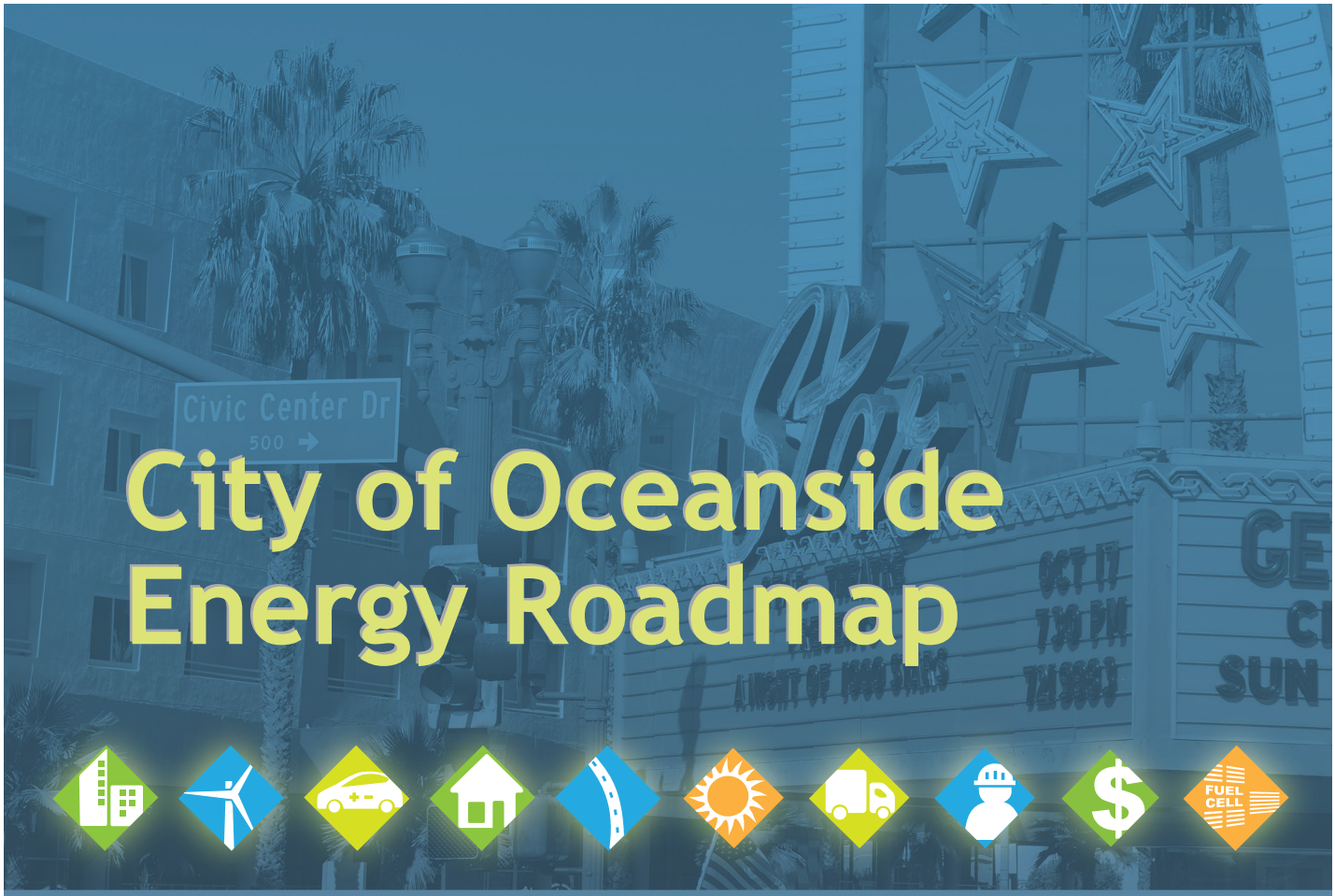

City of Oceanside Energy Roadmap

Prepared through the SANDAG Energy Roadmap Program

March 2012

SANDAG

SDGE
A Sempra Energy utility®

Energy Roadmap for the City of Oceanside

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Acknowledgements and Program Contacts

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Program Contacts

Energy Roadmap Coordinator:
Susan Freedman, SANDAG, sfr@sandag.org, (619) 699-7387

iCommute Program:
Antoinette Meier, SANDAG, amei@sandag.org, (619) 699-7381

SDG&E® Energy Efficiency Programs:
Josh Brock, JBrock@semprautilities.com, (858) 503-5129

SDG&E Account Representative:
Kraig Akers, KWAkers@semprautilities.com, (858) 654-1208

Building Energy Audits:
John Woolsey, EFM Solutions, john.woolsey@efm-solutions.com, (619) 549-6695

The following staff of the San Diego Association of Governments had primary responsibility for the preparation of this document.

Susan Freedman, Senior Regional Energy Planner
Allison King, Regional Energy/Climate Planner

Introduction

This energy management plan, or "Energy Roadmap," provides a framework for the City of Oceanside 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:

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

- 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

Prior to starting the Energy Roadmap process, Oceanside already had taken steps in making its buildings more energy efficient, identifying local sources of greenhouse gas (GHG) emissions, and incorporating sustainability and energy considerations into its land use and transportation planning.

Oceanside 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). The City's Energy Roadmap can help identify measures to include in local climate planning.

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 Oceanside to lead by example with its buildings and facilities, vehicles, and its energy usage practices:

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

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. **Promote Commuter Benefits to City Employees**

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 Oceanside to lead its community with innovative programs for energy efficiency, sustainability, and climate change:

6. **Leverage Planning and Development Authority**
   a. Smart growth development policies
   b. Energy efficient building upgrades
   c. Clean and efficient transportation options
7. **Market Energy Programs to Residents, Schools, and Local Businesses**
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

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 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.

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

The table on the following page provides a timeline of Oceanside's Energy Roadmap efforts.

Oceanside's Energy Roadmap Timeline				
Winter 2010 - 2011	**Spring/Summer 2011**	**Fall 2011**	**Winter 2011 - 2012**	**Mar. 2012 until Dec. 2014**
Roadmap begins with City staff	Baseline energy use identified	Employee commute options researched	City fleet and fuels review	Presentation to City Council
City gives input and direction	Energy audit and rate review		City Roadmap completed	City eligible for continued Roadmap assistance
	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, Oceanside 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.

Oceanside could save almost $196,000 each year from energy-efficiency upgrades and rate changes identified at municipal sites.

Energy Assessments

In 2011, 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 20 municipal sites (listed below) mid-year in 2011. Each Energy Report Card is included in **Appendix A**. These preliminary assessments established each site's baseline energy use and benchmarked it against similar building types in the country.

- Civic Center
- City Operations & Fire Station 8
- Fire Stations 1-7
- Police Department
- Oceanside Branch Library
- Melba Bishop Recreation Center
- Joe Balderrama Recreation Center
- El Corazon Recreation Center
- Senior Citizens Recreation Center
- Beach Recreation Center
- San Luis Rey Waste Water Treatment Plant
- La Salina Waste Water Treatment Plant
- Robert A. Weese Water Treatment Plant
- Mission Basin Desalination Plant

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 (CO_2E).

Oceanside could save approximately $80,000 each year on its utility bills by switching utility rates for its local parks.

The preliminary energy assessments indicate that most Oceanside municipal sites are performing within 20 percent of the comparable buildings in California and the nation. Either in response to a specific issue discovered through the site assessment process, or as instructed by city staff, eight sites and two technologies citywide were identified in a priority site list and targeted for additional evaluation in the form of a comprehensive energy audit and/or rate analysis. The site list is included as **Appendix B**.

- Civic Center
- City Operations & Fire Station 8
- Melba Bishop Recreation Center
- San Luis Rey Waste Water Treatment Plant
- La Salina Waste Water Treatment Plant
- El Corazon Recreation Center
- Senior Citizens Recreation Center
- All Outdoor Lighting
- All Backup Generator Block Heaters

The Phase 2 Energy Audits were to identify 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 utility rate analyses and energy audit findings are summarized below and are included as **Appendices C and D**.

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, rate analyses, Phase 2 energy audit findings, and a master spreadsheet of energy conservation measures identified.

Energy Audit Findings

Oceanside has the potential to realize over $100,000 in annual operations savings on its utility bills by implementing the energy conservation measures in the *Potential Savings by Energy Conservation Measure* table on page 9. In addition, the city has the potential

to save approximately $80,000 each year on its utility bills by switching to a relatively new outdoor lighting rate. The rate change could apply to several community parks, and it is described in the following section.

The Civic Center may be able to reduce the energy consumption of its "Liquid Chiller" by up to twenty percent at no cost to the city.

Regarding energy-saving retrofit projects, Oceanside could qualify for SDG&E's On-Bill Financing Program, which could enable the city to avoid paying upfront capital costs associated with energy-saving retrofits through zero-percent interest loan(s) on its utility bill(s). Once each loan is paid off (using zero-percent on-bill financing), the city's utility bills would reflect annual bill savings like those shown in the *Energy Conservation Measure Economics* table on page 10.

Lowering City Utility Bills at Community Parks

A simple analysis was conducted to estimate potential savings the City of Oceanside could realize if outdoor area lighting was switched from existing utility rates to one of the optional outdoor lighting rate schedules now offered by SDG&E. Analysis of the following parks identified a potential annual bill savings of up to $80,000 by switching to an outdoor lighting time of use (OL-TOU) utility rate. SDG&E must perform its own assessment to determine if sites can qualify "as-is" for this rate change, or if additional measures would be necessary.[1] The rate analyses are provided as **Appendix D**.

- Luiseno Park
- MLK Park
- Capistrano Park
- Ron Ortega Park
- Lake Park

Low to No Cost Energy Saving Projects

The City of Oceanside has the capability of lowering utility costs at the City Hall facility with no capital improvement costs. City Hall utilizes a central chiller and cold water storage in the form of an ice bank. The chiller can be precisely scheduled to work during less expensive "off-peak" and "semi-peak" hours. This measure would help the city avoid the most expensive electricity rates. Scheduling the chiller to operate at the lower-cost times during the day can significantly lower the monthly utility bills for City Hall with no upfront capital costs.

[1] For a park to qualify for this reduced utility rate, at least 90 percent of the electricity consumed must be for outdoor lighting. Parks that include caretaker residences, or other non-lighting load in excess of ten percent, could not qualify without undergoing electrical upgrades.

Implementation Strategy for Energy and Cost Savings	
1.	Apply to SDG&E for outdoor lighting rate changes at community parks. Undertake rate change at all parks that qualify.
2.	Pursue energy retrofit projects that qualify for on-bill financing and/or have an immediate payback.
3.	Seek approval from SDG&E to use its On-Bill Financing Program (zero-percent interest loans) to cover upfront costs for energy upgrades.
4.	Undertake internal city processes to implement energy upgrade projects.
5.	Monitor site performance to ensure energy and cost savings are achieved.

The Energy Roadmap team can assist Oceanside with these implementation steps over the duration of the Roadmap Program (until December 2016).

Finance Options for Energy Projects

SDG&E provides rebates, incentives, and financing options to pay for all or part of the costs of energy conservation measures. The SDG&E On-Bill Financing Program provides zero-percent financing for the installation of energy-efficiency improvements meeting certain criteria. Financial assistance also is available from other agencies like the California Energy Commission. Additionally, Energy-efficiency and Conservation Block Grants have been used by many jurisdictions to pay for the upfront costs of energy conservation measures.

No-cost assistance with rebates, incentives, and financing options is available to the city as part of the Energy Roadmap Program. Please contact your Energy Roadmap coordinator with requests for assistance or questions.

San Diego Gas & Electric® Rebates and Incentives

As part of the energy audit findings, EFM Solutions identified the appropriate SDG&E rebates and incentives[2] 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/.

[2] 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.

Potential Savings by Energy Conservation Measure

Location	Measure	*Annual Savings for City*			
		Electricity (kWh)	Demand (kW)	Bill Savings	Greenhouse Gases ($MTCO_2e$)
Oceanside Civic Center	Outdoor Lighting	36,459	8.7	$8,021	25.1
	Generator Block Heater	2,386	0.3	$525	1.6
	Vending Misers	8,774	0.0	$1,930	6.1
Oceanside City Operations and Fire Station 8	Outdoor Lighting	38,754	8.9	$8,526	26.7
	Generator Block Heater	1,629	0.1	$358	1.1
	Vending Misers	6,816	0.0	$1,500	4.7
Melba Bishop Recreation Center	Outdoor Lighting	7,450	1.7	$1,639	5.1
San Luis Rey Waste Water Treatment Plant	Outdoor Lighting	44,575	10.2	$9,807	30.7
	Generator Block Heater	23,070	4.0	$5,075	15.9
	Other	371,649	2.0	$81,763	256.2
La Salina Waste Water Treatment Plant	Outdoor Lighting	8,830	1.8	$1,943	6.1
	Generator Block Heater	19,706	3.4	$4,335	13.6
All Other Sites	Outdoor Lighting	71,788	16.4	$15,793	49.5
	Backup Generator Block Heaters	248,522	40.6	$54,675	171.4
	TOTALS	**890,408**	**98.1**	**$195,890**	**613.8**

Notes:
1. kWh = kilowatt hours, $MTCO_2e$ = metric tons of carbon dioxide equivalent.
2. Energy assessments included HVAC systems, indoor and outdoor lighting, and building controls.
3. No opportunities for natural gas savings were identified during the energy audits.

Energy Conservation Measure Economics

Location	Measure	Gross Project Cost	Total SDG&E Incentives	Net Project Cost	Simple Payback (years)
Oceanside Civic Center	Outdoor Lighting	$37,512	$4,396	$33,115	4.1
	Generator Block Heater	$2,000	$387	$1,613	3.1
	Vending Misers	$1,536	$500	$1,036	0.5
Oceanside City Operations and Fire Station 8	Outdoor Lighting	$37,258	$3,659	$33,599	3.9
	Generator Block Heater	$2,000	$259	$1,741	4.9
	Vending Miser	$1,057	$200	$857	0.6
Melba Bishop Recreation Center	Outdoor Lighting	$5,148	$678	$4,470	2.7
San Luis Rey Waste Water Treatment Plant	Outdoor Lighting	$41,997	$3,638	$38,359	3.9
	Generator Block Heater	$16,500	$3,857	$12,643	2.5
	Other	$180,000	$31,878	$148,122	1.8
La Salina Waste Water Treatment Plant	Outdoor Lighting	$10,010	$643	$9,367	4.8
	Generator Block Heater	$15,000	$3,292	$11,708	2.7
All Other Sites	Outdoor Lighting	$66,073	$9,595	$56,478	3.6
	Backup Generator Block Heaters	$187,900	$41,341	$146,559	2.7
	TOTALS	**$603,991**	**$104,323**	**$499,667**	**2.6**

Notes: Gross and net installation and equipment costs are estimated and do not replace product specifications and contractor bids.

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

Through its On-Bill Financing Program,[3] 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
- For more information, visit www.sdge.com/obf.

Low-Interest Loans from the 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 August 2011, 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 Oceanside with applying for this loan, if needed. For more program information, contact the California Energy Commission's Special Projects Office, (916) 654-4104, email: 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 Oceanside through the Energy Roadmap Program. Contact your Energy Roadmap coordinator for further assistance.

[3] 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.

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2

Demonstrate Emerging Energy Technologies

In addition to energy assessments and improving efficiency at city government facilities, Oceanside 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 Oceanside 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

The City of Oceanside maintains a fleet of approximately 400 vehicles that range from sedans and pick-up trucks to fire engines and other heavy-duty trucks. The City can achieve transportation-related energy savings through actions that promote fuel conservation, efficiency, and an increased use of clean, alternative fuels in its vehicle fleet.

The City of Oceanside has established a Green Fleet Policy aimed at acquiring the most fuel efficient and lowest emissions vehicles available.

Oceanside has recognized that fleet operations contribute significantly to its total greenhouse gas (GHG) emissions, and has established a green fleet policy to reduce emissions and fueling costs through the acquisition of efficient and alternative fuel vehicles. Through the implementation of this policy, the City hopes to reduce GHG emissions from its fleet by ten percent in fiscal year (FY) 2012-2013 compared to the FY 2007-2008 baseline. This section offers tools and information that can help Oceanside reach this goal.

In addition, special attention is given to the Electric Vehicle Project at the end of this section. It is the largest deployment of electric vehicles (EV) and EV charging infrastructure in U.S. history and approximately $40 million worth of equipment and services have been dedicated to the San Diego region. The City may want to consider participating in the EV Project as there are still opportunities to become an EV Project participant or host publicly accessible EV charging infrastructure as of this writing.

California Goals for Transportation Fuels

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 allocates grant funds through the AB 118 Program to help address barriers to the production and deployment of alternative fuels, vehicles, and infrastructure. Millions of dollars are available annually through 2015, for which the City and local businesses can apply. Additional information is provided later in this section.

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 billon 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

Oceanside's Fleet

The City has recognized that it is important to have accurate information on vehicle use and fuel consumption in order to track progress towards fleet-related energy goals. It has developed a Green Fleet Policy Matrix to track key indicators related to its efforts to green the fleet. The matrix compares the total number of fleet vehicles, vehicle miles traveled, fuel consumption, and other indicators to the FY 2007-2008 baseline. The following table, *City of Oceanside Green Fleet Matrix,* summarizes some of the information included in Oceanside's Green Fleet Policy Matrix.

The City of Oceanside has made progress in reducing the size of its fleet, although its average fuel efficiency has diminished marginally. Total fuel consumption and GHG emissions have declined slightly. By continuing to monitor these indicators, the City can assess its progress towards its green fleet goals. As more efficient and alternative fuel vehicles replace older, less efficient vehicles, information on the fuel consumption and emissions reductions from such vehicle replacements can be added.

Online Fleet Planning Tools

The U.S. Department of Energy's Petroleum Reduction Planning Tool (www.afdc.energy.gov/afdc/prep/), at the Alternative Fuels and Advanced Vehicles Data Center, could supplement Oceanside's current fleet management system by evaluating and calculating petroleum reductions through three categories of reduction measures including 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). A petroleum reduction goal (e.g., 10 percent savings) can be set and the free online tool can identify potential savings based on the fleet information entered and petroleum reduction measures selected.

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 GHG emissions. The user can compare each vehicle to itself or other models using different variables such as the lease term and average annual mileage scenarios. The user chooses the applicable fuel cost for their location and selects vehicles individually or by category.

Oceanside also can reduce fuel use by encouraging employees to use the vehicles efficiently. This includes trip planning, efficient driving habits, and routine maintenance. Specific tips are described in **Appendix E**.

City of Oceanside Green Fleet Matrix

Number of Vehicles	2007-2008	2010-2011	Change
Light Duty Vehicles	341	306	-35
Medium Duty Vehicles	45	44	-1
Heavy Duty Vehicles	44	49	+5
Total Number of Vehicles	**430**	**399**	**-31**
Total Number of Alternative Fuel Vehicles	**37**	**78**	**+41**
Average Fuel Efficiency[1] (Miles per Gallon)			
Light Duty Vehicles	12.9	11.5	-1.4
Medium Duty Vehicles	8.2	9.3	+1.1
Heavy Duty Vehicles	4.8	4.4	-0.3
Overall Average Fuel Efficiency	**8.6**	**8.4**	**-0.2**
Average Annual Miles Per Vehicle			
Light Duty Vehicles	11,090	10,628	-462
Medium Duty Vehicles	7,531	7,724	+193
Heavy Duty Vehicles	6,353	5,824	-529
Overall Average Annual Miles Per Vehicle	**8,325**	**8,059**	**-266**
Annual Fuel Consumption (Gallons)			
Light Duty Vehicles	292,815	281,749	-11,066
Medium Duty Vehicles	41,184	36,379	-4,805
Heavy Duty Vehicles	58,848	64,312	+5,464[2]
Total Fuel Consumption	**392,847**	**382,439**	**-10,408**
GHG Emissions ($MTCO_2e$)[3]	**3,811**	**3,715**	**-96**

Notes:
1. In recent years, more stringent air pollutant regulations caused the fuel efficiency of diesel trucks to decline.
2. Due to an increase in large fire apparatus.
3. $MTCO_2e$ = metric tons of carbon dioxide equivalent. Assumes emissions factors of 19.42 lbs CO_2/gallon for unleaded gasoline and 22.38 lbs CO_2/gallon for diesel. Total CO_2 emissions were multiplied by 1.057 to estimate total GHG emissions (in CO_2e).
Source: California Center for Sustainable Energy

Alternative Fuels for Fleet Applications

Alternative fuel and vehicle selection may depend on several factors including:

- Vehicle cost
- Availability and proximity of refueling infrastructure
- Availability of grants and tax credits
- Whether new purchase or retrofit/conversion is being considered
- Vehicle maintenance

Descriptions of each type of alternative and information on the availability of alternative fuel vehicles for a variety of fleet applications are provided in **Appendix E.** Opportunities specific to Oceanside's fleet for cost-saving vehicle replacements are described below.

Vehicle Replacement: Alternative Fuel Options for Oceanside

SANDAG partnered with the California Center for Sustainable Energy (CCSE) to provide an assessment specific to Oceanside's fleet and vehicle replacement protocols. The City schedules vehicles for replacement based on a point system factoring in age, mileage, maintenance history, and condition. Vehicles that have attained 15 points are considered ready for replacement. Based on those factors, more than two-thirds of the current city fleet will have reached the projected replacement age by 2015. Consideration for fuel efficiency and alternative fuel options during the vehicle procurement process could help Oceanside achieve its green fleet goals.

The following *Vehicle Replacement and Savings* table identifies suitable alternative fuel replacement options for pick-up and medium-duty trucks, full-size vans, SUVs, and passenger vehicles. Police patrol cars, construction equipment, and specialty medium/heavy-duty vehicles were not included in this analysis. The table summarizes the number of vehicles replaced each year, the annual savings following the three year replacement schedule, and the associated petroleum displaced. CCSE identified vehicles that exceeded 15 points which could be replaced over the next two years, and vehicles in the 12-15 point range, which could be replaced in the third year.

Through vehicle replacements, Oceanside has the potential to annually save an estimated $90,000 and displace 16 percent of its diesel and gas use compared to FY 2010-2011.

Potential Vehicle Replacements and Savings for Oceanside

Vehicle Type	Fuel Tech[1]	Number of Vehicles Replaced			Annual Savings per Vehicle	Annual Savings all Vehicles	Petroleum Displaced Annually (gallons)
		Year 1	Year 2	Year 3			
Sedan	HEV	--	13	17	$833	$24,979	6,314
Sedan	CNG	--	4	5	$846	$7,618	3,600
Van	CNG	--	6	--	$965	$5,790	3,000
Truck: Half-ton	LPG	24	--	10	$555	$18,862	22,667
Truck: One-ton	LPG	14	--	4	$594	$10,700	18,000
Truck: Medium-duty	CNG	--	6	3	$1,963	$17,670	8,000
SUV	HEV	--	4	6	$1,078	$10,775	2,250
Total		**38**	**33**	**45**		**$96,393**	**63,831**

Note:
1. HEV = hybrid electric vehicle, CNG = compressed natural gas, LPG = liquefied petroleum gas/propane
Source: California Center for Sustainable Energy

Based on current fuel prices, an annual fuel savings of over $90,000 could be realized after three years, based on an aggressive vehicle replacement schedule. This replacement schedule also represents a reduction in total gasoline and diesel usage of more than 16 percent compared to FY 2010-2011. In CCSE's analysis, propane (LPG) powered pick-up trucks showed the greatest petroleum displacement while compressed natural gas (CNG) medium-duty trucks had the greatest annual monetary savings per vehicle. These findings were a result of the sheer number of pick-ups and a high cost differential between diesel and CNG fueling for medium-duty trucks. Savings per vehicle can vary depending on vehicle usage and fuel costs; however, total savings are generally higher when more alternative fuel vehicles are acquired. Greater numbers could maximize investments in staff training and fueling infrastructure for alternative fuel vehicles.

Fuel Availability in Oceanside

Additional fueling infrastructure would be needed for widespread adoption of alternative fuel vehicles. In particular, for the vehicle replacements described in the table above, Oceanside would need additional electricity, CNG, and propane infrastructure. Sites currently exist in Oceanside for charging/fueling of these vehicle types with the potential for additional EV charging stations through the EV Project, described later in this chapter. The *Summary of Alternative Fuel Infrastructure Availability* table includes information on alternative fuel infrastructure and **Appendix E** contains detailed information on the location of these sites and the costs of installing each type of fueling infrastructure.

Summary of Alternative Fuel Infrastructure Availability		
Fuel	**Existing Fueling/Charging Sites within Ten Miles of Oceanside's City Operations Center[1]**	**Availability of Production-Distribution Infrastructure**
Electricity	The EV Project is deploying up to 1,450 level 2 electric vehicle chargers across San Diego County through June 2012.	Existing electricity grid and distributed energy sources.
Biodiesel	Oceanside has piloted the use of B20 for all its diesel powered vehicles, including fire equipment. Biodiesel has been delivered to two of three municipal fueling sites and used without incident.	Storage and blending terminals, port off-loading sites needed. Local producer is New Leaf Biofuel.
CNG	One public and six private access stations. Several private sites are school districts or transit that may allow a municipality to use its stations.	Existing natural gas pipeline network
Propane (LPG)	Three public access sites, two in Oceanside, one in Carlsbad.	Existing
E85	Two public and one private station are located near the city.	Storage and distribution facilities needed in order to scale-up consumption
LNG	No fueling sites in or near the city	Existing, but West Coast off-shore LNG terminals needed
Hydrogen	One private access site is located on Camp Pendleton.	Significant investment required

Source: http://afdc.energy.gov/afdc/locator/stations/.
Notes:
1. Site names, addresses, and distances are provided in **Appendix E**.
2. Contact your Energy Roadmap coordinator for information regarding the installation of publicly available EVSE at city government sites.

State Grants and Rebates

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

The CEC 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 is another funding priority with allocations for electric chargers, CNG station upgrades/expansions, and additional E85 dispensers.

CCSE manages ARB's Clean Vehicle Rebate Project (CVRP) (www.energycenter.org/cvrp), which provides rebates of up to $2,500 for light duty battery electric and plug-in hybrid vehicle purchases. CCSE received $15 million in funding for FY 2011-2012. If funding is depleted, applications for eligible CVRP vehicles will be placed on a waiting list in anticipation of future funding. The *CVRP Rebate Amounts for Light-Duty Vehicles* table summarizes the rebates available.

CVRP Rebate Amounts for Light-Duty Vehicles

Vehicle Class	Maximum Incentive
Light duty zero emission vehicles (ZEV)	$ 2,500
Zero emission motorcycles (ZEM)	$ 900
Neighborhood electric vehicles (NEV)	$ 900

Note: Eligible vehicles and associated rebate amounts are subject to change. Visit the CVRP program site for eligible vehicle models and associated rebates.

Rebates for commercial vehicles including trucks and buses are available through ARB's Hybrid Truck and Bus Voucher Incentive Project (HVIP) (www.californiahvip.org). As of November 2011, the HVIP estimated fund balance was over $11 million. A summary of the incentives available is provided in the *ARB HVIP Voucher Amounts for Trucks and Buses* table below.

ARB HVIP Voucher Amounts for Trucks and Buses

Gross Vehicle Weight in Pounds (lbs.)		Base Incentive[1]
8,501 – 10,000 lbs.[2]	Plug-in hybrid	$ 10,000
	Zero emission	$ 15,000
10,001 – 19,500 lbs.		$ 15,000[3]
19,501 – 33,000 lbs.		$ 20,000
33,001 – 38,000 lbs.		$ 25,000
> 38,000 lbs.		$ 30,000

Notes:
1. The first HVIP-eligible vehicle purchased by a fleet and ARB-certified hybrid vehicles above 14,000 lbs. are each eligible for an additional $5,000 voucher.
2. This weight category includes plug-in hybrid and zero-emission vehicles only.
3. Zero-emission commercial vehicles in this weight category are eligible for $20,000.

The Electric Vehicle Project

The San Diego region was selected to take part in the largest EV rollout in U.S. history, through the EV Project (www.theevproject.com). 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, CCSE, the Port of San Diego, UCSD, Qualcomm, SDG&E, SANDAG, and other stakeholders. The EV charger installations are underway and expected to be completed by June of 2012. Many public sites throughout the region have been identified as potential locations for EV charging stations including marinas, restaurants, community and regional shopping centers, large venue entertainment centers, transportation corridors, schools, hotels, airports, convenience retail, and retail shopping.

Through the EV Project, about 2,000 electric vehicle (EV) chargers can be installed around San Diego County before June 2012. Up to 1,000 will be at publicly-accessible sites and about 1,000 will be at residences.

Over the next five years, most major automobile manufacturers are expected to introduce plug-in electric vehicles. Beginning in December 2010, two major automobile manufacturers began selling EV sedans, the *Nissan LEAF* and *Chevrolet VOLT*, in San Diego County. All vehicles will be compatible with 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 document.

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” (i.e., fleet location or residence) EV charger and installation at little to no cost. 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@ecotality.com.

4

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.

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 Oceanside 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 Oceanside (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 North 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

5

Promote Commuter Benefits to City Employees

The City of Oceanside can achieve transportation-related energy savings by promoting commuter programs to its employees. Such programs provide alternative transportation options to driving alone and incentives to use them. Support services from the SANDAG iCommute Program are offered at no cost to the city as part of your Energy Roadmap. Services are customized to address the specific needs of your city and its employees. Needs are identified through city staff direction, a survey of employee commute habits and preferences, and the mapping of employee commutes so that iCommute can recommend to the city which commute choices may make sense to promote to staff.

Regional commuter options for Oceanside include: *transit, ridesharing, biking, and teleworking.*

Based on the initial needs assessment, the city can make informed decisions as to how it may like to promote alternative transportation options to its employees. iCommute offers resources and tools to design and implement a customized commuter program, also known as a transportation demand management (TDM) program. Promoting commuter programs can be an easy and cost-effective way to reduce petroleum consumption in the city. There are many ways that Oceanside can take part, many of which are for little or no cost to the city.

How Commuter Programs Work

An employee commuter program provides workers with alternative transportation options, as well as incentives for using them. A custom program could include everything from helping connect employees who want to carpool or vanpool with one another, to offering flexible work schedules and telework options, to providing free or reduced-cost transit passes.

Some of the programs are offered free by SANDAG. Others are inexpensive or come with subsidies. For example, SANDAG provides a $400 per month subsidy for qualifying vanpools to manage the costs of the van rental. Additionally all agencies participating in the Energy Roadmap program will be offered the opportunity to participate in a new SANDAG sponsored *Carpool Incentive Pilot Project* that will provide $50 per month per carpooler for three months. The *Guaranteed Ride Home Program* is another SANDAG incentive that makes choosing an alternative commute easy. Commuters who carpool, vanpool, take an Express Bus, ride the COASTER, walk, or bike to work three or more

times a week are eligible for a taxi ride or rental car to get home from work, for just a $3 co-pay, in the event of emergency or unscheduled overtime.

Commute Cost Calculator ***provides commuters with the actual cost of their current commute and the potential savings from choosing alternative forms of transportation.***

Benefits of Participation

Alternative transportation is good business. Cities can:

- Measure and reduce their petroleum consumption and carbon footprint
- Add commuter benefits to employee compensation packages at little or no cost
- Utilize tax benefits and provide cost savings on payroll taxes
- Reduce employee parking and/or workspace demand
- Enhance retention and recruitment
- Receive points toward Leadership in Environmental and Energy Design (LEED) certification

Commuter Program Recommendations for Oceanside

According to a 2009 survey conducted by iCommute, the City of Oceanside offers a commuter benefit program that includes the pre-tax benefit, preferred parking spots for carpools or vanpools, bike lockers and showers onsite, and flexible work schedules. The following no-cost to low-cost commuter benefits could be offered to enhance and expand the City's existing commuter program:

Transit and Ridesharing

1) **Discounted Transit Passes (Minimal cost to City of Oceanside):** Employer have the option of subsidizing part of their employees' commuting costs and allowing employees to pay for the remainder with pre-tax dollars. To further encourage participation in transit, the City of Oceanside could offer discounted monthly transit passes as part of the overall benefits package for city employees. A small discount can go a long way to encourage employees to take transit.

2) **Carpool Incentive Pilot Project (No cost to City but requires a staff member to administer):** iCommute began seeking applicants for a Carpool Incentive Pilot Program in October 2011. Participants in the pilot will receive $50 per month per carpooler for three months. The incentive will be provided by iCommute but distributed through the participating employer. All agencies involved in the Energy Roadmap program have been invited to apply to take part.

3) **Regional Vanpool Program (No cost to City):** For City employees that have longer distance commutes (20 miles or more), vanpools are a comfortable, cost-effective, and convenient way for groups of seven to 15 people to share their commute. Employees or the employer can lease a vehicle through one of iCommute's contracted vanpool vendors and receive a $400 per month subsidy to help offset the cost of the lease. On average, vanpool participants cut their commute costs by many hundreds of dollars per year. Typical savings to each passenger:

   - 20 miles round-trip commute = $1,000/year
   - 50 miles round-trip commute = $4,400/year

4) **Guaranteed Ride Home (No cost to City)** Commuters who carpool, vanpool, take an Express Bus, ride the COASTER, walk, or bike to work three or more times a week and track their trips in the iCommute online system have a safety net with the Guaranteed Ride Home program. iCommute will provide a taxi or rental car, for just a $3 co-pay, in the event of:

   - Personal or family illness or emergency
   - Unscheduled overtime (with a supervisor's approval)
   - Your rideshare partner is unavailable

Bicycle Encouragement

1) **Pre-Tax Benefit for bicycle commuters (No cost to City):** the 2008 Energy Act added "qualified bicycle commuting reimbursement" to the list of qualified transportation fringe benefits. As of 2009, any employer may reimburse an employee up to $20 per month tax free for reasonable expenses incurred by the employee for the purchase of a bicycle and bicycle improvements, as well as repair and storage if the bicycle is regularly used for travel between the employee's residence and place of employment. The Employer's Tax Guide to Fringe Benefits IRS code 132(f) details this benefit and is available from the IRS at www.irs.gov/pub/irs-pdf/p15b.pdf.

2) **Bike to Work Month** – The City of Oceanside currently hosts a Bike to Work Day pit stop. The City could expand their participation by joining the Bike to Work Month Corporate Challenge, offering bike commuter safety courses to employees (sponsored and coordinated by iCommute), and promoting Bike to Work activities to employees.

Teleworking

Teleworking allows eligible employees to work from home or a remote location one or more days per week. Telework has specific benefits for employees and employers that take advantage of the program. Employees benefit from telework by cutting their commute and related costs, achieving a live-work balance, reduced stress, and improved job satisfaction. As an added benefit, less time spent on the road due to teleworking also means less traffic congestion and a more reliable commute for those who commute. Benefits to employers include improved productivity, reduced overhead, improved retention and recruitment, and reduced absenteeism. Sample telework policies, agreements, and forms are provided as **Appendix F**.

Oceanside can promote and participate in annual events like Bike to Work Day, Dump the Pump and Rideshare Week.

Getting Started

The *Commuter Benefit Starter Kit for Employers* is provided by iCommute and lays out the tools you need to get started, including an overview of your options, sample commuter program policies, promotional materials, and tax benefit information. The complete Commuter Benefit Starter Kit is available for download at iCommutesd.com.

iCommute can help the city survey its employees to identify local commuting habits and preferences.

Additionally the iCommute on-line system offers employers and employees free and convenient tool that makes it easy to access, evaluate, and compare transportation choices. The "Commute Cost Calculator" provides commuters with the actual cost of their current commute and the potential savings from choosing alternative forms of transportation. "RideMatcher," a tool within the Web site, helps commuters securely find a vanpool, carpool, or bicycle partner. The "TripTracker" tool allows commuters to log their commute trips on an interactive calendar that calculates the financial and environmental costs of their daily commute patterns.

The site also allows your agency to create customized incentive programs for employees that participate in your commuter program. TripTracker's convenient reporting feature details how many of your employees are participating and measures the agency's and employees' financial and environmental savings, including the amount of air pollution and greenhouse gas emissions avoided, cost savings, and fuel savings. A sample TripTracker report is provided as **Appendix F**.

Commuter Program Support Offered by iCommute

At any time, the city can request assistance from iCommute to engage city employees in alternative transportation options and to establish municipal commuter policies. Actions could include:

- Meet with iCommute and go over free online tools and functionality of the iCommute Web site
- Establish a point person (usually a representative from Human Resources) to work with your iCommute representative to set up your employer network in icommutesd.com.
- Survey staff on their current commute habits and preferences (provided for free by iCommute).
- Map your employees' commutes so you know which commute choices make sense to promote to staff (provided for free by iCommute).
- Formalize a commuter benefit policy that outlines the commuter benefits that the city can offer (iCommute has samples for you).
- Once you've decided which commute choices to promote and/or incentivize, have iCommute give a presentation to staff and/or hold an iCommute registration drive. Registration drives are most effective when the message comes from agency leadership, via letter or e-mail message.
    - North County Transit District also is available for free on-site transit trip planning.
- Include commuter benefit information in new employee orientation packets and link to iCommute on your intranet site.
- Participate in and promote iCommute annual events such as Rideshare Week, Bike to Work Day, and Walk and Bike to School Day. Join the Rideshare Week and Bike to Work Corporate Challenges to showcase your commitment to sustainable commute choices. (A sample proclamation for National Bike Month is included in **Appendix F**.)

"TripTracker" enables commuters to log their commute trips on an interactive calendar that calculates the financial and environmental costs of their daily commute patterns.

For more information or to continue developing and implementing your commuter program, contact your Energy Roadmap coordinator or Antoinette Meier, SANDAG iCommute, (619) 699-7381, amei@sandag.org.

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6

Leverage Planning and Development Authority

Local governments can promote energy efficiency in their communities by leveraging their authority over local land use and development activity. This chapter addresses ways in which energy considerations can be integrated into local land use and transportation planning. These energy efficiency and/or petroleum reduction measures are consistent with regional and state energy policies, and fall under the following categories.

1. **Smart growth development policies**
2. **Energy efficient building upgrades**
3. **Clean and efficient transportation options**

The built environment is comprised of private development and land uses, roadways and pedestrian facilities, the open space system, and other public facilities such as parks and schools. The energy demand of the built environment is strongly dependent upon the design and orientation of individual buildings; the distribution and density of development; the siting, sizing and design of transportation infrastructure; and other public facilities.

The Planning Role of Local and Regional Governments

Regional energy consumption is strongly related to urban form – i.e., the physical features and composition of the built environment. Local governments and SANDAG can influence the built environment, including the amount of energy consumed, through regulations, incentives, collaborative planning, and infrastructure investments that affect land use patterns, the transportation system, and other public facilities.

State law specifically vests local governments with authority over land use and development activities within their jurisdictions in accordance with their general plans and other policy documents that address land use, circulation (transportation), housing, public facilities, environmental management (open space, conservation, safety, scenic highways), and economic development. Local governments develop regulations and programs to implement their planning policies and goals. Oceanside already uses its planning and development review authority to promote sustainability and energy

savings through policies in its *Pedestrian Master Plan*, *Bicycle Master Plan*, *Coast Highway Vision and Strategic Plan*, and *Economic Development Dashboard*.

Sustainable Communities Strategy

Pursuant to Senate Bill 375 (Steinberg 2008), SANDAG and regional planning agencies across the state are required to develop a Sustainable Communities Strategy (SCS) in order to reduce greenhouse gas (GHG) emissions from passenger vehicles consistent with targets set by the California Air Resources Board (CARB). The following table, *GHG Reductions in the SANDAG Sustainable Communities Strategy*, presents the assigned CARB targets and the projected GHG reductions and vehicle miles traveled (VMT) reductions projected in the SCS. On October 28, 2011, SANDAG became the first metropolitan planning organization (MPO) in the state to adopt a SCS as part of its 2050 Regional Transportation Plan (RTP). SANDAG is using this strategy as the foundation for updating its Regional Comprehensive Plan (RCP), which provides a long-term strategic planning framework for the region based on "smart growth" and "sustainability," these principles are described in the next section.

GHG Reductions in the SANDAG Sustainable Communities Strategy

Average Weekday Per Capita CO_2 and VMT Reductions for Cars and Light Trucks from 2005

Target Year	CARB Target	GHG	VMT
2020	7%	14%	12%
2035	13%	13%	10%
2050	N/A	10%	7%

Notes: CO_2 = carbon dioxide.
CARB identifies CO_2 as the GHG whose concentration is being most affected directly by human activities. CO_2 also serves as the reference to compare all other GHGs.

SB 375 also provides an opportunity for streamlining the California Environmental Quality Act (CEQA) process for certain local redevelopment projects, if they are consistent with the SCS as either a "residential/mixed use project" or as a "Transit Priority Project" (TPP). Environmental review of a residential/mixed use project consistent with the SCS would not need to consider growth-inducing impacts or increases in GHG emissions from passenger cars and light trucks. For a TPP, the project would need to be at least 50 percent residential with a density of at least 20 units per acre and be within a ½ mile of a major transit stop or a high quality transit corridor included in the 2050 RTP.

SANDAG, working closely with all local jurisdictions, will undertake an update to its RCP over 2012 and 2013, including a review of smart growth designated areas in relation to the SCS. **Appendix G** contains larger definitions for what could qualify for CEQA streamlining.

1. Smart Growth Development Policies

Coast Highway Vision and Strategic Plan
Promote environmentally and economically sustainable smart growth - transit, pedestrian, bicycle, multi-generational-friendly infill development.
Planwide Objective

Smart growth can be defined as a compact, efficient, and environmentally sensitive pattern of development that provides people with additional travel, housing, and employment choices by focusing future growth away from rural areas and closer to existing and planned job centers and public facilities, while preserving open space and natural resources. Smart growth policies fit into the broader context of sustainability by guiding development to preserve access to natural resources. The principles of sustainability are based on achieving conservation goals and objectives in three broad areas: a prosperous economy, a healthy environment, and social equity. With the adoption of SB 375, the state is recognizing the influence that smart growth policies have on long term sustainability.

Past planning of the built environment typically featured segregation of land uses and transportation systems that favored the automobile over biking, walking, and public transit. Communities in which people walk, bike, and ride public transit are typically characterized by a more concentrated, diverse and synergistic mix of land uses and a distinct sense of place, created by safe, generous and attractive sidewalks, well-defined and well-connected bike paths and lanes, street-adjacent buildings that accommodate pedestrian-oriented uses, a variety of housing types and choices, and a rich, interconnected street grid that controls the speed and volume of vehicle traffic.

In addition to promoting transportation choices, smart growth land use patterns help protect open space, wildlife habitat, watersheds, and agricultural land. Oceanside is one of seven cities that make up the Multiple Habitat Conservation Program, whose goal is to conserve approximately 19,000 acres of habitat, of which roughly 8,800 acres (46 percent) are already in public ownership, and contribute toward the protection of more than 80 rare, threatened, or endangered plant and animal species in North Western San Diego County. Smart growth planning in Oceanside supports protection of regionally important biological resources including coastal lagoons and estuarine

habitats, riparian habitats along the San Luis Rey River and Pilgrim Creek, and remaining wetland and upland habitats scattered throughout the city.

Oceanside has been integrating smart growth principles into local plans for several redevelopment areas. Two examples are the existing Coast Highway neighborhood nodes around the Oceanside downtown transit center and the potential community center surrounding the El Camino Real SPRINTER Station. These sites have been included in a regionwide Smart Growth Concept Map, last updated by SANDAG in 2008.

1. **Oceanside Downtown Transit Center** (Downtown Oceanside at Mission Avenue and North Coast Highway) is in the heart of the Oceanside redevelopment area and is served by multiple public transit lines including the COASTER, SPRINTER, Amtrak Surfliner, Metrolink, North County Transit District bus lines, and Greyhound. The surrounding land uses include high-density residential and commercial land uses with three mixed use projects currently under construction.

2. **El Camino Real SPRINTER Station** (El Camino Real and Oceanside Boulevard) is an existing SPRINTER station with planned high frequency local bus service. The area is generally characterized by commercial and industrial uses, as well as underutilized commercial and industrial lands. Low-density residential is located south of the station. Smart growth opportunities could be concentrated in the area of the underutilized commercial and industrial lands.

Future development in Oceanside is expected to be concentrated along the City's transit corridors, which include Coast Highway, Oceanside Boulevard, Mission Avenue, and Vista Way. Redevelopment and infill within these transit corridors will place City's residents and the workforce within walking distance of transit, shopping, recreational facilities and other public amenities, thereby reducing vehicle miles traveled and associated energy use and GHG emissions.

Funding for Smart Growth Planning

SANDAG manages the *TransNet* Smart Growth Incentive Program (SGIP), which funds transportation and transportation-related infrastructure improvements and planning efforts that support smart growth development. The SGIP awards two percent of the annual *TransNet* revenues to local governments through a competitive grant program. For more information on the SGIP, and upcoming funding cycles, visit www.sandag.org/smartgrowth.

In addition, **Appendix G** contains sample policies that encourage smart growth development. Oceanside could determine which measures are most appropriate for the City and consider these measures in any future general plan update or in its development review process. This appendix also contains the existing and potential "smart growth opportunity areas" that the City provided SANDAG for inclusion in the adopted Smart Growth Concept Map (2008).

2. Energy Efficient Building Upgrades

The *California Long Term Energy Efficiency Strategic Plan*, the California Public Utility Commission's (CPUC) framework for energy efficiency in the State, describes local governments' authorities and opportunities for promoting energy efficiency in new and existing buildings. Through the Energy Roadmap program, SDG&E can offer free energy code training for local code inspectors. In addition, local governments can promote residential programs like *Energy Upgrade California (EUC)*, which help homeowners undertake building retrofits that save energy and reduce monthly utility bills. The EUC program also provides local workforce training.

Additionally, **Appendix H** provides a series of energy-related policy measures that reflect the goals of State agencies like the California Energy Commission (CEC), CPUC, and Office of the Attorney General. The appendix includes further information on EUC and financing mechanisms for energy efficient building retrofits.

Codes, Permits, and Compliance

Local governments are required to adopt and enforce building codes and regulate development activity within their jurisdictions. The *California Long Term Energy Efficiency Strategic Plan* identifies the following areas where local government authority can impact energy use in new and existing buildings:

1. Ensuring compliance and enforcement of the Title 24 energy code for residential and commercial buildings.
2. Adopting and implementing voluntary and mandatory "reach" (enhanced energy efficiency) codes beyond Title 24's energy requirements (and potentially other "green" requirements).
3. Supporting highly efficient projects that voluntarily exceed minimum energy codes through favorable fee structures, fast-tracked permitting and other innovative and locally appropriate approaches.
4. Enacting ordinances with point-of-sale or other approaches that spur efficiency actions in existing, privately-owned buildings.
5. Applying efficiency-related "carrots" and "sticks" using local zoning and development authority.

If the City has interest in learning more about code, permit and compliance options, the Energy Roadmap coordinator and SDG&E can provide assistance. For example, the City can receive free energy code compliance training for local building inspectors, or receive materials needed to consider adoption of voluntary reach codes, which go beyond the traditional minimum code requirements to make buildings more energy efficient.

Energy Upgrade California

Energy Upgrade California (EUC) (www.energyupgradeca.org) is a statewide umbrella under which all energy-saving building retrofit programs are housed. The program coordinates federal, state, utility, and local retrofit program outreach, incentives, training, and qualifications. Locally, the California Center for Sustainable Energy (CCSE) is collaborating with SDG&E to coordinate the EUC program. CCSE manages additional EUC rebates offered by some of the local governments in San Diego County; as well as workforce training that qualifies local contractors to perform the work.

Currently, the cities of San Diego and Chula Vista, and the County of San Diego, have used a portion of their Energy Efficiency and Conservation Block Grants (EECBG) to augment state and utility rebates available to their residents. As the EUC program grows, more local governments may choose to formally support the EUC through passage of resolutions or dedication of funds (if available) for increased rebates to their residents. More information about energy codes and the EUC are provided below.

The EUC program promotes a “whole house” performance approach to efficiency that focuses on the elements within a home that affect energy use, how they interact, and how they influence health and safety. This is instead of a “widget” approach that targets only one building aspect at a time, such as lighting, air conditioners, or insulation. To determine the best approach for improvements to an individual home, a home energy assessment is done. The assessment can pinpoint exactly what upgrades can be made, the costs, and the rebates or incentives that may apply. The home assessments and retrofit projects are performed by licensed building contractors that have been trained for the EUC program. (More information on workforce development programs is discussed in Chapter 8.)

3. Clean and Efficient Transportation Options

Transportation Demand Management

Transportation demand management (TDM) is the application of strategies to reduce single occupancy vehicle travel by encouraging alternative transportation options. Including TDM measures in the development review process may offer developers creative, affordable, and effective ways to reduce vehicle trips and their impacts. TDM measures also contribute toward Leadership in Energy and Environmental Design (LEED) certification.

The SANDAG iCommute program offers free assistance to San Diego regional businesses and agencies in establishing and implementing customized TDM policies and programs that reduce traffic congestion, fuel use, air pollution, and GHG emissions. Active transportation choices like biking and walking provide a healthier alternative to driving and reduce petroleum consumption and pollution locally In addition, smart growth land use patterns, like those characterized in the SANDAG Smart Growth Concept Map, accommodate biking and walking as mobility choices. They typically contain a diverse mix of land uses, complemented by sidewalks, bike paths, a variety of housing types, and an interconnected and rich street grid that can slow and disperse vehicle traffic.

Coast Highway Vision and Strategic Plan
Enable corridor development by optimizing urban connectivity, capitalizing on transportation/ mobility options and rationalizing parking.
Planwide Objective

To meet the goals of its bike plan and implement bike and pedestrian network improvement projects, Oceanside can apply for grant funds through the *TransNet* SGIP, discussed previously, and the Transportation Development Act (TDA) *TransNet* Bicycle and Pedestrian grant programs. SANDAG allocates funds under the TDA and *TransNet* local sales tax program to support bicycle and pedestrian transportation projects through a competitive process on an annual basis.

Alternative Fueling Infrastructure

One of the six early actions identified in the SANDAG *Regional Energy Strategy* is to support the planning for electric vehicle charging and alternative fueling infrastructure. Siting alternative fueling stations, electric charging points, vehicle maintenance facilities, and other infrastructure in coordination with vehicle availability is important to provide customers like fleet managers and the general public with a level of certainty that infrastructure will be available to support their investment in an alternative fuel vehicle.

Currently, Oceanside is home to a number of alternative fueling stations including electric vehicle charging at Mossy Nissan, ethanol fueling at two Pearson Fuels stations, and propane fueling at U-Haul and Ferrallgas. Additionally, Waste Management of North County is developing a CNG fueling station at its facility in Oceanside.

Support for alternative fuel infrastructure can also help attract private investment associated with alternative transportation to the region. The San Diego Regional Clean Fuels Coalition, along with its members including the County, SANDAG, local cities, the Airport Authority, the Port of San Diego, and CCSE, have committed to addressing the need for more fueling choices across the region. A complete list of both publicly and privately available alternative fueling stations is included in **Appendix E**.

Plug-in Electric Vehicles and Charging Stations

The San Diego region is at the forefront of plug-in electric vehicle (PEV) deployment with the highest per capita amount of PEV purchases and electric vehicle supply equipment (EVSE) installations in the United States. By the end of 2011, the EV Project, described in Chapter 3, will have installed up to 1,000 home (or fleet) Level 2 EVSE; 1,000 publicly accessible Level 2 EVSE at commercial properties, city streets, municipal buildings, and San Diego destinations like Balboa Park; and 30 DC fast charge EVSE along the region's transportation corridors.

Several barriers have been identified through the region's early experiences, which need to be addressed in a strategic and coordinated manner to enable widespread regional PEV adoption and efficient deployment of EVSE. Assisted by a California Energy Commission grant, SANDAG and CCSE have been forming a working group of local governments, regional agencies, SDG&E, and other stakeholders to address these PEV issues. The San Diego Regional Electric Vehicle Infrastructure Working Group (San Diego REVI) is scheduled to begin in March 2012 and have bimonthly meetings over a two-year period. Oceanside has agreed to participate on San Diego REVI.

Sample mandatory and voluntary ordinances for including TDM, alternative fueling infrastructure, and other transportation-related measures in development projects are provided in **Appendix I**.

7

Market Energy Programs to Local Residents, Schools, and Businesses

This chapter provides Oceanside with internet links to existing energy-efficiency and fuel-saving resources that the city could include on its municipal Web site, newsletters, and E-Alerts. This would enable Oceanside to serve as a conduit to its constituents on energy-saving residential, commercial, and school programs. The city could help promote messages of sustainability that foster a greater local understanding of the connection between energy/fuel use and environmental impacts. The city also could become a local government partner with national energy-saving educational campaigns like *ENERGY STAR* and *WaterSense*.

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

As part of the Green Oceanside campaign, the City could engage in outreach activities that support energy efficiency and clean transportation. Green Oceanside helps the local community be better stewards of the planet by recycling, reducing waste, composting, conserving water, conserving energy, and preventing water pollution and litter. In terms of conserving energy, SDG&E could offer free energy code compliance workshops for local code inspectors. Oceanside's annual Green Week program could expand on energy conservation education with materials and/or involvement from CCSE, SDG&E, and SANDAG's iCommute program.

The following five outreach mechanisms are provided as sample ways in which the city can engage residents and businesses in energy programs:

1. Provide summary descriptions and links to SDG&E programs and rebates and related resources on the City of Oceanside Web site

2. Include articles about opportunities to save energy with links to existing programs and community resources, like the California Center for Sustainable Energy (CCSE), in city newsletters (print or e-mail) or similar media.
3. Provide educational materials on saving energy at city venues such as the permit desk, parks and recreation areas, libraries, and the civic center. SDG&E, CCSE, and SANDAG iCommute can provide materials about programs and services for residents and businesses.
4. Invite SDG&E, SANDAG iCommute staff, and CCSE to host an information booth on energy-saving programs or commuter programs at community events like Oceanside's annual Green Week.
5. Help coordinate presentations by SDG&E and SANDAG iCommute staff to community organizations such as a neighborhood planning group or local chamber of commerce.

Comprehensive Energy Program Websites

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 (SDERC) Online Workshop Calendar	The Center for Sustainable Energy (CCSE) and SDG&E conduct hundreds of expert-facilitated seminars on a broad spectrum of energy topics at the SDERC. The online calendar lists workshops from both organizations. www.energycenter.org/attend
SANDAG 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

Local Educational Resources

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 (SDERC) 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 SDERC is located at the California Center for Sustainable Energy at 8690 Balboa Avenue, Suite 100, San Diego, CA 92123. Call (858) 244-1177 or visit www.energycenter.org. ERC hours are from 8 a.m. to 5 p.m. weekdays excluding national holidays.

Resources available from the SDERC 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 SDERC.
- 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.

SANDAG iCommute Programs for the Community

In addition to supporting city-employee commuter programs like those identified in Chapter 5, Oceanside could help educate its residents and local businesses about alternatives to driving alone in the community. The city could:

- Provide information on commuting resources at the Civic Center, libraries and other public sites, and/or on municipal Web sites and newsletters. Include links to the 511 transit trip planner, iCommute online ridematching service, and an online cost-of-commute calculator.
- Participate in annual events and campaigns that encourage commute alternatives to driving alone such as Bike to Work Day, Dump the Pump, Rideshare Week, Walk and Bike to School Day:
    - Adopt proclamations and celebrate these events in your community. Samples are provided in **Appendix F.**
    - Participate in the Bike to Work and Rideshare Week Corporate Challenges to demonstrate your commitment to sustainable commute choices.
    - Host a Bike to Work Day pit stop
- Recognize and honor local commuters and employers who have demonstrated a commitment to sustainable commute choices.

Through SchoolPool, parents can receive a free helmet for each child who bikes and a free baseball cap for each child who walks. All children who bike or walk can receive reflective backpacks, and safety vests are provided for parent leaders.

SANDAG SchoolPool Program

SchoolPool is iCommute's free ridematching service for parents of children who attend the same school anywhere in the region. With this safe and secure service, parents are matched with other parents in their neighborhood who are interested in sharing the driving responsibilities or would like to have their kids bike or walk to school with other students and a parent leader. Oceanside could:

- Encourage the School District and/or individual schools to enroll in SchoolPool, a secure online ridematching service administered by SANDAG for parents with children in kindergarten through 12th grade. SchoolPool can be a transportation solution for parents who live in districts where school bus services have been cut.
    - SchoolPool enables parents of children who attend the same school and live in the same neighborhood to share responsibilities of getting their children to and from school.
    - SchoolPool helps parents connect their children with bike buddies and "walking school buses" – groups that ride their bikes or walk to school together with one or more adults.
    - Parents who use SchoolPool to find bike buddies and walking school buses can receive a free helmet for each child who bikes and a free baseball cap for each child who walks. All children who either bike or walk can receive reflective backpacks. Safety vests are provided for parent leaders.

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. More information is available at www.energystar.gov.

The U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy (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 Promotional Partners

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. More information is available at www.epa.gov/watersense.

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. For more information on promotional partners, visit www.epa.gov/watersense/partners/promotional.html.

Energy Programs for Residential and Business Audiences

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
SDG&E Solar Initiative	www.sdge.com/environment/solar/sdSolarInitiative.shtml
Net Energy Metering	www.sdge.com/nem/
Energy and Water	
20-Gallon Challenge	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. http://20gallonchallenge.com/
Smart Grid	
SDG&E Smart Grid Program	Smart meter and smart grid technologies are being deployed throughout the San Diego region and across the state. www.sdge.com/smartgrid
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/
SDG&E Clean Transportation	www.sdge.com/cleantransportation/
The EV (Electric Vehicle) Project	www.theevproject.com/
SANDAG SchoolPool Program	www.icommutesd.com/Schoolpool
Clean Vehicle Rebate Project	www.energycenter.org/index.php/incentive-programs/clean-vehicle-rebate-project

Energy Programs and Assistance for Local Businesses

Energy-Efficiency and Demand Response

Business Incentives	www.sdge.com/business/rebatesincentives
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/vendor/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-assesed-clean-energy

Energy-Efficiency and Demand Response

Advanced Home Program	www.sdge.com/builderservices/programs/advancedhomes/index.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
Tax Credits	www.energytaxincentives.org/

New Construction Programs

Advanced Home Program	www.sdge.com/builderservices/programs/advancedhomes/index.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

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	Available water efficiency product rebates. www.socalwatersmart.com/
Clothes Washer Rebate Program	www.20gallonchallenge.com/programs_residential.html or (888) 376-3314

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8

Support Green Jobs and Workforce Training

The city of Oceanside 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.sandiegoatwork.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 North County Coastal Career Center is located in Oceanside at 1949 Avenida del Oro, Suite 106, zip code 92056. Center hours are Monday through Friday from 8 a.m. to 5 p.m. Call (760) 631-6160 or visit www.rescare.com/locations/nccc/index.php.

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, Oceanside has set a framework for continued efforts to save energy in local government operations and in the community. The City will have access to continued support on energy issues through the duration of SANDAG's Energy Roadmap Program, which is scheduled to end in December 2014. 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 2015. Using its Energy Roadmap as a guide, Oceanside 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 Oceanside 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/.

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. Mr. Stoner also maintains a Web site (www.EEcoordinator.info) with links to resources, webinars, and funding opportunities.

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

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

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