource plan; IOU does that already and CEC 3rd party verifies the data)

III. State of the Region: Meeting our Infrastructure Needs
   A. Demographics and Growth in the Region (population, housing, jobs, water, electricity)
      1. Electricity Outpacing and No Longer Correlating with Population Growth
   B. Policy Drivers Shape the Decisions on How to Plan for Growth
      1. RCP and RTP (integration of transportation & land use planning)
      2. Goals from the 2003 Plan (show performance Here)
      3. Preferred Loading Order (electricity & natural gas)
      4. Assembly Bill 32 Climate Change (all sectors)
      5. State and Federal Restrictions on Energy Sources (nuclear and coal) (E&NG)
      6. Requirements for Energy Sources (efficiency, DR, RPS, Pavley) (all sectors)
   C. Geographic Considerations for San Diego Energy
      1. End of the line in some ways, 2 borders are water and Mexico
      2. Shared Electric Grid with Baja
      3. NG pipelines and electric powerlines send energy both to and from region
      4. Tribal lands are separate energy sovereignties
5. Transportation Energy – Extensive interregional travel (San Diego workers residing in Riverside and Mexico)
6. Extensive cross border goods movement and idling
7. Major California port-electrification of idling vessels

IV. Transportation Energy
A. Goals/Any current performance indicators
   1. Reduce dependence on gasoline and diesel
   2. Reduce fuel costs associated with regional transportation
   3. Diversify fuel supply
   4. Provide transportation choices
   5. Restate 2003 RES Goal/status
B. Background – Existing Conditions and Trends
   1. Types of transportation
   2. Average Daily Trips (ADT) and Vehicle Miles Traveled (VMT)
   3. Vehicle Types/Classes
   4. Fuels
   5. Infrastructure
C. State Reconfiguration of the Transportation Sector
   1. Vehicle Types/Classes
   2. Expanded Fuels and Blends (dependent on vehicle type)
   3. Infrastructure
   4. Integration of Land Use Planning
D. Forecasts and Opportunities
   1. Business-as-usual in RTP
   2. Energy Consumption and Fuel Variety with State and Federal Adopted Goals
   3. Role/Impact of Regional Transportation Demand Management (TDM) Policies
      a. Smart Growth and Transit Enhanced
      b. Parking Fees
      c. Teleworking
      d. Flex Schedules (off peak driving)
      e. Rideshare/Vanpools
      f. Congestion Pricing
E. Policy Recommendations and New Performance Indicators
   1. Support &/or participate in federal, state actions
   2. Recommend regional actions and incentives
   3. Local implementation

V. Electricity
A. Goals/ Existing performance indicators (or address within supply and demand)
B. Electricity Supply
   1. Existing Conditions and Trends (CEC)
      a. Restate Relevant 2003 RES Goal(s)/status
2. Forecasts (CEC)
   a. Business-as-usual
   b. With state and federal adopted goals

C. Electricity Demand
   1. Restate Relevant 2003 RES Goal(s)/Status
   2. Loading Order Requirements (link RES goals and state goals)
      a. Energy Efficiency
      b. Demand Response
      c. Renewable energy
      d. Clean Distributed Generation
      e. Traditional Resources (SCNG and CCNG power plants, peaker plants, and transmission)
   3. Clearly Identify Energy Efficiency as Top Priority

D. Smart Grid to Modernize Electricity Communications and Reduce Waste

E. Policy Recommendations and Any New Performance Indicators
   1. Support and/or participate in federal, state actions
   2. Recommend regional actions and incentives
   3. Electricity Rates
   4. Local implementation

VI. Natural Gas
A. Goals and Existing Performance Indicators (or address in supply and demand)
B. Natural Gas Supply
   1. Existing Conditions and Trends (CEC)
      a. Restate Relevant 2003 RES Goal(s)/Status
   2. Forecasts (CEC)
      a. Business-as-usual
      b. With state and federal adopted goals
C. Natural Gas Demand
D. Policy Recommendations and Any New Performance Indicators
   1. Support &/or participate in federal, state actions
   2. Recommend regional actions and incentives
   3. Local implementation
   4. NG Rates

VII. Energy and Water (Possibly to fall under Electricity heading)
A. General Energy-Water Connection
B. Energy Intensity of San Diego Water Infrastructure
   1. Supply and Waste Transport
   2. End Uses
C. Energy Intensity of Supply Options (desal, reclamation, grey water use)
D. Policy Recommendations and Any New Performance Indicators
VIII. Energy and Our Borders
   A. Define as All Borders (binational, internal tribes, other counties)
   B. Energy Issues/Concerns/Coordination With Mexico (Transportation/Electricity/Natural Gas)
   C. “ “ with Riverside
   D. “ “ with Tribes
   E. Policy Recommendations and Any New Performance Indicators

IX. Land Use and Zoning
   A. Smart Growth
      1. Mixed-use development
      2. Transit-oriented development
   B. Local Government General Plan Element
   C. Local Government Codes and Standards
   D. Energy Efficiency and Green Building Resolutions or Ordinances
   E. Climate Change Ordinances
   F. Telecommuting/Alternative Work Week Policies
   G. Policy Recommendations and Any New Performance Indicators (benchmarking)

X. Energy Infrastructure Security
   A. Existing Goals/Performance Indicators
   B. Smart Grid
   C. Robust Infrastructure with Mix of Central and Decentralized Power
   D. Robust Mix of Renewable and Clean Nonrenewable Resources
   E. Policy Recommendations and Any New Performance Indicators

XI. Climate Change
   A. Goals and Existing Performance Indicators
   B. Energy White Paper Explanation and Refer to RCAP
   C. Energy Policy Recommendations that support GHG reductions and New Performance Indicators

XII. Table of All Policy Recommendations and Performance Indicators
   A. Example: Transportation Energy
      1. Objective T-1
         a. Actions
         b. Performance Indicators
         c. Barriers to Implementation
         d. Funding Sources
         e. Timeline for Completion

Appendices:
   A. List of Acronyms
   B. Glossary of Energy Terms
   C. Infrastructure Inventory (Omit and provide E-Link instead)
   D. Comments on RES Update: Energy Working Group Member Comments; State Advisory Task Force Comments; Public Comments
2008 EWG Meeting Calendar with SANDAG–California Energy Commission Contract Deliverables

I. October 23, 2008, EWG Meeting

1. First Draft Task 1.11
2. Final Draft Task 2.2 – SRP Toolkit.
3. Final Draft Task 1.5 – Regional Energy Strategy (RES) plan components
4. Final Draft Three (3) case studies of LEED-certified municipal buildings for Rebuild America grant
5. First Draft Rationale and recommendation for nonresidential energy efficient building standards above and beyond Title 24 (part of Rebuild America grant).

CEC Deadline: October 31, Task 2.2 – Sustainable Region Program Action Plan and Toolkit

II. November 20, 2008, EWG meeting (early due to Thanksgiving)

1. Final Draft Task 1.11 – RCAP detailed outline and plan components
2. Final Draft Task 1.5 – Identify necessary components for regional energy element

CEC Deadline: Task 1.5 – RES Identification of necessary components for regional energy element

III. December 18, 2008, EWG meeting (early due to Christmas)

1. Final Draft Task 3.3
2. Rebuild America Final draft deliverables (contract) on building above the nonresidential energy code

IV. December 31, 2008, CEC deadlines

1. Rebuild America Contract ends (all deliverables to be sent)
2. Task 3.3 ATFVP\(^2\) revised draft study to CEC

---

1 Please note that the Task Numbers referenced in this Calendar coincide with the Task Numbers identified in Agenda Item #8B, the amended calendar for the SANDAG–California Energy Commission (CEC) partnership.
2 Alternative Transportation Fuels and Vehicles Program
California Energy Commission (CEC) - SANDAG Partnership
Amended Scope of Work, September 2008

The San Diego Association of Governments (SANDAG) (the Contractor) shall, through research, public hearings, outreach and collaboration, develop and disseminate model planning and development tools and strategies. The tools and strategies shall be developed as transferable materials, applicable for use by other Metropolitan Planning Organizations (MPO), Councils of Government (COG), and local governments that wish to incorporate land use, transportation, climate change, and energy considerations into their planning efforts. The development of these tools and strategies shall be overseen by the Contractor and a State Advisory Task Force (SATF). The SATF will be assembled by the Energy Commission Contract Manager (CCM), who will invite representatives from all MPOs, COGs, local government nonprofit organizations, and state agencies, such as the California Air Resources Board (CARB) and the California Department of Transportation (Caltrans).

This project is divided into four tasks:

Task 1: Update the Regional Energy Strategy (RES) and Develop a Regional Climate Action Plan (RCAP)

Task 2: Expand Sustainable Region Pilot Program (SRP)

Task 3: Transportation and Energy: Alternative Transportation Fuels and Vehicles Program (ATFVP)

Task 4: Final Contract Report

Task 1. Tasks Update the Regional Energy Strategy and Develop a Regional Climate Action Plan

The SANDAG RES has served as the energy policy blueprint for the region, similar to the state’s Integrated Energy Policy Report. The Energy Commission’s 2006 IEPR Update process includes focus on regional energy planning and the integration of energy and land use planning. The Blueprint Learning Network (BLN) is a network of planning professionals brought together by Caltrans and works with the MPOs and COGs to advance regional blueprint planning. SANDAG shall partner with BLN on the development of RES to provide oversight of work products. The Energy Working Group (EWG) advises the SANDAG Regional Planning Committee (RPC) on issues related to the coordination and implementation of the RES adopted by the SANDAG Board of Directors in July 2003. EWG consists of elected officials from the City of San Diego, County of San Diego, and the four subareas of the region. In addition to elected officials, EWG includes stakeholders representing business, energy, environment, economy, education, and consumer interests.

Task 1A. Update the RES

RES development will be on monthly EWG meeting agendas. As the work effort progresses, items will be brought to other relevant advisory groups at SANDAG for input. All working groups and committee agendas are to be noticed and open to the public. The public must be able to provide comment.
Subtask 1.1  Review of 2003 San Diego RES

The Contractor shall prepare a report on existing RES and additions for future RES. The report shall include, but not be limited, to Strengths and Weaknesses of the current plan and Opportunities for the future plan.

Deliverable: Report on existing RES and additions for future RES
Deliverable Due Date: Completed – October 11, 2007

Subtask 1.2  Research and review of energy plans from other regions

The Contractor shall prepare a report on Energy Plans from other Regions in and out of California. The report shall contain, but not be limited to, an analysis of no less than seven (7) Plan backgrounds, highlights, analytical foundations, recommendations, and implementation strategies. The report also shall contain a selection of best practices from the reviewed plans that may be appropriate for SANDAG and other regions’ Energy Plans.

Deliverable: Report on Energy Plans from other Regions in and out of California
Deliverable Due Date: Completed – October 11, 2007

Subtask 1.3  Identification of necessary chapters for RES

The Contractor shall prepare an Outline of RES. The outline shall contain, but not be limited to, a table of contents, chapter headings, chapter section headings, brief description of section contents.

Deliverable: Outline of RES
Deliverable Due Date: Completed – November 30, 2007

Subtask 1.4  Research and review of municipal energy elements for general plans

The Contractor shall prepare a report on general plan energy elements from no less than ten (10) California local governments and appropriate non-California local governments. The report shall contain, but not be limited to, selected element backgrounds, highlights, analytical foundations, recommendations, and implementation strategies. The report also shall contain a selection of best practices from the reviewed elements that may be appropriate for SANDAG and other regions of the State.

Deliverable: Report on general plan energy elements
Deliverable Due Date: Completed – October 11, 2007

Subtask 1.5  Identification of necessary components for regional energy element

The Contractor shall prepare a “How to Guide” of Model Regional Energy Element with analytical direction for regional Energy Plan adoption. The guide shall include, but not be limited to, descriptions of how regional governance entities should approach Energy Plan development and the appropriate background, research areas, stakeholders, public input process, and other necessary factors to be considered. Additionally, the guide shall contain a model Energy Plan structure with model chapter headings, chapters, sections and findings. The Contractor will work with the CCM to incorporate CCM comments in the draft guide.
For the outreach activity, the Contractor also will disseminate the new draft of the guide to the SATF for review and comment and shall work with the CCM to incorporate comments.

Deliverable: “How to Guide” of Model Regional Energy Element
Deliverable Due Date: November 30, 2008

Subtask 1.6 Present research to BLN

The Contractor shall prepare a report and present it to BLN. The report shall contain, but not be limited to, a summary of findings to date and recommendations for Regional Energy Governance.

Deliverable: Report and presentation for BLN
Deliverable Due Date: June 20, 2007

Subtask 1.7 Development of Draft RES

The Contractor shall develop the Draft RES. The Draft RES shall contain, but not be limited to:

- an executive summary,
- introduction,
- background with analysis of trends, energy use drivers and public policy,
- Goals and Objectives for public policy, electricity supply and infrastructure, electricity demand, natural gas supply, infrastructure and cost, transportation energy supply and demand and climate change, and
- Numerical and time based indicators that will be used to measure the success of the RES.

In addition, for the outreach activity, disseminate the Draft RES for review by the SATF and work with the CCM to incorporate comments.

Deliverable: Draft RES
Deliverable Due Date: May 1, 2009

Subtask 1.8 Public Workshop on Draft RES

The Contractor shall:

- Conduct a public workshop in May 2009 to present the Draft RES and allow public comments.

- Make the Draft RES available to the public a minimum of 10 business days prior to the workshop.

- Work with the CCM to incorporate comments resulting from the workshop into the Final RES.
• The Contractor shall coordinate all aspects of the workshop including without limitation: advertising/publicity, preparation of agenda, enrolling attendees, securing meeting space, preparation of materials/handouts, and facilitation at the workshop. Workshop expenses shall be funded from the other direct costs category in the budget in Exhibit B.

Deliverable: Workshop transcript, report on findings and draft Final RES
Deliverable Due Date: July 1, 2009

Subtask 1.9 Final RES for SANDAG Board approval process

The Contractor shall prepare the completed RES which shall contain, but not be limited to:

• an executive summary,

• introduction,

• background with analysis of trends, energy use drivers and public policy,

• Goals and Objectives for public policy, electricity supply and infrastructure, electricity demand, natural gas supply, infrastructure and cost, transportation energy supply and demand and climate change, and

• Numerical and time based indicators that will be used to measure the success of the RES.

• Strategies and recommendations to carryout the plan

Deliverable: Completed RES
Deliverable Due Date: July 15, 2009

Task 1B. Develop a Regional Climate Action Plan

The Contractor will develop a RCAP and include the RCAP on monthly EWG meeting agendas. As the work effort progresses, items will be brought to other relevant advisory groups at SANDAG for input. All working groups and committee agendas will be are noticed and open to the public. The public will be given the opportunity to provide comment.

Subtask 1.10 Research and review of municipal climate change plans

The Contractor shall create a report on California and outside of California municipal climate change plans. The report shall contain, but not be limited to, an analysis of no less than seven (7) plan backgrounds, highlights, analytical foundations, recommendations, and implementation strategies. The report shall also contain a selection of best practices from the reviewed plans that may be appropriate for SANDAG and other regions climate change plans.

Deliverable: Report on Municipal Climate Change Plans
Deliverable Due Date: Completed – October 11, 2007
Subtask 1.11 Identification of components for Regional Climate Action Plan

For the purposes of this task, “action plan” shall be defined as a 2030 plan that aids an MPO in reaching the greenhouse gas (GHG) reduction targets derived from state goals, such as Assembly Bill 32 (AB 32) and Executive Order S-3-05. As this task is a subsection of the RES, this action plan will focus on transportation/land use measures, electricity, and natural gas supply and demand issues. The action plan will include strategies and recommendations derived from state goals.

The Contractor shall prepare a “How to Guide” of a Regional Climate Action Plan for regional climate action plan adoption. The guide shall include, but not be limited to, descriptions of how regional governance entities should approach climate action plan development and the appropriate background, research areas, stakeholders, public input process, and other necessary factors to be considered. Additionally, the guide shall contain a model climate action plan structure with model chapter headings, chapters, sections and findings. The Contractor will work with the CARB and the SATF to describe the method or methods regions should use to inventory GHG emissions. This description will be based on work being completed by the Contractor in coordination with CARB and the Energy Policy Initiative Center of San Diego.

- Work with the CCM to incorporate CCM comments into the draft.
- For the outreach activity, disseminate the new draft of the guide to the SATF for review and comment and work with the CCM to incorporate comments.

Deliverable: “How to Guide” of a Regional Climate Action Plan
Deliverable Due Date: November 30, 2008

Subtask 1.12 Present research to BLN

The Contractor shall prepare a report and present it to BLN. The report shall contain, but not be limited to, a summary of findings to date and recommendations for Regional Climate Governance.

Deliverable: Report and presentation for BLN
Deliverable Due Date: June 20, 2007

Subtask 1.13 Development of Draft Regional Climate Action Plan

The Contractor shall prepare the Draft Regional Climate Action Plan which shall contain, but not be limited to:

- an executive summary,
- introduction,
- background with analysis of trends, climate change drivers and public policy,
- Goals and Objectives for public policy, mitigation and adaptation measures for electricity supply and use, mobility, land use and community design, and
• Numerical and time based indicators that will be used to measure the success of the Regional Climate Action Plan.

In addition, for the outreach activity, disseminate the Draft Regional Climate Action Plan for review by the SATF and work with the CCM to incorporate comments.

Deliverable: Draft Regional Climate Action Plan
Deliverable Due Date: May 1, 2009

Subtask 1.14  Public workshop on Draft Regional Climate Action Plan

The contractor shall:

• Conduct a public workshop in May 2009 to present the Draft Regional Climate Action Plan and allow public comments.

• Make the Draft Regional Climate Action Plan available to the public a minimum of ten (10) business days prior to the workshop.

• Work with the CCM to incorporate comments resulting from the workshop in to the Final Regional Climate Action Plan.

• Contractor shall coordinate all aspects of the workshop including without limitation: advertising/publicity, preparation of agenda, enrolling attendees, securing meeting space, preparation of materials/handouts, and facilitation at the workshop. Workshop expenses shall be funded from the other direct costs category in the budget in Exhibit B.

Deliverable: Workshop transcript, report on findings and draft Final Regional Climate Action Plan.
Deliverable Due Date: July 1, 2009

Subtask 1.15  Final Regional Climate Action Plan for SANDAG Board approval process

The Contractor shall prepare the Completed Regional Climate Action Plan which shall contain, but not be limited to:

• an executive summary,

• introduction,

• background with analysis of trends, climate change drivers and public policy,

• Goals and Objectives for public policy, mitigation and adaptation measures for electricity supply and use, mobility, land use and community design,

• Numerical and time based indicators that will be used to measure the success of the Regional Climate Action Plan, and

• Strategies and recommendations to reduce GHG.

Deliverable: Completed Regional Climate Action Plan
Task 2. Expand Sustainable Region Pilot Program

SANDAG, in conjunction with the California Center for Sustainable Energy (CCSE) (formerly the San Diego Regional Energy Office) and San Diego Gas and Electric (SDG&E), conducted a pilot effort for the City of Carlsbad consistent with the principles of this “Sustainable Region” blueprint during the months of March 2005 through March 2006. This pilot effort has resulted in $200,000 annual savings for Carlsbad before consideration of savings in new building energy efficiency and renewable energy sources. The partnership between SANDAG and CCSE allowed access to the Carlsbad City Council, as well as public works and planning staff, which provided significant value added over programs which could have been run by the partners separately.

The Sustainable Region Pilot Program (SRPP) targets local governments that have not or have minimally participated in energy efficiency and renewable programs available to them through the Public Goods Charge (PGC) funded energy saving programs. This inaction is due to a lack of knowledge about energy efficiency or the PGC program funds, lack of staff dedicated to energy management or planning, or lack of interest. The SRPP fills this gap by providing technical assistance to assist each city maneuver through the available energy programs from how to begin, how to identify energy saving opportunities, how to implement the measures, and how to finance installations. The SRPP also provides an energy management plan that local elected officials and city managers find useful.

The Contractor will expand the SRPP to two other local governments in the San Diego region. The Contractor will develop energy management plans to advise local governments in the effective implementation of energy efficiency, renewable energy projects, and green building options. The plans will include implementation measures such as funding initiatives to facilitate execution of the loading order at the local level.

For the purposes of Task 2, “action plan” is defined as a plan that provides the information, collaborations, and staff level of effort needed to start a pilot in other regions of the state including how to finance the planning and implementation of the program.

Task 2.1 Report on the SRPP and Draft Outline of the Energy Management Guidebook

The Contractor shall prepare a SRPP report which shall contain, but not be limited to, an analysis of the current SRPP background, highlights, analytical foundation, recommendations, and implementation strategies. The report also shall contain an analysis of the current programs Strengths and Weaknesses and future Opportunities for the program and toolkit development. The draft outline of the Energy Management Guidebook shall contain chapter and section headings.

Deliverable: Report on SRPP and draft outline of the Energy Management Guidebook
Deliverable Due Date: Completed – October 11, 2007

Task 2.2 SRPP Action Plan and Toolkit

The Action Plan shall expand on the draft outline of the Energy Management Guidebook. It also shall contain but not be limited to a clear and succinct description of the SRPP background, research areas, stakeholders, public input process, and other necessary factors to be considered when a region is considering adopting a similar program.
The Toolkit is defined as a series of documents to assist an MPO in carrying out the SRPP with an individual local government. This includes:

- The template for performing an energy assessment of municipal buildings, a questionnaire to explain up front the level of activities undertaken in the energy field and how to form an “energy team” within a member agency for purposes of carrying out this program.

- Meeting agendas that lay out a progression of tasks and accomplishments by addressing the built environment, new construction plans, and policy measures will be provided.

- A finance section that identifies ways to fund the MPO-run SRPP, the energy-saving installations for a local government, and how a local government can obtain further funding to continue implementing its energy plan.

- Links to other available toolkits:
  (for example, see http://www.smartcommunities.ncat.org/toolkit/toolkit.shtml; and http://www.fhwa.dot.gov/Planning/landuse).

For the outreach activity, the Contractor shall disseminate the draft Action Plan and toolkit for review by the SATF and work with the CCM to incorporate comments.

**Deliverable: Final Action Plan and toolkit**

**Deliverable Due Date: October 31, 2008**

As the Contractor continues work with the pilot cities, the Contractor shall review the deliverables for Task 2.2 and make any necessary modifications to capture lessons learned from the pilot cities and any changes to state and regional goals.

**Deliverable: Updated action plan and toolkit**

**Deliverable Due Date: September 30, 2009**

**Task 2.3 SRPP Implementation Plan**

The Contractor shall prepare a SRPP Implementation Plan. The Plan shall contain, but not be limited to, details on how SANDAG will roll out the program through local government contact, developing project teams, assessing need and resources and other roll out details.

**Deliverable: SRPP Implementation Plan**

**Deliverable Due Date: January 31, 2008**

**Task 2.4 Progress to date on SRPP Implementation Plan**

Report on progress towards SRPP Implementation Plan targets. The report shall contain, but not be limited to, results of the program roll out and successes and challenges of the roll out.

**Deliverable: Progress report**

**Deliverable Due Date: June 30, 2008**
Task 2.5 Progress to date on SRPP Implementation Plan

Final report on progress towards SRPP Implementation Plan targets. The report shall contain, but not be limited to, results of the program roll out and successes and challenges of the roll out.

Deliverable: Final progress report
Deliverable Due Date: January 15, 2010

Task 3. Transportation and Energy: Alternative Transportation Fuels and Vehicles Program (ATFVP)

The Contractor will work with the SANDAG member governments to identify opportunities for alternative fuel vehicles both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, and curbside recyclable haulers. The Contractor also will work with its member governments to identify grant and other funding possibilities to aid in the transformation of fleets, and through local city councils, to work with business groups, such as Rotary or Chambers of Commerce, to use the municipal actions as a model for broader parts of local communities.

The Contractor shall also conduct a study and write a report that includes the most appropriate locations for siting alternative fuel infrastructure to best leverage geographic, institutional, financial and environmental resources.

Task 3.1 Establish Alternate Fuels Ad Hoc Working Group

The Contractor shall establish a Working Group. The working group shall be comprised of a diverse set of regional stakeholders that have expertise in alternative fuels and/or alternative vehicles.

Deliverable: Roster of completed working group
Deliverable Due Date: June 29, 2007

Task 3.2 Develop Detailed Scope of Work for the ATFVP Draft Study

The Contractor shall develop a detailed draft scope of work clearly identifying the research, tools, analysis, schedule, and other appropriate details that SANDAG shall undertake to carry out the study.

Deliverable: Detailed Scope of work
Deliverable Due Date: Completed – December 20, 2007

Task 3.3 Draft ATFVP Report

The Contractor shall:

- Prepare the draft report which shall include, but not be limited to, the issues raised in the detailed scope of work, including an analysis of alternative fuels and vehicles, infrastructure issues, regional, state and national fuel supply, model infrastructure siting analysis criteria, financing models and other details deemed appropriate by the Contractor.
• Revise the first submittal of the draft ATFVP Report based on input from the CCM, EWG, and Alternative Fuels Ad Hoc Working Group.

• For the outreach activity, disseminate the second draft of the ATFVP Report for review by the SATF and shall work with the CCM to incorporate comments.

Deliverable: Draft ATFVP Report
Deliverable Due Date: December 31, 2008

Task 3.4 Alternative Fuels Ad Hoc Working Group Comments on Draft ATFVP Report

Deliverable: Alternative Fuels Ad Hoc Working Group Comments
Deliverable Due Date: Completed – June 15, 2008

Task 3.5 Public Workshop on Draft ATFVP Report

The Contractor shall:

• Conduct a public workshop in April 2009 to discuss and take comments on the draft ATFVP Report.

• Make the draft ATFVP available to the public a minimum of 10 business days prior to the workshop.

• Work with the CCM to incorporate comments into the ATFVP Report.

• Coordinate all aspects of the workshop including without limitation: advertising/publicity, preparation of agenda, enrolling attendees, securing meeting space, preparation of materials/handouts, and facilitation at the workshop. Workshop expenses shall be funded from the other direct costs category in the budget in Exhibit B.

Deliverable: Transcript from workshop and draft Final ATFVP Report
Deliverable Due Date: August 15, 2009

Task 3.6 Prepare Final ATFVP Report

The Contractor shall prepare the Final ATFVP Report for SANDAG Board approval.
Deliverable: Final ATFVP Report
Deliverable Due Date: August 31, 2009

Task 3.7 Research the need for an ATFVP Toolkit

The Contractor shall search for existing alternative transportation fuels and vehicles toolkits (for example, see http://www.sustainableoregon.net/toolkit/green_fleet.cfm). If the Contractor, the SATF, and the CCM agree that existing toolkits are adequate, links to the existing toolkits shall be added to the Final ATFVP Report (Task 3.6).

If the Contractor, the SATF, and the CCM agree that a new toolkit is needed, the Contractor shall work with the SATF and the CCM to define the contents of the toolkit. The toolkit content may include but not be limited to, best practices on ordinances, analytical tools,
research needs financing opportunities, codes, standards, and other components deemed appropriate by the Contractor for local governments to use when developing an alternative fuels plan.

Deliverable: Depending on results of the research, either (a) Updated ATFVP Report including toolkit links OR (b) A New Toolkit

Deliverable Due Date: October 31, 2009

**Task 4. Monthly Reports and Final Project Report**

**Task 4.0 Monthly Progress Reports**

The Contractor shall prepare a monthly progress report which summarizes all contract activities conducted by the Contractor including contract expenditures to date.

**Task 4.1 Draft Final Report**

The report shall contain, but not be limited to, status of deliverables and schedule, findings to date, challenges to project completion and other details deemed appropriate by the Contractor.

Deliverable: Draft Final Report

Deliverable Due Date: January 15, 2010

**Task 4.2 Final Report**

Deliverable: Final Report

Deliverable Due Date: February 15, 2010
## SANDAG ENERGY WORKING GROUP MEMBER LIST

<table>
<thead>
<tr>
<th>GEOGRAPHICAL AREA/Organization</th>
<th>JURISDICTION</th>
<th>NAME</th>
<th>MEMBER/ALTERNATE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SANDAG Subregional Representation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South County</td>
<td>City of Coronado</td>
<td>Carrie Downey</td>
<td>Chair</td>
</tr>
<tr>
<td></td>
<td>City of Chula Vista</td>
<td>Steve Castaneda</td>
<td>Alternate</td>
</tr>
<tr>
<td>North County Coastal</td>
<td>Vacant</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vacant</td>
<td>Alternate</td>
<td></td>
</tr>
<tr>
<td>North County Inland</td>
<td>City of San Marcos</td>
<td>Rebecca Jones</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td>Vacant</td>
<td>Alternate</td>
<td></td>
</tr>
<tr>
<td>East County</td>
<td>Vacant</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vacant</td>
<td>Alternate</td>
<td></td>
</tr>
<tr>
<td>City of San Diego</td>
<td>Donna Frye</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vacant</td>
<td>Alternate</td>
<td></td>
</tr>
<tr>
<td>County of San Diego</td>
<td>Vacant</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Peter Livingston (staff)</td>
<td>Alternate</td>
<td></td>
</tr>
<tr>
<td><strong>Regional Transit Agencies</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Transit Authorities</td>
<td>Metropolitan Transit System (MTS)</td>
<td>Sharon Cooney</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td>North County Transit District (NCTD)</td>
<td>Vacant</td>
<td>Alternate</td>
</tr>
<tr>
<td><strong>Regional Investor Owned Utility (IOU)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>San Diego Gas &amp; Electric</td>
<td></td>
<td>David Geier</td>
<td>Member</td>
</tr>
<tr>
<td>SDG&amp;E</td>
<td></td>
<td>JC Thomas</td>
<td>Alternate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Frank Urtaesen</td>
<td>Alternate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ahmad Solomon</td>
<td>Alternate</td>
</tr>
<tr>
<td><strong>Regional Business Groups</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>San Diego Regional Chamber of Commerce</td>
<td>Shell Trading</td>
<td>Mike Evans</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carmen Sandoval (staff)</td>
<td>Alternate</td>
</tr>
<tr>
<td>Regional Economic Development Councils</td>
<td>North County EDC.</td>
<td>David Lloyd</td>
<td>Member</td>
</tr>
<tr>
<td></td>
<td>South County EDC</td>
<td>Dan Biggs</td>
<td>Alternate</td>
</tr>
<tr>
<td>Regional Energy Experts (Non-Profits)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>California Center for Sustainable Energy (CCSE)</td>
<td>Andrew McAllister</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Irene M. Stillings</td>
<td>Alternate</td>
<td></td>
</tr>
<tr>
<td>Energy Policy Initiative Center (EPIC)</td>
<td>Scott Anders</td>
<td>Member</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nilmini Silva-Send</td>
<td>Alternate</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regional Public Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port of San Diego</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regional Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Diego Universities</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>San Diego Schools (K-12)</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regional Alternative Transportation Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Clean Transportation Representative</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Regional Environmental Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sierra Club</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Environmental Health Coalition</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Last updated: 09/2008
WORKING GROUP CHARTER
Energy Working Group

PURPOSE
The Energy Working Group (EWG) provides input to the Regional Planning Committee (RPC) and the SANDAG Board on issues related to the coordination and implementation of the Regional Energy Strategy (RES), adopted by the SANDAG Board of Directors in July 2003. The EWG was formed based on the recommendation of the Energy Task Force, which had been established to advise the Board on the best way to implement the RES. The Energy Task Force recommended SANDAG as the most appropriate agency to implement the RES and recommended that an Energy Working Group, comprised of a diverse group of stakeholders, be formed to provide input and comments to the Regional Planning Committee and Board of Directors on energy issues.

LINE OF REPORTING
The EWG reports to the Regional Planning Committee (RPC), which reports directly to the SANDAG Board of Directors. In addition, the SANDAG Board recognized that the EWG may request that a policy advisory committee make comments on proceedings at the California Public Utilities Commission and California Energy Commission. Due to the time limitations on many of these proceedings, the Board approved an alternate reporting structure which enables the EWG to obtain an approval from the Executive Committee to take action on issues with deadline constraints. The RPC approves changes to the EWG Charter. EWG members serve at the discretion of the RPC and EWG service is voluntary.

RESPONSIBILITIES
The EWG provides input and comments to the RPC related to the development and implementation of the SANDAG Regional Energy Strategy and Regional Energy Planning Program, as prioritized by the Board of Directors in the Overall Work Program (OWP). The EWG may be asked to provide input on a variety of energy issues to the RPC and Board of Directors. The EWG will ensure that regional energy planning activities align with the objectives of the Regional Transportation Plan (RTP), the Regional Comprehensive Plan (RCP), and the Regional Economic Prosperity Strategy (REPS). The EWG will bring stakeholders together to develop ideas on state and federal energy matters and bring them forward through the RPC and the Board. The EWG also will work with various stakeholders at the local level to discuss the best ways to provide energy-saving programs and services as they relate to the implementation of the RES, and then provide feedback to the RPC.

MEMBERSHIP
The EWG will have a maximum of 20 voting members. Membership will include a diverse group of regional stakeholders. Elected officials serving on the EWG are appointed by the six subregions they represent (North County Coastal, North County Inland, East County, South Bay, the City of San Diego, and the County of San Diego). Members of the Working Group and their alternates are selected by the bodies they represent.

In the event that an elected official cannot serve, a subregion can appoint a non-elected government employee to serve in place of an elected in the primary or alternate member position.
MEETING TIME AND LOCATION
The Energy Working Group generally meets from 11:30 a.m. to 1:00 p.m. on the fourth Thursday of the month. Meetings are normally held in the 7th floor conference room at SANDAG offices.

SELECTION OF THE CHAIR
The EWG chair is selected by the Regional Planning Committee and should be rotated on a periodic basis unless otherwise determined by the Chair of the Board.

DURATION OF EXISTENCE
EWG status is that of a standing working group. An evaluation of the group’s work will be conducted annually as part of the SANDAG Executive Committee’s annual committee/working group review process.