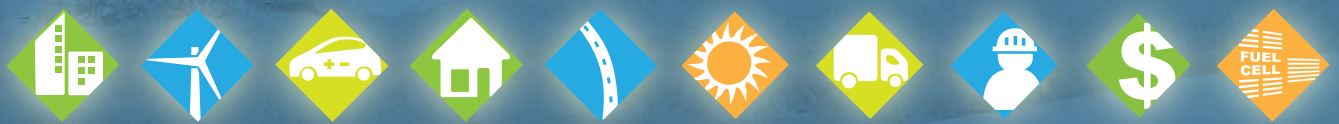


City of Santee Energy Roadmap



Prepared through the SANDAG
Energy Roadmap Program

September 2011

This Program is a collaboration between SANDAG and San Diego Gas & Electric®.



Energy Roadmap for the City of Santee

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Introduction

This energy management plan, or “Energy Roadmap,” provides a framework for the City of Santee to save energy in government operations and in the community, resulting in cost savings and benefits to the environment. These wide-ranging, cost-effective opportunities to save electricity, natural gas, and transportation fuel include:

This Energy Roadmap helps Santee achieve its Sustainability Project goals.

- No-cost expert technical assistance, such as free energy audits of government buildings,
- Help identifying and applying for energy-efficiency rebates and innovative programs like zero-percent on-bill financing,
- Energy-saving resources for cutting edge topics like general plan updates, electric cars, alternative fuels, and transportation demand management strategies to save energy and fight climate change, and
- The latest information on critical subjects like financing energy-efficiency projects, emerging technology demonstrations, and residential retrofit programs.

California’s Vision for Local Governments

By 2020, California’s local governments will be leaders in using energy efficiency to reduce energy use and global warming emissions both in their own facilities and throughout their communities.

California Long-Term Energy Efficiency Strategic Plan

While the Energy Roadmap could be used by cities without past energy project and planning experience, it is important to recognize upfront that Santee launched *The Sustainability Project* in December 2008, for which the Energy Roadmap can be a resource. *The Sustainability Project* was established by the city to promote energy

The Roadmap charts a path to saving energy in city operations and in the community.

efficiency, conserve energy and water, reduce energy demand, and use sustainable workplace practices. Santee identified 22 goals to be met through the project, all of which are identified in **Appendix A**.



Developing this Energy Roadmap achieves the first goal identified in Santee's Sustainability Project which was to partner with CleanTECH San Diego, SDG&E, and SANDAG on an Energy Roadmap for the city. Santee has undertaken many measures to meet its *Sustainability Project* goals.

In 2009, the city applied for and received the opportunity to issue \$3.1 million in federal government Clean Renewable Energy Bonds (CREBs) to finance seven solar photovoltaic (PV) rooftop and parking lot projects in the city. To date, Santee has opted not to issue these bonds due to fiscal constraints placed on the city as a result of the economic downturn.

The city participates in the region's planning for plug-in electric vehicle (EV) chargers as part of the EV Project's Electric Vehicle Advisory Committee. It also participates in the Regional Retrofit Advisory Committee that supports the Energy Upgrade California Program and is managed by the California Center for Sustainable Energy.

The City of Santee also has conducted a greenhouse gas (GHG) inventory of city-operated and community-wide emissions, successfully completing the arduous step of identifying and quantifying local sources of greenhouse gases. The city accomplished this through its participation in the *San Diego Regional Climate Protection Initiative*, spearheaded by ICLEI-Local Governments for Sustainability USA (ICLEI). Santee's Energy Roadmap can help the city identify measures to include in a climate action plan, that it will begin developing this next year.

Santee's Energy Efficient and Visually Improved Street Lighting

Before



After



To date, the city has replaced almost 1,000 city-owned street lights with more energy-efficient lighting, saving \$75,000 and reducing energy use by more than 600,000 kilowatt hours every year. Santee obtained \$480,000 in American Recovery and Reinvestment Act (ARRA) funds through the Energy Efficiency and Conservation Block Grant (EECBG) program. To cover the upfront cost of street light replacements, the city

used part of its EECBG funds and was able to take advantage of the SDG&E On Bill Financing Program.

Phase 2 of Santee’s Street Light Retrofit Program is underway. The city anticipates that it will be able to upgrade all 1,986 of its city-owned street lights. By building on its existing efforts and taking advantage of some or all of the opportunities identified herein, Santee can demonstrate leadership in energy efficiency and work toward greater sustainability in city government and throughout its community – saving money for taxpayers, households, and businesses, keeping the air clean, protecting the global climate, supporting green jobs, and improving quality of life for everyone in Santee.

Section I. Saving Energy in City Government Operations

City government can be a significant user of energy in its own buildings, facilities, and equipment. City employees also play a role, through their commute choices, equipment usage, and use of government vehicles. These and other energy-using activities required to operate city government provide the city with an opportunity to lead by example. The city can improve energy efficiency, and in the process, spend fewer taxpayer dollars on utilities and gasoline, contribute to cleaner air, and reduce climate change emissions. The city also can develop staff knowledge of energy efficiency and use its operations to showcase emerging energy-efficient technologies.

The section on saving energy in government operations identifies five distinct opportunities for Santee to lead by example with its buildings and facilities, vehicles, and its energy usage practices:

- 1. Save Energy in City Buildings and Facilities**
- 2. Demonstrate Emerging Energy Technologies**
- 3. Green the City Vehicle Fleet**
- 4. Develop Employee Knowledge of Energy Efficiency**
- 5. Implement a Commuter Benefit Program**

Section II. Saving Energy in the Community

Looking beyond its own operations, city government can play an important role in influencing the energy attitudes and actions of its residents and businesses. Opportunities for influence vary widely, from public education to adopting policies and implementing programs to save energy.

Energy use can be a major expense for households and businesses, and it is a predominant source of air pollution and climate change emissions in most communities. Therefore, saving energy benefits the environment, puts money in the pockets of households and businesses alike, and also supports growing economic opportunities, including well-paying, green jobs.

This section of the Energy Roadmap identifies the following opportunities for Santee to lead its community with innovative programs for energy efficiency, sustainability, and climate change:

6. Leverage City Authority over Planning and Development

- a. Integrate energy-saving measures into planning and development review
- b. Include transportation demand management in development review
- c. Enable building energy retrofit projects

7. Market Energy Programs to Local Businesses and Residents

8. Support Green Jobs and Workforce Training

Potential Uses of the Energy Roadmap

Examples of activities this Energy Roadmap could assist the city with include:

- Reducing government spending on energy use like utility bills and gasoline
- Developing measures to reduce greenhouse gas (GHG) emissions from government operations and community activities, as part of a local climate action plan
- Integrating sustainability, energy efficiency, or GHG reduction measures into a general plan, community plan update, or zoning ordinance amendment
- Using government operations to demonstrate the feasibility of energy efficient and sustainable practices to residents and businesses
- Managing the city vehicle fleet including new vehicle purchases
- Promoting energy-efficiency programs through city communications such as newsletters, e-mail, and Web site
- Training of employees whose work deals with energy issues
- Offering commuter incentives as part of the city's employee benefits package
- Staying on top of the latest developments, programs, and trends in energy efficiency
- Applying and qualifying for future funding opportunities related to energy efficiency

Santee's Web site can be a portal for local residents and businesses to access energy-saving programs and rebates

About the Energy Roadmap Program

The Energy Roadmap Program is a collaboration between the San Diego Association of Governments (SANDAG) and San Diego Gas & Electric® (SDG&E) that offers local jurisdictions assistance in making their buildings and processes energy efficient, implementing state energy codes through access to training and workshops, and being a conduit to their

Handouts on green jobs and training opportunities can be located at the city hall campus and library.

constituents on programs that help reduce their energy bills, as well as the environmental impact on the community as a whole. The program provides free energy assessments of government buildings and online tools to monitor electricity, natural gas, and transportation fuel use. It provides continued access to experts that can assist jurisdictions in taking the next steps to implement building improvements, petroleum reduction measures, and community outreach.

The table below provides a timeline of the city's Energy Roadmap efforts.

Santee's Energy Roadmap Timeline					
Pre-2010	Summer 2010	Fall 2010	Winter 2011	Spring-Summer 2011	Fall 2011 until Dec. 2012
SDG&E begins Roadmap	Energy Roadmap Program launch	Report cards for city buildings	Fleet and fuels review	Santee's Energy Roadmap completed	City eligible for continued Roadmap assistance
State delays energy programs	Restart Roadmap: city gives input and direction	Further building studies begin	Energy audit and rate review	Presentation to City Council	
		SANDAG drafts Roadmap chapters for city staff review 			

Each participating jurisdiction receives a customized Energy Roadmap that offers a comprehensive framework for saving energy at city government facilities and in the community. Each Energy Roadmap is consistent with the SANDAG Regional Energy Strategy (2009), which serves as the San Diego region's energy policy blueprint, and the Climate Action Strategy (2010), SANDAG's first ever guide on the issue of climate change. Both strategies are available on the SANDAG Web site at www.sandag.org/energy.

The Energy Roadmap Program was developed based on existing, successful SDG&E local government partnerships with the cities of Chula Vista and San Diego and the County of San Diego; and through pilot Sustainable Region projects undertaken through SANDAG and the California Center for Sustainable Energy with the cities of Carlsbad, Poway, and Solana Beach. The Energy Roadmap Program is funded primarily by California utility customers under the auspices of the California Public Utilities Commission. Transportation components are funded by SANDAG.

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Save Energy in City Buildings and Facilities

Energy is a major operating cost for local governments. By evaluating energy usage in city government buildings and facilities (“sites”) and identifying energy-saving opportunities, Santee can reduce its energy-related operating costs and use the savings for other government services. This chapter highlights:

- Free site assessments provided to the city,
- Energy-saving opportunities identified at each one, and
- Costs and payback to the city to undertake the energy-saving projects.

Santee could save more than \$78,000 annually from energy-efficiency upgrades and rate changes identified at city sites.

Energy Assessments

In 2010, two types of energy assessment services were provided at no cost to the city: 1) Preliminary energy assessments, called “Energy Report Cards,” of sites determined by municipal staff, and 2) More in-depth energy audits, called “Phase 2 Audits” for a subset of government buildings based on their Report Cards and direction from city staff.

Energy Report Cards were prepared for fifteen municipal sites (listed below) in late 2010. Each Energy Report Card is included in **Appendix B**. These preliminary assessments established each site’s baseline energy use and benchmarked it against similar building types in the country.

- | | |
|---------------------------|--------------------------------------|
| ▪ City Hall Campus | ▪ Big Rock Park Activity Building |
| ▪ Operations Center | ▪ Santee Mini-Park Activity Building |
| ▪ Fire Station 4 | ▪ Town Center Park West |
| ▪ Fire Station 5 | ▪ Shadow Hill Park |
| ▪ Sheriff Station | ▪ Woodglen Vista Park |
| ▪ Teen Center | ▪ West Hills Park |
| ▪ Community Safety Center | ▪ Mast Park |
| ▪ YMCA (Aquatic Center) | |

Benchmarking is a useful tool to judge a site’s energy performance compared to the national or state averages, and it is a new requirement to participate in SDG&E’s rebate and incentive programs. Two online tools were employed to help determine how

“good” or “bad” a site was performing. SDG&E’s *Energy Waves* program provided historical energy usage and will enable the city to continue monitoring energy consumption/site performance online. The U.S. Environmental Protection Agency’s (EPA) *Portfolio Manager* program identified how each site compared against national averages for similar facilities, and provided climate change information in carbon dioxide equivalent (CO²E).

A priority list was prepared for city staff to review and determine which sites should undergo further analysis through Phase 2 Energy Audits. Site selection was based on the Energy Report Cards, with the purpose to find savings opportunities, and to answer why a particular building showed high energy usage, high utility bills, or performed worse than similar buildings. Eight sites were identified in a priority site list, which is included as **Appendix C**.

- | | |
|--------------------------------------|-------------------------|
| ▪ City Hall Campus | ▪ YMCA (Aquatic Center) |
| ▪ Operations Center | ▪ Town Center Park West |
| ▪ Big Rock Park Activity Building | ▪ West Hills Park |
| ▪ Santee Mini-Park Activity Building | ▪ Fire Station 4 |

The Phase 2 Energy Audits were to find energy-efficiency improvements in indoor/outdoor lighting; heating, ventilation and air conditioning (HVAC); building controls; and overall building operations and performance. These engineering assessments included utility rate review, recommended retrofit projects, and rebate programs and costs. The Phase 2 Energy Audit Findings are summarized here and are included as **Appendices D and E**.

EFM Solutions, an engineering firm and small business in San Diego, performed all site assessments on behalf of SANDAG and provided the city with project results in the form of the Energy Report Cards, Phase 2 Energy Audit Findings, and a master spreadsheet of energy conservation measures identified.

Energy Audit Findings

The city has the potential to save over \$32,000 every year on its utility bills by implementing the energy conservation measures listed in the *Potential Savings by Energy Conservation Measure* table on page 10. In addition, Santee could save almost \$46,000 each year on its utility bills by switching to a special outdoor lighting rate at two of its parks, as described in the following section.

The upfront costs for the purchase and installation of energy-saving equipment could be financed on the city's SDG&E bills through a zero-percent financing program available to the city. The program is cash-flow neutral, so monthly utility bills would not rise while the city pays off the energy-efficiency loan, if it chooses to implement the efficiency measures. Once that loan is paid off (using zero-percent on-bill financing), the city's utility bills would reflect annual bill savings shown in the *Energy Conservation Measure Economics* table on page 11.

Santee could save almost \$46,000 each year on its utility bills by switching rates at Town Center Park West and West Hills Park.

The simple payback is the estimated time it would take to pay-off the net costs through energy savings. The city would work with SDG&E to determine exact financing and payback amounts. EFM Solutions is available to assist the city with project specifications, application materials, and other elements necessary for project implementation.

Lowering City Utility Bills at Community Parks

An analysis was conducted to determine potential savings the City of Santee could realize if outdoor area lighting was switched from existing utility rates to one of the optional outdoor lighting rate schedules offered by SDG&E. Analysis of the Town Center Community Park and West Hills Park identified a potential annual bill savings of up to \$45,890 by switching to an outdoor lighting time of use (OL-TOU) utility rate. The city is already moving forward with SDG&E to switch utility rates to generate immediate bill savings.

Implementation Strategy for Energy and Cost Savings

1. If not completed, finalize outdoor lighting rate changes to lower annual utility bills.
2. Apply for all applicable SDG&E rebates and incentives identified in the energy assessments.
3. If available, use a portion of Santee's Energy Efficiency and Conservation Block Grant funds to buy-down equipment and installation costs.
4. Seek approval from SDG&E to use its On-Bill Financing Program (zero-percent interest loans) to cover upfront costs for energy upgrades.
5. Undertake the energy-saving projects that qualify for on-bill financing and/or have an immediate payback.
6. Monitor site performance to ensure energy and cost savings are achieved.

The Energy Roadmap team can assist Santee with these implementation steps over the duration of the Roadmap Program (until December 2012).

Potential Savings by Energy Conservation Measure

Location	Measure	Annual Savings for City			
		Electricity (kWh)	Demand (kW)	Bill Savings	GHG in metric tons (CO ₂ E)
City Hall	Replace HVAC units ⁴	33,734	-	\$5,065	11.1
	Replace incandescent PAR lamps with CFLs	2,554	7.5	\$383	0.8
	Replace Remaining T12s with T8s	8,445	8.0	\$2,292	2.8
	Replace server room AC unit (bldg. 5)	2,168	-	\$206	0.7
	Window heat load	Dependent on occupant behavior to quantify			
	Replace 250 watt HPS cobras to 120w Induction	13,639	3.1	\$2,046	4.5
Big Rock Park and Mini Park Activity Bldgs.	Replace T12s and delamp over lit areas	3,304	2.4	\$40	1.0
Fire Station 4	Replace T12s and delamp over lit areas	663	0.5	\$63	0.2
Operations Center	Install photocells and lighting controls	3,698	-	\$351	1.2
Shadow Hill Park	Replace LPS lamps with T5HO	1,130	0.3	\$170	0.4
Teen Center	Replace incandescent PAR lamps with LED	702	0.7	\$140	0.2
	Replace T12s and delamp over lit areas	35	0.1	\$15	0.0
Town Center Park West	Replace 250 watt HPS Cobras to 120 watt Induction	15,155	3.5	\$2,273	5.0
	Replace 250 watt MH with T5HO	3,811	0.9	\$572	1.3
West Hills Park	Replace 400 watt HPS with 120 watt Induction	15,023	3.4	\$2,254	5.0
YMCA	Turn pool pumps off at night	33,472	-	\$3,180	11.0
	Replace 250 watt HPS cobras to 120 W induction	23,490	5.4	\$3,523	7.7
	Vending Misers	1,354	-	\$129	0.4
	Replace 1000 watt MH pool deck fixtures/lights	66,079	34	\$9,912	21.8
Totals		228,456	70	\$32,614	75.4

Notes.

1. Energy assessments included HVAC systems, indoor and outdoor lighting, and building controls.
2. No natural gas savings were found.
3. GHG = greenhouse gases and CO₂E = carbon dioxide equivalent.
4. HVAC upgrades are recommended and calculated for buildings 1, 3, 4, 5, and 6. Buildings 2, 7, and 8 are included in the Phase 2 Energy Audit Findings in **Appendix D**.
5. Detailed descriptions of existing and recommended outdoor lighting is in **Appendix E**.

Energy Conservation Measure Economics

Location	Measure	Gross Project Implementation Cost	Total SDG&E Incentives	Net Project Cost	Simple Payback (years)
City Hall	Replace HVAC units ⁴	\$372,604	\$12,625	\$359,979	71.1
	Replace incandescent PAR lamps with CFLs	\$1,096	None	\$1,096	2.9
	Replace Remaining T12s with T8s	\$6,116	\$2,342	\$3,774	1.6
	Replace server room AC unit (bldg. 5)	\$2,500	\$250	\$2,250	10.9
	Window heat load	Dependent on occupant behavior to quantify			
	Replace 250 watt HPS cobras to 120w Induction	\$16,200	\$900	\$15,300	7.5
Big Rock Park Activity Bldg.	Replace T12s and delamp over lit areas	\$223	\$159	\$65	3.3
Mini Park Activity Bldg.	Replace T12s and delamp over lit areas	\$223	\$159	\$65	3.3
Fire Station 4	Delamp over lit areas	-	None	-	Immediate
Operations Center	Install photocells and lighting controls	\$1,500	\$55	\$1,445	4.1
Shadow Hill	Replace LPS lamps with T5HO	\$700	\$82	\$618	3.6
Teen Center	Replace incandescent PAR lamps with LED	\$650	\$35	\$615	4.4
	Delamp over lit areas	-	None	-	Immediate
Town Center Park West	Replace 250 watt HPS Cobras to 120 watt Induction	\$18,000	\$1,000	\$17,000	7.5
	Replace 250 watt MH with T5HO	\$1,750	\$278	\$1,472	2.6
West Hills Park	Replace 400 watt HPS with 120 watt Induction	\$9,000	\$1,000	\$8,000	3.5
YMCA	Turn pool pumps off at night	\$100	None	\$100	Immediate
	Replace 250 watt HPS cobras to 120 W induction	\$27,900	\$1,550	\$26,350	7.5
	Vending Misers	\$339	\$200	\$139	1.1
	Replace 1000 watt MH pool deck fixtures/lights	\$28,800	\$6,746	\$22,054	2.2
Totals		\$487,701	\$27,380	\$460,321	~

Notes.

1. Gross and net installation and equipment costs are estimated and do not replace product specifications and contractor bids.
2. Each site's energy conservation measures, when combined together for a 10-year or less payback period and \$5,000 minimum loan, can qualify for zero-percent financing through SDG&E program.
3. HVAC upgrades are for buildings 1, 3, 4, 5, and 6.

Finance Options for Energy Projects

Many SDG&E rebates and incentives exist to cover all or part of the costs for various energy-efficiency improvements. Additionally, Energy Efficiency and Conservation Block Grants (EECBG) are used by many jurisdictions to pay for remaining upfront costs. If EECBG and other grant funds are not available and funding is still needed, Santee could have upfront project costs addressed through the SDG&E On-Bill Financing Program. EFM Solutions has been contracted by SANDAG to assist local governments in identifying the processes and steps to receive rebates, participate in on-bill financing, and/or apply for California Energy Commission low-interest loans. Your Energy Roadmap coordinator can facilitate this.

San Diego Gas & Electric® Rebates and Incentives

As part of the energy audit findings, EFM Solutions identified the appropriate SDG&E rebates and incentives¹ for each municipal site. Generally, programs that apply to commercial businesses also apply to public agencies. To review all of SDG&E's rebate and incentive programs, see chapter 7 of this Energy Roadmap or visit www.sdge.com/business/rebatesincentives/.

Zero-Percent Interest On-Bill Financing from SDG&E

Through its On-Bill Financing Program,² SDG&E provides interest-free, unsecured financing to qualified commercial and taxpayer-funded customers for the installation of energy-efficient upgrades. Financed equipment must qualify for a rebate or incentive from SDG&E's rebate/incentive program(s). EFM Solutions and the city's SDG&E account representative, Kraig Akers, have met with city staff and discussed on-bill financing. The program for public agencies includes:

- Zero-percent financing on qualifying measures for up to ten years
- Offsets to energy-efficient upgrade costs after rebates and incentives through SDG&E
- Loan amounts that range from a minimum of \$5,000 up to \$250,000 per meter
- Loan installments that are added to monthly SDG&E bills

¹ SDG&E programs are funded by California utility customers and administered by SDG&E under the auspices of the California Public Utilities Commission. Rebates and incentives are provided on a first-come, first-served basis until program funds are no longer available.

² The On-Bill Financing (OBF) program is funded by California utility customers and administered by SDG&E under the auspices of the California Public Utilities Commission. The OBF program may be modified or terminated without prior notice and is provided to qualified customers on a first-come, first-served basis until program funds are no longer available. Eligibility requirements apply.

- For more information, contact Kraig Akers at KWakers@semprautilities.com or visit www.sdge.com/obf.

Low-Interest Loans from California Energy Commission

The Energy-Efficiency Financing Program provides financing for local governments, schools, and hospitals through low-interest loans for feasibility studies and installation of energy-saving measures. As of October 2010, terms included an interest rate of three-percent fixed, a maximum loan of \$3 million per application, and a maximum loan term of 15 years. Again, EFM Solutions can assist Santee with applying for this loan, if needed. For more program information, contact the California Energy Commission's Special Projects Office, (916) 654-4104, e-mail: pubprog@energy.state.ca.us, or www.energy.ca.gov/efficiency/financing.

Post-assessment assistance in identifying energy project financing and implementation is a service provided to Santee through the Energy Roadmap Program. Contact your Energy Roadmap coordinator for further assistance.

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Demonstrate Emerging Energy Technologies

In addition to energy assessments and improving efficiency at city government facilities, Santee can showcase emerging energy-efficient technologies at suitable locations through SDG&E's Emerging Technologies Program. The city also can encourage interested local businesses and residents to demonstrate emerging energy technologies through this program.

If Santee is interested in hosting a demonstration or knows of sites in the community that may be interested, your Energy Roadmap coordinator can arrange a meeting with the SDG&E emerging technologies staff. SDG&E will provide all of the relevant information, including how to participate, eligible technologies, and any associated costs.

California's Vision on Research & Technology

Technology advancement related to energy use and demand will match—or even eclipse—the consumer electronics industry in innovation, time to market, and consumer acceptance.

California Long-Term Energy Efficiency Strategic Plan

The goal of the Emerging Technologies Program is to accelerate the adoption of advanced technologies that increase grid stability, reduce overall energy use, and reduce demand for energy at peak times. The technology demonstrations are short-term projects that provide SDG&E with necessary real-world applications of promising energy-saving technologies. These new technologies have not achieved market penetration, but their potential benefits make them worthwhile to test. Demonstrations are critical because they enable utilities like SDG&E to evaluate and determine which emerging technologies are viable and worth supporting for wider deployment.

The following table lists a variety of projects in lighting, air-conditioning, communications, and others that are being demonstrated through 2012. For more information, contact A.Y. Ahmed, SDG&E's emerging technologies program manager directly at AAhmed1@semprautilities.com, or your Energy Roadmap coordinator.

SDG&E Emerging Technologies Program: Technologies Eligible for Demonstration

City Government or Commercial Sites

Lighting	Addressable Electronic Ballast for HID Fixtures: Demonstration on three building types: distribution warehouse, gymnasium, and big-box retail. Advanced electronic ballast with high bay HID (high intensity discharge) fixture that permits day lighting, dimming, and demand response measures.
Air Conditioning	Aquachill Air Conditioner: For small commercial buildings. Advanced split system AC that uses water cooled condenser, resulting in demand and energy savings (three, four, and five ton units; EER 14.0-14.5).
Refrigeration	VRF Conveni-Pack System: For supermarkets and mini-markets. Advanced refrigeration and space cooling technology in one combined unit that can be used for refrigeration cases, freezers, and space conditioning (three to five ton units).
Communications and Controls	Commercial Energy Control Systems: For medium and large commercial buildings that utilize refrigeration (refrigerant flow technology) and smart meter technology. Commercial Energy Management System: For a company that utilizes a wireless network and controllers to manage and optimize a building's energy systems. To be demonstrated at medium-size commercial building with multiple packaged roof-top units and large commercial building with central plant equipment.

Residential Sites

Air Conditioning	Aquachill Air Conditioner: For homes and multi-family apartment buildings. Advanced split system AC that uses water-cooled condenser, resulting in demand and energy savings (three, four, and five ton units; EER 14.0-14.5). VRF Mini-Split Air Conditioners: For residential single and multi-family homes. Advanced room AC that uses zoned cooling coils with air handlers and central compressor. Cooling capacity is varied and to be demonstrated in residences with one to four zones (two to five ton units).
Communications and Controls	Single Vendor Residential HAN Pilot: For single-family homes. Home Area Network (HAN) technology with in-home display, programmable communicating thermostat, appliance controllers, battery storage, and back-office operation; resulting in demand and energy savings. To be demonstrated at 28 homes. Residential Energy Management Technologies Evaluation: For single-family homes. Technologies can include home area network, in-home display, programmable communicating thermostat and appliance controllers; resulting in demand and energy savings. Based on evaluation of energy management systems from 150 companies, SDG&E will work with up to ten companies to test one to five systems each. Multi-Vendor HAN Pilot: HAN technologies that include IHD, PCT, load controllers from different vendors to be operated in a coordinated manner. Planned evaluation: test multi-vendor systems in 12 residential homes. Residential Zonal Controls: Convert central forced air HVAC systems into smart multi-zone HVAC systems. Senses conditions in each room, analyzes real-time and historical room-occupancy, and actuates vents in each room to regulate room temperature. Planned evaluation: test systems in 12 residential homes with single zone HVAC systems.
Zero Energy Home Showcase	Net Zero Energy Home Demonstration/Showcase: SDG&E plans to renovate up to five existing single-family homes to evaluate and demonstrate a variety of energy-saving technologies. Renovations to include building envelope improvements, high efficiency space conditioning, water heating and appliances, appliance integration with smart meters, solar PV/thermal systems, and home energy management systems.

Green the City Vehicle Fleet

Goal 21 of the *Sustainability Project* is to review clean transportation opportunities. In doing so, Santee has begun purchasing hybrid and alternative-fuel capable (“dual-fuel”) vehicles. Excluding trailers, specialized equipment, and emergency vehicles, there are about 20 vehicles comprised of light duty pick-up trucks, sport utility vehicles, sedans and cargo vans. The city can achieve transportation-related energy savings through actions that promote fuel conservation, efficiency, and an increased use of clean fuels in its vehicle fleet.

Special attention is given to the Electric Vehicle Project at the end of this section. It is the largest deployment of plug-in electric vehicles (PEV) and PEV chargers in history and approximately \$40 million worth of equipment and services have been dedicated to the San Diego region. Santee is part of the EV Project’s Electric Vehicle Advisory Committee and contributor to the short- and long-term planning for PEV charging infrastructure for the San Diego region. As of this report writing, there are still opportunities to both become an EV Project participant, and/or to host a publicly accessible PEV charging site(s).

Fuel Conservation and Efficiency

Fleet Planning

There are many conservation and efficiency measures that a city, or fleet manager, can use to reduce petroleum use in the municipal fleet. To increase overall fleet fuel efficiency, the Federal Energy Management Program (FEMP) recommends focusing on increasing the fuel efficiency of the least efficient vehicles first. Also, the U.S. Department of Energy’s Petroleum Reduction Planning Tool (<https://www.afdc.energy.gov/afdc/prep/>), at the Alternative Fuels and Advanced Vehicles Data Center, can help fleet managers evaluate and calculate petroleum reductions through one or a combination of methods bulleted below.

- Alternative fuels
- Hybrid electric vehicles
- Biodiesel blends
- Fuel economy
- Vehicle miles traveled reduction
- Truck stop electrification
- Idling time reduction
- Onboard idle reduction

The methods fall under efficiency (e.g., fuel economy, idling reductions), conservation (e.g., vehicle miles traveled (VMT) reductions), and alternative fuels

(e.g., vehicles that run on electricity, compressed natural gas). The fleet manager can set a petroleum reduction goal (e.g., 10 percent savings), and the free online tool will identify how much savings are achieved based on the fleet information entered and measures selected. Your Energy Roadmap coordinator can assist the city with the online tool.

Additionally, FEMP has dedicated resources to assist federal agency fleet managers in developing and implementing petroleum reduction strategies. Through Executive Order 13514 and other mandates, federal agencies are required to reduce petroleum usage and increase alternative fuel use in their fleets. Local jurisdictions are not impacted by the federal mandates, but may find FEMP's resources helpful if developing a petroleum reduction plan. FEMP provides guidance and a handbook on fleet management, which are available online at www1.eere.energy.gov/femp/regulations/guidance.html#fm.

Driving Suggestions for City Employees

Trip planning, efficient driving habits and routine maintenance can reduce petroleum use and spending on transportation. The fleet manager can review the scheduling and routing of applicable vehicles to determine if improvements to fuel economy can be made. Before grabbing for the keys, employees can consider the following:

- Other communication options that could serve the trip's purpose (e.g., conference call, e-mail or Web cast),
- Non-vehicle options available (e.g., walking, bicycling and transit),
- Shared vehicle options like carpooling with other staff, and
- Using the most efficient (best miles per gallon or MPG) fleet vehicle that will serve the trip purpose.

The official U.S. government source for fuel economy information is www.fueleconomy.gov. The site provides data on new and used cars and trucks, and provides the following fuel efficiency tips that the city can offer its employees.

- Drive sensibly. Aggressive driving (speeding, rapid acceleration, and braking) wastes gas. It can lower gas mileage by 33 percent at highway speeds and by five percent around town.
- Observe the speed limit. While each vehicle reaches its optimal fuel economy at a different speed, gas mileage usually decreases rapidly at speeds above 60 miles per hour (mph). As a rule of thumb, each five-mph increase over 60 mph can cost the city about \$0.21 per gallon of gas.
- Remove excess weight. Avoid keeping unnecessary and heavy items in vehicles. An extra 100 pounds can reduce MPG by up to two percent. The reduction is based on the percentage of extra weight relative to the vehicle's weight and affects smaller vehicles more than larger ones.

- Avoid excessive idling. Idling gets zero miles per gallon. Cars with larger engines typically waste more gas at idle than do cars with smaller engines.
- Use cruise control. Using cruise control on the highway helps to maintain a constant speed and, in most cases, save gas.
- Use overdrive gears. Engine speed goes down when in overdrive gears. This saves gas and reduces engine wear.
- Keep tires properly inflated. Check tires monthly for proper inflation. Under-inflated tires can lower gas mileage by 0.4 percent for every one-psi drop in pressure of all four tires.

Alternative Fuels for Fleet Applications

Alternative fuel and vehicle selection is dependent on several factors including:

- Cost of vehicles,
- Availability of fuel supply,
- Grant and tax credits available,
- Whether considering purchase of new vehicles,
- Whether considering retrofits/conversions of existing fleet vehicles, and
- Ability to address any vehicle maintenance that may differ from standard practice.

Summary of Potential Alternative Fuel Fleet Applications

Fleet Application ¹	Biodiesel ²	Electricity	Ethanol (E85)	Hydrogen	Natural Gas	Propane
Passenger Vehicle	--	PHEV, BEV	FFV	FCV	CNG	LPG
Taxicab	--	HEV	--	--	CNG	LPG
Vanpool-Shuttle	B20	n/a	FFV	--	CNG	--
Refuse Hauler	B20	HEV	--	--	CNG, LNG	--
Sweeper	B20	n/a	--	--	CNG, LNG	--
Other Medium/Heavy-Duty	B20	HEV	--	--	CNG, LNG	--
Forklift	--	BEV	--	--	CNG	LPG
Low-speed Vehicle ³	--	NEV	--	--	CNG	LPG

Notes.

1. Check with original equipment manufacturer (OEM) regarding vehicle warranty and alternative fuels.
2. Diesel blends that are five to twenty percent biodiesel and 95 to 80 percent traditional diesel fuel respectively.
3. E.g., traffic checker, neighborhood vehicle, other off-road vehicle.

B20 = twenty percent biodiesel blend

BEV = battery electric vehicle

E85 = 85 percent ethanol, 15 percent gasoline

FFV = flex fuel vehicle

LPG = liquefied petroleum gas

PHEV = plug-in hybrid electric vehicle

HEV = hybrid electric vehicle

FCV = fuel cell vehicle

CNG = compressed natural gas

LNG = liquefied natural gas

The previous table summarizes fleet uses for alternative fuels and the following table identifies local refueling availability to Santee and infrastructure costs. **Appendix F** provides a description of each alternative fuel and more detail about their applications.

Summary of Alternative Fuel Availability and Infrastructure

Fuel	Existing Fueling Infrastructure within ten miles of Santee ¹ and In County	Cost of Additional Fueling/Charging Infrastructure	Availability of Production-Distribution Infrastructure
Electric Charging	Sites not publicly listed yet. Potential opportunity to still have chargers (EVSE) sited at municipal sites. 1,450 public Level 2 EVSE, 50 public DC Fast Charge EVSE, and 1,000 home Level 2 EVSE in county by 12/31/11. ²	Public Level 2: \$2,500-\$5,000 ³ Residential Level 2: \$800 to \$1,500 ³	Existing electricity grid and distributed energy sources.
Biodiesel	Two existing private sites in vicinity. Two public, five private in county. Also, four cities replacing some diesel fuel with biodiesel: Oceanside, San Diego, Escondido, and Chula Vista.	Information not available on new infrastructure. Potential to have biodiesel brought to city, blended onsite within existing diesel storage tanks.	Storage and blending terminals, port off-loading sites needed. Local producer is New Leaf Fuels.
CNG	One public, six private within ten miles of city. Total of seven public, 15 private in county.	Small station: \$350,000 Medium station: \$500,000 Large station: \$950,000 Add public fast-fill dispenser: \$125,000	Existing natural gas pipeline network
Propane	One public in vicinity, 19 public in county	\$65,000	Existing
E85	Three public in county.	\$100,000 to \$250,000	Storage and distribution facilities needed in order to scale-up consumption
LNG	Two private in county.	Large station: \$1,200,000 Combined LCNG and LNG station: \$1,600,000	Existing, but West Coast off-shore LNG terminals needed
Hydrogen	One private in county.	\$500,000 to \$5,000,000	Significant investment required

Notes:

1. Site names, addresses, and distances are provided in **Appendix F**.
2. Numbers represent all of San Diego County and are being deployed as part of the EV Project, described on following page. Contact your Energy Roadmap coordinator if interested in having chargers at public sites in city.
3. Some if not all costs for installation and charging equipment listed in table are currently subsidized through the EV Project.

California has adopted several transportation fuel laws and goals, and the California Energy Commission has been the responsible agency for the targets shown in the *California Goals and Transportation Fuels* table. In order to meet these goals, the state has funded a grant program (the AB 118 Program) to help address barriers to the production and deployment of alternative fuels, vehicles, and infrastructure.

California Goals for Transportation Fuels

Objective	State Goals and Milestones
Petroleum Reduction	Reduce petroleum fuel use to 15 percent below 2003 levels by 2020
Alternative Fuel Use	Increase alternative fuel use to 20 percent of on-road fuel demand by 2020 and 30 percent by 2030
In-State Biofuels Use	Increase biofuel use to one billion gasoline gallons equivalent (gge) by 2010, 1.6 billion gge by 2020, and two billion gge by 2050
In-State Biofuels Production	In-state production of 20 percent of biofuels used in California by 2010, 40 percent by 2020, 75 percent by 2050

Online Vehicle Comparison Tool

When considering a new fleet vehicle purchase, the Cool Fleets Web site (www.coolfleets.com/) has a free online calculator that can help the city identify the most cost-effective vehicle with the best environmental performance. It provides helpful information on a variety of indicators, including costs and greenhouse gas emissions. The user can compare each vehicle to itself or other models using different lease term and average annual mileage scenarios. The user chooses the applicable fuel cost for his/her location, selects vehicles individually, or by a vehicle category.

Data provided by Cool Fleets include:

- *Total of all costs* - Sum of total fuel cost, total maintenance cost, total actual depreciation, and total interest cost.
- *Invoice amount* - Includes standard equipment with typical fleet options.
- *Manufacturer incentive* - Programs offered by each manufacturer. Additional incentives can be modified based on purchasing needs.
- *Monthly cost* - Total of all costs divided by months in service.
- *Total fuel cost* - Based on user input for cost per gallon, mileage, and months in service.
- *Effective depreciation rate* - The rate of depreciation for the portion of the vehicle's value that is consumed in use.
- *Total depreciation* - Total actual depreciation is the amount of the vehicle's value that is consumed in use.

- *Total maintenance* - Maintenance expenditures are based on Donlen's recommended service intervals at average national account prices. Includes tires at appropriate intervals.
- *Guide book average* - Based on the average of both Automotive Lease Guide and Black Book guidebook estimates.
- *Total interest cost* - Assumes a six-percent annual fixed lending rate and a two-percent depreciation rate.

The fleet manager can print vehicle comparison sheets from Cool Fleets that include the information bulleted above and use it to help in their new vehicle selection process. Another good online resource for relevant data on new and used cars and trucks from current and prior model years is www.fueleconomy.gov. The user cannot manipulate as many features as Cool Fleets, but users can access data on used vehicles.

State Grants and Rebates

The California Air Resources Board and California Energy Commission offer alternative transportation grants and rebates through 2015 under the AB118 Program. Funding is allocated annually and the FY 2010-2011 budget for the Energy Commission AB 118 Program (www.energy.ca.gov/altfuels/) is about \$108 million. The Air Resources Board (ARB) manages about \$85 million in rebates and projects through the Air Quality Improvement Program (www.arb.ca.gov/msprog/aqip/aqip.htm).

Locally, the California Center for Sustainable Energy manages ARB's Clean Vehicle Rebate Program (www.energycenter.org), which provides rebates for electric vehicle purchases. The Energy Commission has allocated funding for light-, medium-, and heavy-duty vehicles that use natural gas (\$13 million), as well as light- and medium-duty vehicles that use propane (\$3 million). Expanding alternative fuel infrastructure across the state is another funding priority with allocations for electric chargers, CNG station upgrades/expansions, and additional E85 dispensers.

The Electric Vehicle Project

The San Diego region was selected to take part in the largest electric vehicle (EV) rollout in history, through the EV Project (www.theevproject.com). Beginning in December 2010, two major automobile manufacturers began selling EV sedans, the *Nissan Leaf* and *Chevy Volt*, in San Diego County. The national project targets 16 major population areas in the U.S. as first markets for EVs. As such, the project includes deployment of nearly 15,000 EV chargers to create robust charging networks for EV drivers to utilize. Half of the EV Project funding (over \$100 million) comes from a competitive ARRA grant awarded to Ecotality North America, an EV charger manufacturer. Nissan North America, General Motors/Chevrolet, and the U.S. Department of Energy are national

project partners. SANDAG and SDG&E are local project partners providing in-kind assistance.

In 2009, Ecotality organized a San Diego Electric Vehicle Advisory Committee that provides input to the EV Project. The EV Advisory Committee includes representation from local governments, the California Center for Sustainable Energy, the Port of San Diego, UCSD, Qualcomm, SDG&E, SANDAG, and other stakeholders. The EV charger installations are underway and will be completed by December 31, 2011. Many public sites have been determined including marinas, restaurants, community and regional shopping centers, large venue entertainment, transportation corridors, schools, hotels, airports, convenience retail, and retail shopping.

Through the EV Project, about 2,500 electric vehicle (EV) chargers will be installed around San Diego County before January 2012. Almost 1,500 will be at publicly-accessible sites and about 1,000 will be at homes.

Over the next five years, most major automobile manufacturers will introduce plug-in electric vehicles and all vehicles will be able to utilize the standardized EV chargers installed through the EV Project. If the city would like to become an EV Project participant or host a publicly accessible EV charging site, opportunities are still available as of the writing of this report.

EV Project participants are qualifying electric vehicle purchasers that agree to have data on their charging habits aggregated into a U.S. Department of Energy study. The study includes the 15,000 vehicles in U.S. markets and will provide needed information on where future EV chargers should be sited across the country. In return for study participation, the EV purchaser receives its home (fleet location or residence) EV charger and installation at little to no cost. If the city is interested in test-driving an EV, the Enterprise location on Balboa Avenue will have a rental Nissan Leaf later this year.

For more information on the EV Project contact your Energy Roadmap coordinator or Andy Hoskinson, San Diego Stakeholder Services Area Manager for the EV Project and Ecotality North America at (619) 559-2118 or ahoskinson@etecevs.com.

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Develop Employee Knowledge of Energy Efficiency

The purpose of this chapter is to provide the city with sample educational and training opportunities (many at no cost) available to municipal employees at the San Diego Energy Resource Center, a resource provided by the California Center for Sustainable Energy and SDG&E. In addition, energy training classes and certifications that are available in the region are identified. SDG&E and/or the Energy Roadmap Program may be able to facilitate these opportunities for the city or cover enrollment costs.

Goal 10 of Santee's *Sustainability Project* is to develop an education and outreach program, including an employee educational campaign and resident/business outreach. This chapter will help the city address employee knowledge and chapter 8 addresses education for residents and local businesses.

In order to provide municipal employees with pertinent education opportunities, the Energy Roadmap coordinator is asking for Santee to:

- Identify staff positions (or staff) that could benefit from workshops and trainings at the San Diego Energy Resource Center and/or other venues;
- Identify any types of energy efficiency workshops or training of interest to Santee (even if not listed in this section); and
- Identify any types of workshops or training that the city would be interested in hosting at a municipal site or within East County.

The largest source of energy workshops in the region is at the San Diego Energy Resource Center, located at the California Center for Sustainable Energy (CCSE) in Kearny Mesa. The Energy Resource Center is a partnership program between SDG&E and CCSE. In addition, local colleges and universities host educational programs.

For more information on programs hosted by the Energy Resource Center, contact CCSE at (858) 244-1177 or visit www.energycenter.org. CCSE and SDG&E publish a quarterly workshop calendar and provide the information online. Typically, the workshops are provided at no cost, but if there is a fee, it is posted. An RSVP is generally requested for workshops to ensure that adequate space and food are provided.

The following page provides examples of quarterly workshops offered locally, as well as specific training and certification programs in which municipal staff can participate.

Free Educational Seminars at the Energy Resource Center		Audience
Building Performance and Monitoring	- Energy management systems - SDG&E's kWickview energy management tool - ENERGY STAR Portfolio Manager - Benchmarking tools - Building information modeling (BIM)	Facilities, public works
General Energy Workshops	- Energy efficiency 101 - Electricity 101 - Basics of solar, Basics of solar water heating - Lunch and learn topics	Layperson
Best Practices and Programs	- Energy Star best practices - Rebate programs	Planning, public works, city administration
Online Workshop Calendar	CCSE and SDG&E conduct hundreds of expert-facilitated seminars on a broad spectrum of energy topics at the Energy Resource Center. To view upcoming workshops from both organizations, visit www.energycenter.org/attend .	
Training and Certification Program	Description	Audience
Building Code Inspector Training	SDG&E offers free inspector training for city employees. Curriculum includes equipment identification and compliance, residential and commercial California Energy Code documentation and compliance, building plan verification for energy-efficiency standards, and 2010 California Green Building Code.	Code inspectors, planning staff
Building Operator Certification (BOC)	SDG&E offers BOC Level 1 and 2 trainings/certifications to city staff at a reduced rate. Building Operator Certification is a nationally-recognized training and certification program offering improved job skills and more comfortable energy-efficient facilities. The training is led by experienced, professional instructors.	Facilities, public works staff
Certified Energy Manager (CEM)	Certification is through the Association of Energy Engineers (AEE). CEM distinguishes high levels of competency and proficiency in energy management, demonstrating expertise in several areas ranging from standards, air quality, energy audits, lighting, procurement, and financing.	Facilities, public works staff
NATE Certification Exam (HVAC)	SDG&E and the Institute of Heating and Air Conditioning Industries, Inc. (IHACI) co-sponsor seminars designed to help experienced HVAC professionals prepare for successfully completing the North American Technician Excellence (NATE) Certification Exam.	Facilities, public works staff
LEED® Accredited Professional (AP)	The Leadership in Energy and Environmental Design (LEED) designation acknowledges expertise in green planning, design, construction, operations, neighborhood development, and other sustainable practices. SDG&E will cover the cost of appropriate city employees to undergo LEED AP training. Your Energy Roadmap coordinator can facilitate this for the city.	City administration, planning, facilities, public works, environmental services

Implement a Commuter Benefit Program

The city can achieve transportation-related energy savings by offering a commuter benefit program for its employees. Such a program provides alternative choices to the drive-alone commute, and can include everything from helping connect employees who want to carpool with one another, to offering flexible work schedules and telework options, to providing free or reduced-cost transit passes. Some programs are offered

Benefits of a Commuter Program

By facilitating more transportation choices for its employees, Santee can:

- Improve traffic flow
- Set an example for residents and local businesses
- Reduce oil consumption
- Help employees save time, reduce stress, and spend less money on their commute
- Reduce air pollution and climate changing emissions

free by SANDAG and others are inexpensive or come with subsidies. For example, SANDAG provides a \$400 per month subsidy for qualifying vanpools.

How it Works

Your Energy Roadmap coordinator will bring SANDAG iCommute program representatives to the city to explain the program, commuter options, incentive options, and program-tracking

options. Based on what the city is interested in pursuing, iCommute will identify programs that meet both city and employee needs. These programs can be bundled together for inclusion in a city's employee benefits package.

The iCommute online system (www.icommutesd.com) offers free and convenient ride-matching and trip-tracking tools for both the city and its employees. Reporting features are available to track the level of employee participation, identify associated financial savings, and identify environmental savings, such as the amount of air pollution and greenhouse gas emissions avoided.

When the city would like to get started by hearing more details about the local commuter programs available, your Energy Roadmap coordinator will arrange a meeting with iCommute program representatives. Santee also may contact Antoinette Meier, SANDAG iCommute program, at (619) 699-7381 or amei@sandag.org. The iCommute program is a transportation demand management (TDM) program offered to employers in the region including cities, businesses, universities, hospitals, the military and others.

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Leverage Planning and Development Authority



Local governments have the opportunity to promote energy efficiency in their communities by leveraging their authority over local planning and development activity. This chapter details several ways in

which the City of Santee could use its planning and development authority to promote energy savings from electricity, natural gas, and transportation fuel.

1. **Integrate energy-saving measures into planning and development**
2. **Include transportation demand management in development review**
3. **Enable building energy retrofit projects**

This chapter of the Energy Roadmap helps the city meet its sustainability goals for planning and development.

City of Santee Sustainability Project Goal 19
Explore sustainable land-use planning and development opportunities (review general plan and implement potential language changes; strengthen building energy codes, green design incentives and standards)

1. Integrate Energy-Saving Measures into Planning and Development

Communities in which people walk, bike, and ride public transit are typically characterized by a more concentrated, diverse mix of land uses and a sense of place, complemented by sidewalks, bike paths and lanes, buildings that front directly onto public streets, a variety of housing types and choices, and an interconnected and rich street grid that slows and disperses vehicle traffic. In addition to promoting transportation choices (other than the private vehicle), smart growth land use patterns help protect open space, wildlife habitat, watersheds, and agricultural land.

Mixed-use development sited near public transit, biking, and walking options enable a community to consume less transportation fuels and emit less pollution. More

concentrated development also leads to lower water consumption, and related household and infrastructure costs than conventional development patterns, and reduces water-related energy use.

Santee Bicycle Master Plan

The city's adoption of a bicycle master plan is one of the ways energy-saving measures have been incorporated into local planning. The city adopted its Bicycle Master Plan in 2009. The plan set goals and identified projects that could connect gaps in the city's existing bicycle network and integrate with the existing San Diego County regional bikeway system. By promoting convenient and efficient options for biking, the city is providing a safe alternative to driving, as well as reducing petroleum use and pollution in the community.

For additional opportunities to increase energy efficiency in the community, a menu of sample policy measures is identified in **Appendix G**. Measures include regulation of private development projects, amendments to local ordinances and the general plan, preparation of specific plans, and development of measures to mitigate significant environmental impacts under the California Environmental Quality Act (CEQA).

The sample measures reflect the goals of state agencies like the California Public Utilities Commission, California Energy Commission, and Office of the Attorney General, and are organized into the following categories:

- Energy-efficient buildings
- Renewable energy and distributed generation
- Smart growth and livable communities
- Clean transportation options
- Energy-efficient use of water



2. Include Transportation Demand Management in Development Review

Including transportation demand management (TDM) measures in the development review process may offer developers creative, affordable, and effective ways to reduce vehicle trips and their impacts. Sample mandatory and voluntary ordinances for including TDM measures in new development projects are provided in **Appendix H**.

Through the building permit process, Santee could require or provide voluntary incentives for inclusion of TDM measures as a method for reducing environmental

impacts of vehicle traffic generated by new projects. The SANDAG iCommute program offers free assistance to San Diego regional businesses and agencies in establishing and implementing customized transportation demand management programs that reduce traffic congestion, fuel use, air pollution, and greenhouse gas emissions.

Additional measures to reduce demand include teleworking, carpooling and vanpooling, alternative work schedules, certain vehicle pricing measures as well as parking pricing, and parking management and reform. Parking management and parking pricing strategies are options to reduce the amount of driving and are primarily implemented at the local government level.

Parking strategies can be effective in, and complement, smart growth areas with compact land use patterns and alternative travel options. They should be evaluated on a case-by-case basis to reflect the unique nature and local characteristics of the many communities and types of development projects throughout the region.

3. Enable Building Energy Retrofit Projects

Santee already participates in the planning for regional building retrofit programs. The city should continue to do so in order to take best advantage of services and resources as they become available that will provide property-owners with energy assessments, address up-front financing for energy efficiency and renewable energy projects, and train local contractors to perform the installation and maintenance.

Three types of inter-related programs to address energy retrofits are:

1. Energy Upgrade California, which includes energy incentives available from federal, state, utility, and local government sources.
2. Financing mechanisms that address net costs through energy-efficiency loans, liens, or mortgages.
3. Workforce development programs that train local contractors to perform energy assessments, product installations, maintenance, and other duties. (*Discussed in Chapter 8.*)

With the influx of ARRA funds that began in 2009, existing federal, state, and local energy-efficiency programs have been expanded upon and are being coordinated to bring down the costs of home energy assessments, capital purchases, installations, and inspections. California has compiled all available programs under one umbrella program, named Energy Upgrade California (www.energyupgradecalifornia.org). The program coordinates federal, state, utility, and local government retrofit program outreach, incentives, contractor training, and participant qualifications.



Finance programs also are part of Energy Upgrade California. Goal 20 of Santee's *Sustainability Project* is to research AB 811 property assessed clean energy (PACE) financing programs, which city staff has done. In light of restrictions at the federal level, the city should consider revising its goal to read that it will *research financing programs that enable interested property owners to finance the installation of energy improvements on their homes or businesses*.

The suggested revision is due to an unresolved federal dispute regarding PACE programs. In July 2010, the Federal Housing Finance Agency (FHFA) posted a statement that a senior PACE lien is in violation of any Fannie Mae or Freddie Mac mortgage contract. As a result, residential PACE financing has stalled. A nationwide PACE coalition (www.pacenow.org) is working to take legislative action that will correct this issue.

Appendix I provides information on additional financing mechanisms and describes energy retrofit program resources.

Market Programs and Rebates to Residents and Local Businesses

The purpose of this chapter is to provide Santee with internet links to existing energy-efficiency resources that the city could include on its municipal Web site and be of benefit to local constituents. The chapter also provides one-stop internet access points to:

- Residential resources
- Business resources
- Educational resources

California's Vision for Marketing, Education and Outreach

Californians will be engaged as partners in the state's energy efficiency, demand-side management, and clean energy efforts by becoming fully informed of the importance of energy efficiency and their opportunities to act.

California Long-Term Energy Efficiency Strategic Plan

Santee may help promote messages of efficiency and sustainability to foster a greater local understanding of the connection between energy use and environmental impact. The city also could become a local government partner with national energy-saving educational campaigns like *ENERGY STAR* and *Water Sense*. These efforts can help meet Goal 10 of Santee's *Sustainability Project*, which is to develop an education and outreach program, including an employee educational campaign and resident/business outreach.

The following five outreach mechanisms are possible ways that the city can engage its constituents. Your Energy Roadmap coordinator can suggest ways to implement any and all of these outreach mechanisms and information.

1. On the city internet site, post links to SDG&E rebate and incentive programs, as well as the other resources provided here.
2. Through city newsletters or other outreach mechanisms, include articles about opportunities to save energy with links to existing programs and community resources, like the California Center for Sustainable Energy.
3. At city venues, such as the permit desk, parks and recreation areas, libraries, and city hall, provide educational materials on saving energy. SDG&E, California

Center for Sustainable Energy (CCSE), and SANDAG iCommute have materials about programs and services available to residents and businesses in the region.

4. At community events, SDG&E, CCSE, and SANDAG iCommute can provide booths and/or information on energy-saving programs and commuter programs available to your constituents
5. Through an introduction from the city, SDG&E and SANDAG iCommute can engage your local business organizations on low- and no-cost programs tailored to businesses.

The following tables identify Web links to energy, fuel, and water efficiency programs available to local businesses, residents and the general public. By providing this information on its Web site, the city would serve as another access point for its community to find out about, and take advantage of, energy-saving programs services.

One-Stop Shop Web Sites

Residential Energy-Saving Programs	www.sdge.com/residential/rebates.shtml
Commercial Energy-Saving Programs	www.sdge.com/business/rebatesincentives
Educational Resources for All	San Diego Energy Resource Center's Online Workshop Calendar. Center for Sustainable Energy (CCSE) and SDG&E conduct hundreds of expert-facilitated seminars on a broad spectrum of energy topics at the Energy Resource Center. Use the online calendar to view additional workshops from both organizations. www.energycenter.org/attend
iCommute	Free online gateway to commuter choices in the San Diego region; hosted by SANDAG. Includes 511, transit trip planner, online ride matching service, and cost of commute calculator. www.icommutesd.com/
Energy Upgrade California	www.energyupgradecalifornia.org

Resources for Businesses and Residents

Renewable Energy Programs

Self-Generation Incentive Programs	www.energycenter.org/index.php/incentive-programs/self-generation-incentive-program
The California Solar Initiative (CSI)	www.energycenter.org/index.php/incentive-programs/california-solar-initiative
CSI Thermal Program (Solar Water Heating)	www.energycenter.org/index.php/incentive-programs/solar-water-heating
Sustainable Communities Program	www.sdge.com/environment/sustainablecommunities/
California Energy Commission's Emerging Renewables	www.consumerenergycenter.org/erprebate/index.html
The Solar Energy Project	www.sdge.com/environment/solar/sdSolarInitiative.shtml
Net Energy Metering (NEM)	www.sdge.com/nem/

Clean Transportation and Petroleum Reduction Programs

Clean Vehicle Rebate Project	www.energycenter.org/index.php/incentive-programs/clean-vehicle-rebate-project
SANDAG iCommute	www.icommutesd.com/ Free online gateway to commuter choices in the San Diego region.
SDG&E Clean Transportation	www.sdge.com/environment/cleanTransportation.shtml
The EV (Electric Vehicle) Project	www.theevproject.com/

Energy and Water

20-Gallon Challenge	http://20gallonchallenge.com/ The 20-Gallon Challenge is a call for residents and businesses to reduce our region's water use on average by 20 gallons per person, per day. Hosted by the San Diego County Water Authority.
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Smart Grid

SDG&E Smart Grid Program	www.sdge.com/smartgrid Smart meter and smart grid technologies are being deployed throughout the San Diego region and across the state.
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Energy Programs and Assistance for Local Businesses

Energy Efficiency and Demand Response

SDG&E's Business Incentives Site	www.sdge.com/business/rebatesincentives All SDG&E business programs can be accessed from this Web site.
Critical Peak Pricing	www.sdge.com/cpp
Technical Assistance and Technology Incentives	www.sdge.com/tati
Project Management Builder Services	www.sdge.com/builderservices
Summer Saver	www.sdge.com/summersaver
On Bill Financing	www.sdge.com/obf
Energy Savings Bid	www.sdge.com/bid
Energy Challenger (energy audit tool)	www.sdge.com/audit
Energy-Efficiency Seminars	www.sdge.com/training

New Construction

Savings by Design	www.sdge.com/builderservices/savingsBD.shtml
Sustainable Communities Program	www.sdge.com/environment/sustainablecommunities/

Energy Programs and Assistance for Residents

Comprehensive Residential Web Sites

SDG&E's Residential Rebates and Services	All SDG&E residential programs can be accessed from this Web site. www.sdge.com/saveenergy
Retrofit Central	Retrofit Central is a one-stop shop for information on programs, incentives, technical assistance, and financing for energy efficiency and renewable residential retrofits. Once Energy Upgrade California is fully functional, it may be phased out. It is hosted by the California Center for Sustainable Energy. www.energycenter.org/retrofit
PACE and AB 811 Programs	Property Assessed Clean Energy ("PACE") or AB 811 programs were intended to give cities and counties the ability to offer low-interest loans for energy-efficiency projects and solar panels to homeowners and small businesses. *PACE programs are currently on hold nationwide. CCSE provides current status of PACE and regional activities. http://energycenter.org/index.php/incentive-programs/pace-property-assessed-clean-energy

Energy Efficiency and Demand Response

Advanced Home Program	www.sdge.com/builderservices/newHomes.shtml
Air Conditioning Tune-Ups	www.actimeprogram.com/ProjectCenter/
Summer Saver Program	www.sdge.com/summersaver/
Affordable Financing for Home Improvements	www.sdge.com/residential/homeImpFinance.shtml
Refrigerator-Freezer Recycling Program	www.arcaincutility.com/CA/SDGE/Step2_ZipCode.cfm?ServiceCompany=43
Clothes Washer Rebate Program	www.20gallonchallenge.com/programs_residential.html or (888) 376-3314
Residential Energy Survey	www.sdge.com/residential/resEnergyProfiles.shtml (800) 411-SDGE (7343)
Lighting Turn in Program	www.sdge.com/lighting
Earn Tax Credits	www.energytaxincentives.org/

Energy and Water

WECalc Home Water-Energy-Climate Calculator	Free online tool from the Pacific Institute that estimates home water-related energy use and associated greenhouse gas emissions. http://www.wecalc.org/
SoCal Water Smart for Residential Customers	www.socalwatersmart.com/ Available water efficiency product rebates.
Clothes Washer Rebate Program	www.20gallonchallenge.com/programs_residential.html or (888) 376-3314

New Construction Programs

Advanced Home Program	www.sdge.com/builderservices/newHomes.shtml
New Solar Homes Partnership	www.sdge.com/environment/solar/solarForNewHomes.shtml

Low Income Assistance

Residential Rate Assistance Program	www.sdge.com/residential/assistance/assistServCare.shtml
The Energy Team Program	www.sdge.com/residential/energyTeam.shtml or (866) 597-0597
Programs for Customers with Special Needs	www.sdge.com/residential/assistance/otherCustomerServices.shtml
Neighbor to Neighbor	www.sdge.com/residential/assistance/financialAssistance.shtml
Multi-Family Affordable Solar Housing	www.energycenter.org/index.php/incentive-programs/multifamily-affordable-solar-housing

Local Educational Resource



San Diego Regional Energy Resource Center

Jointly provided by the California Center for Sustainable Energy and San Diego Gas & Electric

The San Diego Energy Resource Center (ERC) is a community resource for energy information and provides a variety of workshops, continuing education and certification courses in energy efficiency, renewable energy and green building including HERS training, BPI certification, LEED certification, and solar installation training. The ERC is located at 8690 Balboa Avenue, Suite 100, San Diego, CA 92123. Contact Tel (858) 244-1177, www.energycenter.org. Center hours are from 8 a.m. to 5 p.m. weekdays excluding national holidays. Resources include:

- Online workshop, training, and events calendar: CCSE and SDG&E conduct hundreds of expert-facilitated seminars on a broad spectrum of energy topics at the Energy Resource Center.
- Energy Connection eNewsletter: CCSE's free monthly eNewsletter provides current information on resources, regional energy issues, news, and other features.
- Reference and tool-lending library: The reference library offers books, DVDs and periodicals on climate change, efficiency, green building, renewable energy, and transportation. Materials cover a broad range of information and are designed for those in a variety of professions and levels of education and knowledge.

National Educational Resources



ENERGY STAR Government Partnerships

In addition to appliance labeling, the ENERGY STAR Program seeks partnerships with local businesses, congregations, industries, schools, and others. By becoming a Government ENERGY STAR Partner, a local government can receive recognition nationally and can co-brand local energy-saving initiatives with ENERGY STAR. www.energystar.gov

The EPA and DOE also host an annual ENERGY STAR Awards ceremony to honor organizations that have made outstanding contributions to protecting the environment through energy efficiency. For more information on government partnerships, visit www.energystar.gov/index.cfm?c=government.bus_government.

WaterSense® WaterSense Promotional Partners

WaterSense (www.epa.gov/watersense) helps consumers identify water-efficient products and programs that meet WaterSense water efficiency and performance criteria. Products carrying the WaterSense label perform well, help save money, and encourage innovation in manufacturing.

Local governments, utilities, and other organizations can become WaterSense Promotional Partners to help provide outreach on water-efficiency measures. Jurisdictions can receive recognition nationally and can co-brand local water-saving initiatives with WaterSense as a promotional partner. Visit www.epa.gov/watersense/partners/promotional.html.

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Support Green Jobs and Workforce Training

The city of Santee can increase local awareness of workshops, training, and employment resources available to its constituents. The city can make this information more widely available by including it on its Web site and/or providing handouts at local libraries and city hall.

Some of the training available in the region has been funded through the American Recovery and Reinvestment Act (ARRA), and may be discontinued after December 2012. Many other local resources identified in this section are available long term.

California's Vision for Workforce Education and Training

By 2020, California's workforce is trained and fully engaged to provide the human capital necessary to achieve California's economic, energy efficiency, and demand-side management potential.

California Long-Term Energy Efficiency Strategic Plan

Training and Education Resources

Sample Green Job Fields	Sample Green Jobs
Building retrofitting Mass transit-freight rail Smart grid Wind power Solar power Advanced biofuels Alternative transportation vehicles and infrastructure	Electricians, heating, ventilation and air conditioning (HVAC) installers, carpenters, construction workers and managers, home builders, roofers, building inspectors, engineers (civil, mechanical, environmental, electrical), welders, metal fabricators, assemblers, transit and truck drivers, dispatchers, software engineers, technicians, machinists, power line installers and repairers, iron and steel workers, sheet metal workers, equipment operators, chemists, chemical technicians, agricultural workers, farm product purchasers, agricultural inspectors



The Green Career Network

The Green Career Network (www.greencareernetwork.org) brings together green job seekers and green employers. Hosted by the California Center for Sustainable Energy, this online portal provides job listings, trainings, and research in green jobs in renewable energy, energy efficiency, green building, transportation, sustainability, and environmental studies.

On the **Green Career Network** job seekers can:

- Access job postings and a Green Employers list
- Read a step-by-step guide to finding a green job
- Identify available workforce training and education opportunities
- Access studies and reports on the green economy, industries, and market analyses
- Network through free educational programs and events

Employers can:

- Use an on-line job board to post job announcements and review resumes
- Find information about on-the-job training programs that can reimburse up to 50 percent of wages or salaries earned by eligible new workers during training
- Find information on how to get help from groups like the Small Business Administration and the Small Business Development Center that provide free business counseling, workshops, and training to help grow businesses



San Diego Miramar College's Advanced Transportation Technology & Energy Center

Advanced Transportation Technology & Energy (ATTE) Centers were created as a means for keeping California competitive as a national leader in advanced transportation and energy technologies, and to transform the workforce in the rapidly developing, technology-driven transportation and energy industries. San Diego Miramar College's ATTE Center is the regional center for San Diego County.

Courses, assistance, and outreach programs are tailored to the needs of regional employers and employees in California. The ATTE Center provides students, technicians, faculty, public, and other initiative centers with the education, training, and resources they need to effectively learn, teach, and work with advanced transportation and energy technologies, including:

- Electric, hybrid, and hydrogen fuel cell programs
- Gaseous fuel programs for light and/or heavy duty vehicles
- Intelligent transportation systems programs
- Railroad operation programs
- Light rail maintenance aeronautics and flight
- Technology programs and energy programs
- Motorcycle maintenance programs
- Automotive clean-air car emissions programs

The Miramar College ATTE Center is located at 10440 Black Mountain Road, San Diego, CA 92126. Call (619) 388-7673 or visit www.attemiramar.com for more information.



Cuyamaca Community College's San Diego Green Building Training Collaborative

The Grossmont-Cuyamaca Community College District (GCCCD) was awarded ARRA funds to launch the San Diego Green Building Training Collaborative under California's Clean Energy Workforce Training Program. The collaborative trains unemployed or underemployed workers with previous construction experience to be building analyst professionals, water auditors, solar photovoltaic installers, and solar thermal installers.

Trainings serve all of San Diego County and are offered at Cuyamaca College in Rancho San Diego and Palomar College in San Marcos. Certificates of Achievement are awarded upon program completion. GCCCD plans to continue the green building training collaborative after ARRA funds are expended. Cuyamaca College already offers green workforce training certificates and degrees in water/wastewater technology, environmental health and safety, sustainable landscaping, and renewable energy. For more information, visit www.cuyamaca.edu/preview/cleanenergy/.

The San Diego Workforce Partnership

The San Diego Workforce Partnership (www.sandiegowork.com/) works with public and private agencies, local businesses, and educational institutions to create workforce solutions for the San Diego region. It provides services for employers and job seekers, online access to workforce training and resource, and has ten One-Stop Career Centers located throughout San Diego County. The Workforce Partnership serves as this region's Workforce Investment Board (WIB).

The nearest One-Stop Career Center to Santee is the East County Career Center, operated by Grossmont Union High School District, 924 East Main Street, El Cajon, CA 92021. Center hours are Monday through Friday from 8 a.m. to 5 p.m. Call (619) 590-3900 or visit <http://eccc.guhsd.net/>.



San Diego Regional Energy Resource Center

Jointly provided by the California Center for Sustainable Energy and San Diego Gas & Electric

The San Diego Energy Resource Center (ERC) is a community resource for energy information and provides a variety of workshops, continuing education, and certification courses in energy efficiency, renewable energy, and green building, including HERS training, BPI certification, LEED certification, and solar installation training. The ERC is located at the California Center for Sustainable Energy (CCSE) at 8690 Balboa Avenue, Suite 100, San Diego, CA 92123. For more information, contact (858) 244-1177 or visit www.energycenter.org. Center hours are from 8:00 a.m. to 5:00 p.m. weekdays.

Statewide Resources for Training and Education



Grid Alternatives

Grid Alternative (www.gridalternatives.org) offers volunteer opportunities to gain hands-on solar experience and network with others interested in renewable energy, the environment, and our communities.



Solar Training Institute

The Solar Training Institute (www.trainingforsolar.com) provides accelerated training classes for contractors, electricians, engineers, solar energy entrepreneurs, sales people and anyone who is considering a career change to the growing solar industry.



California Community Colleges Economic and Workforce Development

The California Community Colleges Economic and Workforce Development (CCCEWD) program provides industry-specific workforce education, training, and consulting services to help California businesses compete. CCCEWD (www.cccewd.net/) is the state program from which the local Advanced Transportation Technology and Energy Center, San Diego Workforce Partnership, and One-Stop Career Centers stem.

Looking Forward

Through the SANDAG Energy Roadmap Program, Santee has set a framework for continued efforts to save energy in local government operations and in the community. After completion of the Energy Roadmap Program in 2012, there are several funding opportunities for which the city may apply to continue energy-saving activities, either on its own or in partnership with SANDAG. These local, state, and federal funding sources for energy efficiency are described below, followed by non-financial resources that could be of service.

Energy-Saving Funding Opportunities

Local Government Partnerships with San Diego Gas & Electric

SANDAG's Energy Roadmap Program is primarily funded through a local government partnership with SDG&E. The utility manages several local government energy-efficiency partnerships in the region for jurisdictions, public agencies, and the California Center for Sustainable Energy. The duration is typically three years, and they are approved by the California Public Utilities Commission.

Prior to the start of new program cycles, SDG&E announces a request for abstracts for future local government partnership programs. The next program cycle, which will be determined by the CPUC, will likely begin in January 2014. Using its Energy Roadmap as a guide, Santee can decide if it would like to propose to SDG&E its own local government partnership, have SANDAG continue to serve as a mechanism to provide member agencies with added energy efficiency services, or decide on another course of action.

Local Government Energy Efficiency Partnerships have three focus areas:

1. Identify energy efficiency savings in municipal sites
2. Utilize core energy efficiency programs
3. Engage the community on energy efficiency

The County of San Diego, Chula Vista, and the City of San Diego have their own local government partnerships with SDG&E. Programs that SDG&E has funded through local government partnerships include:

- Municipal facility retrofit for energy-efficiency improvements
- Strengthened building energy codes and enforcement
- Land use planning and design
- Education and outreach
- Compact fluorescent light bulb (CFL) recycling programs
- Green building / permit expedite / fee reduction programs
- Peer-to-peer best practices and networking
- Staff training programs
- Energy plan development



State Energy Program Grants and



Energy Efficiency and Conservation Block Grants

The U.S. Department of Energy (DOE) and California Energy Commission release State Energy Program (SEP) solicitations that support transportation, residential, commercial, agricultural, industrial, institutional energy efficiency, and renewable programs.

Both agencies also release Energy Efficiency and Conservation Block Grants (EECBG) solicitations. The EECBG provides local government grants to reduce fossil-fuel emissions, reduce total energy use, and improve energy efficiency and conservation in the transportation and building sectors. Grants originate from DOE and are released from both the Energy Commission and DOE. Review the Energy Commission's grants Web page (www.energy.ca.gov/contracts/index.html) regularly for program opportunities.

Non-Financial Resources for Local Governments



The Beacon Award

The Institute for Local Governments' California Climate Action Network (CCAN) has created the Beacon Award to recognize cities and counties that reduce GHG emissions and save energy. To receive a silver, gold or platinum Beacon Award, jurisdictions must achieve measurable GHG reductions and energy savings in agency facilities, and achieve measurable GHG reductions and promote energy conservation activities in the community.

Once a local government applies, it is designated as a Beacon Award program participant, and will then begin working toward achieving the first Beacon Award level. There is no deadline to apply; applications will be accepted on an ongoing basis. Your Energy Roadmap coordinator can identify necessary next steps for Santee to participate, or visit www.ca-ilg.org/BeaconAward for more information.

San Diego Gas & Electric

As described in previous chapters, SDG&E (www.sdge.com) manages a variety of energy-saving programs that:

- Promote energy efficiency, demand response and conservation programs, services and resources
- Provide energy education and outreach to the community



California Center for Sustainable Energy

The California Center for Sustainable Energy (CCSE) (www.energycenter.org) works with local governments on several initiatives including:

- The San Diego Regional Retrofit Advisory Committee, that includes several local jurisdictions, SANDAG, and SDG&E
- The Energy Upgrade California program



Energy Policy Initiatives Center

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 serves as a source of legal and policy expertise, and provides information on the development of sustainable solutions that meet the region's future energy needs. For more information, contact (619) 260-4589 or visit www.sandiego.edu/epic/.



CleanTECH San Diego

Santee is a member of CleanTECH San Diego, a non-profit organization that works to accelerate San Diego as a world leader in the clean technology economy. CleanTECH San Diego stimulates innovation and advances the adoption of clean technologies and sustainable industry practices for the economic, environmental and social benefit of the greater San Diego region. For more information, visit www.cleantechsandiego.org.



San Diego Association of Governments

SANDAG Energy and Climate Planning Program staff is knowledgeable about federal, state, regional, and local issues and can be a resource for jurisdictions after their Energy Roadmaps are completed. For more information on SANDAG energy and climate planning, contact Susan Freedman at (619) 699-7387, sfr@sandag.org or visit www.sandag.org/energy.



iCommute

The SANDAG iCommute team can assist local governments with staff commuter programs, transportation demand management (TDM) ordinances, online tools, and outreach to your constituents on mobility choices in the region. Contact Antoinette Meier at (619) 699-7381, amei@sandag.org or visit www.icommutesd.com.



Statewide Energy Efficiency Best Practices Coordinator

Patrick Stoner serves as the Statewide Local Government Energy Efficiency Best Practices coordinator. The position is part of the Public Utilities Commission's 2010 through 2012 statewide energy efficiency programs. Like SANDAG is available to you locally, Mr. Stoner is a statewide resource. The statewide coordinator develops and distributes best practices case studies, provides information and examples of energy efficiency policies and programs, provides materials that may help local governments implement climate action plans, and serves as a resource to help local government energy programs achieve success. Mr. Stoner is housed at the Local Government Commission (LGC) and has been part of the LGC since 1993. He can be reached at (916) 448-1198, extension 309 or e-mail pstoner@lgc.org.

Statewide Energy Efficiency Collaborative

The Statewide Energy Efficiency Collaborative (SEEC) was formed in 2010 as an alliance to help cities and counties reduce greenhouse gas emissions and save energy. SEEC (www.californiaseec.org/) serves as a statewide local government partnership and is an alliance among the Local Government Commission, ICLEI – Local Governments for Sustainability, the Institute for Local Government, and California's four investor-owned utilities, including San Diego Gas & Electric.

- Local Government Commission provides free webinars, holds an annual statewide conference, and provides peer-to-peer networking opportunities
- ICLEI is conducting a series of workshops and trainings for local governments on taking key steps to reduce greenhouse gas emissions
- Institute for Local Governments' California Climate Action Network (CCAN) is providing recognition for cities and counties through the Beacon Award

www.sandag.org/energy



This Program is a collaboration between SANDAG and San Diego Gas & Electric®.

