

City of La Mesa Energy Roadmap



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Energy Roadmap Program

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Energy Roadmap for the City of La Mesa

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Acknowledgements and Program Contacts

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Introduction

This energy management plan, or “Energy Roadmap,” prepared by SANDAG in consultation with city staff, provides a framework for La Mesa to identify ways to save energy in government operations and in the community, resulting in municipal cost savings and benefits to the environment. These wide-ranging, cost-effective opportunities to save electricity, natural gas, and transportation fuel include:

The La Mesa Energy Roadmap charts a path to saving energy in government 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 vehicles, and transportation demand management strategies, 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

The City of La Mesa has already undertaken a number of actions related to energy reduction and sustainability. These actions include energy efficiency retrofits at many city facilities, streetlight and traffic light retrofits, as well as fleet vehicle upgrades. The City also encourages green building practices, waste reduction and diversion, and smart growth policies in its community.

In 2010, La Mesa 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 GHG emissions. The City accomplished this through its participation in the San Diego Regional Climate Protection Initiative, spearheaded by

Local Governments for Sustainability USA (ICLEI). La Mesa continues to participate in the Climate Protection Network Group formed by ICLEI, and in 2007, the City Council approved a resolution endorsing the U.S. Mayor's Climate Protection Agreement. The Energy Roadmap identifies measures that La Mesa could include in a climate action plan.

The Energy Roadmap identifies measures that La Mesa can use in climate action planning.

La Mesa's history of action, along with completion of the Energy Roadmap, has enabled the city to apply for a Beacon Award. The Beacon Award recognizes and celebrates California cities that reduce GHG emissions and energy use, adopt policies and programs to address climate change, and promote sustainability. La Mesa is now a Beacon Award Participant and has received a certificate for interim accomplishments based on best practice activities in areas of sustainability.

By building on its existing energy-saving efforts and taking advantage of some or all of the opportunities identified herein, La Mesa can continue to demonstrate leadership in energy efficiency and work toward greater sustainability in municipal operations and throughout the community – saving money for taxpayers, households, and businesses, keeping the air clean, supporting green jobs, and improving quality of life for everyone.

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 GHG emissions. La Mesa 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 La Mesa to lead by example with its buildings and facilities, vehicles, and energy usage practices:

1. **Save Energy in City Buildings and Facilities**
2. **Demonstrate Emerging Energy Technologies**
3. **Green the City Vehicle Fleet**
4. **Develop Employee Knowledge of Energy Efficiency**
5. **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 local residents and businesses. Opportunities for influence vary widely, from public education to adopting policies and implementing programs to save energy.

La Mesa is now a Beacon Award Participant and has received a certificate for interim accomplishments in sustainability.

Energy use can be a major expense for households and businesses, and it is a predominant source of air pollution and GHG emissions. Saving energy benefits the environment, puts money in the pockets of households and businesses, and supports growing economic opportunities including well-paying green jobs.

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

- 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 such as utilities and gasoline
- Developing or assisting to implement measures to reduce GHG emissions from government operations and community activities
- Integrating sustainability, energy efficiency, or GHG reduction measures into a general plan, specific plan, or zoning ordinance
- Using government operations to demonstrate the feasibility of energy efficient and sustainable practices to local 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 that deal with energy issues
- Staying on top of the latest developments, programs, and trends in energy efficiency
- Applying and qualifying for future funding opportunities related to energy efficiency

The La Mesa Web site can be a portal for local residents and businesses to access energy-saving programs and rebates.

About the Energy Roadmap Program

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

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 2050 Regional Transportation Plan/Sustainable Communities Strategy (2011); Regional Energy Strategy (2009), which serves as the San Diego region's energy policy blueprint; and Climate Action Strategy (2010), SANDAG's first ever guide on climate change. The 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 pilot projects undertaken through the SANDAG Sustainable Region Program with the California Center for Sustainable Energy for 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.

Save Energy in City Buildings and Facilities

Energy is a major operating cost for local governments. The City of La Mesa is committed to energy efficiency in its facilities, as evidenced by its newly-built police station, which is expected to achieve Leadership in Energy and Environmental Design (LEED) certification. La Mesa also replaced its older street lights with high efficiency induction street lights, reducing the City's street light energy costs by approximately half. By evaluating energy usage in municipal buildings and facilities (sites) and identifying energy-saving opportunities, La Mesa can further 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
- Costs and payback to the city to undertake the energy-saving projects

Energy Assessments

In 2011-2012, 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.

La Mesa could save over \$35,000 each year from energy efficiency upgrades and rate changes identified at municipal sites.

Energy Report Cards were prepared for thirteen municipal sites (listed below) in late 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.

- | | |
|--------------------------------|-------------------|
| ▪ City Hall | ▪ Sunset Gym |
| ▪ Community Center | ▪ Public Works |
| ▪ Police Department | ▪ Fire Station 11 |
| ▪ Senior Center | ▪ Fire Station 12 |
| ▪ Nan Coutts Cottage | ▪ Fire Station 13 |
| ▪ Library and U.S. Post Office | ▪ City Parks |
| ▪ Municipal Pool | |

Benchmarking is a useful tool to judge a site's energy performance compared to the national or state averages. Two online tools were employed to help determine how "good" or "bad" a site was performing. SDG&E's *Energy Waves* program provided historical energy usage and will enable the city to continue monitoring energy consumption/ site performance online. The U.S. Environmental Protection Agency's (EPA) *Portfolio Manager* program identified how each site compared against national averages for similar facilities, and provided climate change information in carbon dioxide equivalent (CO₂E).

For climate planning, La Mesa can track the performance of its buildings year over year, in terms of energy used and greenhouse gas emissions produced.

The preliminary energy assessments indicate that most La Mesa municipal sites are performing more efficiently than 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, nine sites were identified in a priority site list and targeted for additional evaluation in the form of comprehensive energy audits. The site list is included as **Appendix B**.

- City Hall
- Public Works
- Municipal Pool
- Sunset Gym
- Jr. Seau Field
- Fire Stations 11-13
- Police Department

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 here and are included as **Appendix C**.

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

La Mesa has the potential to realize over \$17,000 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 8. In addition, the city has the potential to save almost \$19,000 each year on its utility bills by switching to a relatively new outdoor lighting rate at Jr. Seau Field.

Regarding energy-saving retrofit projects, La Mesa could undertake upgrades at most of its audited municipal sites through SDG&E's On-Bill Financing Program.¹ This 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 the 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 8.

La Mesa could save almost \$19,000 each year on its utility bills by switching utility rates for Jr. Seau Field.

Recommissioning City Hall

Through an in-depth analysis of energy usage at La Mesa's City Hall, annual bill savings of nearly \$7,000 were estimated if the building underwent recommissioning.

A recommissioning program identifies savings opportunities through the systematic evaluation of electrically powered systems and the subsequent implementation of no- and low-cost measures. This process can result in:

- Improved system operation and lower energy costs
- Reduced maintenance and repair costs and extended equipment life
- Improved occupant comfort and productivity for tenants and employees

For City Hall, this would likely result in major HVAC upgrades, including an upgrade of the air handler serving the east side of the building, replacing pneumatic controls throughout the building with digital controls, and including the boiler and hot water pump in any new control system. These upgrades would achieve electricity, natural gas and GHG savings while improving the building's performance and operations. For further details, refer to the energy audit report in **Appendix C**.

Lowering City Utility Bills at Jr. Seau Field

An analysis was conducted to estimate potential savings for the City if outdoor area lighting was switched to one of SDG&E's optional outdoor lighting rate schedules. The Jr. Seau Field was found to have potential annual bill savings of almost \$19,000 by

¹ For local governments to qualify for SDG&E's on-bill financing program, retrofit projects must have an estimated cost of at least \$5,000 and no more than \$250,000, to be repaid within ten years.

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.² The rate analyses are provided in **Appendix C**.

Potential Savings by Energy Conservation Measure

Location	Measure	Annual Savings for City			
		Electricity (kWh)	Demand (kW)	Bill Savings	Greenhouse Gases (MTCO ₂ e)
City Hall	Vending Misers	2,563	0	\$263	0.84
	Recommission	39,610	11.3	\$6,970	19.81
Public Works	Hibay Lighting	18,343	7.3	\$1,899	6.05
Municipal Pool	Lighting	2,013	3.2	\$208	0.67
	Pump Controls	32,416	0	\$3,356	10.69
Sunset Gym	Lighting	1,367	0.3	\$141	0.45
Multiple Sites: Fire Stations 11-13, Police Dept.	Replace generator block heaters with heat pumps	27,299	0	\$4,211	9.00
TOTALS		123,584	26.5	\$17,049	4.0

Notes.

1. kWh = kilowatt hours, MTCO₂e = metric tons of carbon dioxide equivalent.

2. Energy assessments included HVAC systems, indoor and outdoor lighting, and building controls.

Energy Conservation Measure Economics

Location	Measure	Gross Project Cost	Total SDG&E Incentives	Net Project Cost	Simple Payback (years)
City Hall	Vending Misers	\$339	\$100	\$239	0.9
	Recommission	\$50,000	\$8,038	\$41,962	6.0
Public Works	Hibay Lights	\$3,910	\$2,300	\$1,610	0.8
Municipal Pool	Lighting	\$4,025	\$426	\$3,599	17.3
	Pump Controls	\$1,200	\$600	\$600	0.2
Sunset Gym	HID Lights	\$1,400	\$200	\$1,200	8.5
Multiple Sites: Fire Stations 11-13, Police Dept.	Replace generator block heaters with heat pumps	\$22,800	\$4,524	\$18,276	4.3
TOTALS		\$83,674	\$16,188	\$67,486	3.4

Note.

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

² 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 change at Jr. Seau Field. Undertake rate change.
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 La Mesa with these implementation steps over the duration of the Roadmap Program (until December 2014).

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 is also available from other agencies like the California Energy Commission. Additionally, Energy efficiency and Conservation Block Grants (EECBG) 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 incentives³ 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/.

³ 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.

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

Through its On-Bill Financing Program,⁴ 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 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, contact your Energy Roadmap coordinator, or 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 February 2013, terms included an interest rate of one-percent fixed, a maximum loan of \$3 million per application, and a maximum loan term of 15 years. Again, EFM Solutions can assist La Mesa with applying for this loan, if needed. For more program information, contact the California Energy Commission's Special Projects Office, (916) 654-4104, e-mail: pubprog@energy.state.ca.us, or www.energy.ca.gov/efficiency/financing.

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

⁴ 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.

2

Demonstrate Emerging Energy Technologies

In addition to energy assessments and improving efficiency in city government buildings and facilities, La Mesa can save energy by using its operations to showcase emerging energy efficient technologies through the SDG&E Emerging Technologies Program. The City also can encourage interested local businesses and residents to demonstrate an emerging energy efficiency technology.

If the municipality or community members living in La Mesa want to host a demonstration, your Energy Roadmap coordinator can arrange for a meeting with SDG&E Emerging Technologies Program staff. SDG&E will provide all of the relevant information, including how to participate, eligible technologies, and any costs to the city or participating business or resident.

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. For more information, contact Nathan Taylor, SDG&E's emerging technologies program manager directly at NTaylor@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 air conditioning (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 heating, ventilation, and air conditioning (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.

Green the City Vehicle Fleet

The City of La Mesa maintains a fleet of approximately 140 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 La Mesa has adopted practices to ensure its fleet is operated as efficiently as possible.

La Mesa has recognized that fleet operations contribute significantly to its total energy use, and has adopted practices to ensure the fleet is operated as efficiently as possible. As part of this effort, the fleet includes four hybrid vehicles that are driven by the City's building inspectors and parking enforcement. La Mesa also has replaced five of its heavier duty trucks with new models that produce significantly less emissions, and the City's fueling facility was upgraded to the California Air Resources Board's (ARB) Enhanced Vapor Recovery 2 specifications to reduce gasoline vapor emissions during fueling. This Roadmap chapter offers tools and information that can support La Mesa's efforts to maintain efficient fleet operations through the use of advanced technology and alternative fuel vehicles.

California Goals for Transportation Fuels

California has adopted several transportation fuel laws and goals, and the California Energy Commission (CEC) has been the responsible agency for the targets shown in the *California Goals for Transportation Fuels* table. In order to meet these goals the state allocates grant funds through the Assembly Bill 118 (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 billion gasoline gallons equivalent (gge) by 2010, 1.6 billion gge by 2020, and two billion gge by 2050
Electric Vehicles in State Fleets	10 percent of light-duty fleet purchases must be zero-emissions vehicles by 2015, and 25 percent by 2020

La Mesa's Fleet

In 2011, the City of La Mesa spent approximately \$350,000 on fuel, dispensing more than 23,000 gallons of diesel and 80,000 gallons of gasoline. Recognizing the importance of data collection to effectively manage fleet operations, the city plans to implement an automated fueling information system that will more accurately track fuel consumption and mileage on a per-vehicle basis. The tracking system can identify vehicles with poor mileage that the city can target for maintenance or eventual replacement. Another fleet management measure that La Mesa has implemented was to outfit some vehicles with deep-cycle batteries and more efficient lighting in order to reduce fuel consumed when idling.

When replacing vehicles, city staff evaluates vehicle duty requirements and selects the most efficient vehicle that can do the job. Hybrid vehicles have been adopted in appropriate applications such as building inspection. Using the fleet information system, the city could track fleet-wide indicators such as total fuel consumption and vehicles miles travelled (VMT) on an annual basis. This data would help monitor progress in greening the city fleet. As more efficient and alternative fuel vehicles replace older, less efficient vehicles, La Mesa should see reduced costs.

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 La Mesa'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., VMT reductions), and alternative fuels (e.g., vehicles that run on electricity, compressed natural gas). A petroleum reduction goal (e.g., 10% 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.

La Mesa 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 D**.

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

Vehicle Replacement: Alternative Fuel Options for La Mesa

SANDAG partnered with the California Center for Sustainable Energy (CCSE) to provide an assessment tailored to La Mesa's fleet and vehicle replacement protocols. La Mesa evaluates vehicles for replacement based on a number of factors including age, mileage, maintenance history, and condition. Consideration of high efficiency and alternative fuel options during the vehicle procurement process could help La Mesa achieve green fleet goals. The City recently replaced or retrofitted many of its heavy duty diesel vehicles to meet ARB requirements.

Hybrid and alternative fuel vehicles could offer savings of \$500 to \$2,000 a year based on typical vehicle usage in La Mesa.

The following *Potential Vehicle Replacements and Savings* table identifies alternative fuel replacement options that could be suitable for the pick-up and medium-duty trucks,

SUVs, and passenger vehicles in La Mesa’s vehicle fleet. The assessment identifies potential fuel and cost savings on an annual and lifetime basis using mileage information. CCSE identified vehicles based on high annual mileage and fuel consumption. Because most city vehicles operate in a relatively small geographic area, yearly mileage and fuel savings were found to be less than what has been identified for fleets operating in larger geographic areas. For the purpose of this assessment, emergency response vehicles and construction equipment were not included, but your Energy Roadmap coordinator can provide additional information regarding these vehicles on request.

Potential Vehicle Replacements and Savings

Vehicle Type	Fuel Tech ¹	Annual Mileage	Gallons Fuel Reduced/ Displaced ²	Estimated Annual Savings	Lifetime Savings (10 years)
Sedan	Hybrid	10,000	217	\$860	\$8,600
SUV	Hybrid	6,000	343	\$1,330	\$13,300
Truck- Half Ton	LPG	9,200	920	\$1,500	\$15,000
Truck- Half Ton	CNG	9,200	920	\$2,010	\$20,100
Truck- 3/4 Ton	LPG	6,000	1,000	\$1,470	\$14,700
Truck- 3/4 Ton	CNG	6,000	1,000	\$2,190	\$21,900
Truck Med. Duty	LPG	3,700	974	\$1,120	\$11,200
Truck Med. Duty	LPG	3,700	974	\$1,890	\$18,900

Note:

1. Hybrid = hybrid electric vehicle, CNG = compressed natural gas, LPG = liquefied petroleum gas/propane
 2. Reducing/ displacing the use petroleum-based fuels is a goal of state policy and the federal Energy Policy Act and Energy Independence and Security Act.
 Source: California Center for Sustainable Energy

The vehicle replacement analysis used current fuel prices, mileage, and fuel consumption of La Mesa vehicles, details of which are provided in **Appendix D**. In general terms, the replacement of sedans and SUVs with suitable hybrid options amounted to an estimated annual savings of \$500 to \$1,300 per vehicle. Replacements of pick-up and medium duty trucks with propane fueled versions could result in annual savings of up to \$1,500 per vehicle, and over \$2,000 per vehicle for compressed natural gas (CNG).

Propane and CNG vehicles can cost between \$8,000 and \$20,000 more than their gasoline- or diesel-fueled counterparts and can require additional fueling infrastructure. The substantial fuel savings that would be achieved from large trucks, some of the biggest consumers of fuel, could offset the higher purchase costs within a few years. La Mesa should carefully evaluate all fuel types and available incentives when vehicle replacement decisions are made. California offers rebates and incentives for alternative fuel vehicles and infrastructure: currently available rebates are outlined later in this chapter.

Fuel Availability in La Mesa

Additional fueling infrastructure is needed for widespread adoption of alternative fuel vehicles. In particular, for the vehicle replacements described above, La Mesa would need additional electricity, CNG, and propane infrastructure. Currently available refueling sites near La Mesa are identified in the *Summary of Alternative Fuel Infrastructure Availability* table below. **Appendix D** contains details on each location 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 La Mesa's Public Works Yard ¹	Availability of Production-Distribution Infrastructure
Electricity	The EV Project has deployed over 1,000 level 2 electric vehicle chargers across San Diego County through June 2013.	Existing electricity grid and distributed energy sources.
Biodiesel	B5 available at a cardlock facility in El Cajon and B20 is available in San Diego. Other blends could be delivered to the City.	Storage and blending terminals, port off-loading sites needed. Local producer is New Leaf Biofuel.
CNG	Three public and one private access station.	Existing natural gas pipeline network.
Propane (LPG)	Two public access sites, one in Lemon Grove and one in San Diego.	Existing.
E85	Two public stations 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	No fueling sites in or near the city	Significant investment required.

Source: <http://afdc.energy.gov/afdc/locator/stations/>.

Notes:

1. Site names, addresses, and distances are provided in **Appendix D**.
2. Contact your Energy Roadmap coordinator for information regarding the installation of publicly available EVSE at city government sites.

State Grants and Rebates

The CEC and ARB offer alternative transportation grants and rebates through 2015 under the AB 118 Program. Funding is allocated annually and the FY 2011-2012 budget for the CEC AB 118 Program (www.energy.ca.gov/altfuels/) is about \$100 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 (\$6.5 million), as well as light- and medium-duty vehicles that use propane (\$5.2 million). Incentives amounts are displayed below in the table *CEC Gaseous Vehicle Buydown Incentives*. Expanding alternative fuel infrastructure is another funding priority with allocations for electric chargers, CNG station upgrades/expansions, and additional E85 dispensers.

CEC Gaseous Vehicle Buydown Incentives

Gross Vehicle Weight in Pounds (lbs.)	Natural Gas	Propane
Up to 8,500	\$3,000	\$3,000
8,501 – 14,000	\$8,000	\$6,000
14,001 – 26,000	\$20,000	\$10,000
26,001 & greater	\$26,000 ¹	NA
	\$32,000 ²	NA

Notes:

1. With fuel tank capacity less than 190 Diesel Gallon Equivalent (DGE)
2. With fuel tank capacity of at least 190 Diesel Gallon Equivalent (DGE)

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. 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 2012, the HVIP estimated fund balance was over \$16 million. A summary of the incentives available is provided in the *HVIP Voucher Amounts for Trucks and Buses* tables below. In addition to the rebates described in the tables, the first three vouchers redeemed by a fleet per funding year are eligible for the following additional voucher amount:

- \$2,000 per vehicle if below 8,500 lbs.,
- \$5,000 per vehicle if 8,501 to 10,000 lbs., and
- \$10,000 per vehicle if over 10,000 lbs.

HVIP Voucher Amounts for *Zero-Emissions* Trucks & Busses

Gross Vehicle Weight (in pounds)	
5,001 – 8,500 lbs	\$12,000
8,501 – 10,000 lbs	\$18,000
10,001 – 14,000 lbs	\$30,000
14,001 – 19,500 lbs	\$35,000
19,501 – 26,000 lbs	\$40,000
> 26,000 lbs	\$45,000

HVIP Voucher Amounts for *Hybrid* Trucks & Busses

Gross Vehicle Weight (in pounds)	
6,001 – 8,500 lbs (plug-in hybrids only)	\$8,000
8,500 – 10,000 lbs (plug-in hybrids only)	\$10,000
10,001 – 19,500 lbs	\$15,000
19,501 – 33,000 lbs	\$20,000
33,001 – 38,000 lbs	\$25,000
> 38,000 lbs	\$30,000

Regional Electric Vehicle Planning

San Diego Regional Electric Vehicle Infrastructure Working Group

Through a CEC grant, SANDAG and CCSE established the San Diego Regional Electric Vehicle Infrastructure Working Group (REVI) to develop a readiness plan for the San Diego region. The ability for public agencies to site plug-in electric vehicle chargers on public property is one barrier that REVI is developing a template and best practice to address. La Mesa participates on REVI.

La Mesa participates in regional readiness planning for plug-in electric vehicles.

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.

Many public sites throughout the region were identified as potential locations for EV charging stations including restaurants, community and regional shopping centers, large venue entertainment centers, transportation corridors, schools, hotels, airports, convenience retail, and retail shopping. Over the next five years, most major automobile manufacturers are expected to introduce plug-in electric vehicles. All vehicles will be compatible with the standardized EV chargers installed through the EV Project.

4

Develop Employee Knowledge of Energy Efficiency

Developing employee knowledge of energy efficiency is another way for La Mesa to promote energy savings in city government operations and throughout the community.

Overview

This chapter identifies free educational seminars and trainings available to city employees through the SDG&E Energy Innovation Center (EIC), located in Clairemont Mesa. Energy code training for planners, permit checkers and building inspectors is taught regularly. In addition to the EIC, local colleges and universities host educational programs and professional certifications in energy management. If La Mesa staff is interested in training opportunities, your Energy Roadmap coordinator can help facilitate participation and assist with related enrollment costs.

Getting Started

As a first step in identifying educational, training, and certification opportunities, the city is asked to please identify the following:

- Staff positions or employees that could benefit from energy-related workshops and trainings such as those listed in this section
- Other workshops or trainings of interest (even if not listed here)
- Workshops or trainings that La Mesa may be interested in hosting at a city facility

SDG&E conducts hundreds of expert-facilitated seminars on a broad spectrum of energy topics at the EIC. Workshop costs are covered by California utility customers under the auspices of the California Public Utilities Commission unless otherwise posted. An RSVP is generally requested for workshops to ensure that adequate space and food are provided. For more information, contact seminars@sdge.com.

The following table identifies quarterly workshops offered at the EIC as well as energy-related training and certification programs that could benefit city employees.

Free Educational Seminars		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	Layperson
Best Practices and Programs	▪ ENERGY STAR best practices ▪ Rebate programs	Planning, public works, city administration
Online Workshop Calendar	To view upcoming workshops, visit www.seminars.sdge.com .	
Training and Certification Programs		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 and 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. 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® Professional Credentials	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 training for a LEED® Professional Credential.	City administration, planning, facilities, public works, environmental services

Promote Commuter Benefits to City Employees

The City of La Mesa 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 the Energy Roadmap program. Services are customized to address the specific needs of the 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 which commute choices may make sense to promote to staff.

Regional commuter options for La Mesa include: *transit, ridesharing, and biking.*

Based on the initial needs assessment, La Mesa 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 greenhouse gas emissions and petroleum consumption. There are many ways that La Mesa 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, 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 were offered the opportunity to participate in a *Carpool Incentive Pilot Project*. 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.

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 LEED certification

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

Commuter Program Recommendations for La Mesa

La Mesa is well served by transit (trolley and bus) and has adequate bicycle infrastructure and amenities. Based on an assessment of the local transportation options available and discussions with city staff, iCommuter has prepared the following TDM recommendations for consideration in a commuter benefit program. Recommendations that would help reduce traffic congestion from employee commutes focus on:

- Transit benefits
- Ridesharing Incentives
- Bicycling pre-tax benefit

Transit and Ridesharing

- 1) Pre-Tax Benefit (No cost to city):** Employers can take advantage of employee and employer payroll tax savings offered through the IRS's Commuter Fringe Benefit Program (IRS Section 132(f)). The IRS allows employers to offer employees the opportunity to set aside a portion of their salary, pretax, to pay for transit and vanpooling, up to \$245 per month per employee (in 2013). Employers benefit by not paying payroll taxes on that money, while in effect adding value to their employee's compensation package. 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) Discounted Transit Passes (Minimal cost):** Employers also 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, La Mesa 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. Employers can buy transit passes in bulk at a discounted rate through the Metropolitan Transit System EcoPass Program and pass those savings along to employees:

Annual Quantity	Average Monthly Users	Monthly Discount
1) 300 to 1,200 passes/ year	25 – 100	10 percent
2) 1,201 to 4,800 passes/year	101 – 400	20 percent
3) 4,801 and above passes/year	401 plus	25 percent

- 3) Carpooling (No cost to city):** iCommute ran a Carpool Incentive Pilot Project in 2012. Participants received \$50 per month per carpooler for three months. While SANDAG determines how to continue offering incentives, easy online tools remain to enable commuters to start or join a carpool. RideMatcher is a simple and secure way to find carpool partners online. It is a database of thousands of commuters from across the region.
- 4) 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 (VPSI and Enterprise) 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
- 5) 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 up to three times per enrollment year by registered participants, 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.
- 2) **Bike to Work Month (No cost to city):**
To encourage bicycle commuting, La Mesa could host a Bike to Work Day Pit Stop, participate in the Bike to Work Month Corporate Challenge, and/or offer bike commuter safety and education courses for employees (sponsored and coordinated by iCommute).

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

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. Benefits to employers can include improved productivity, reduced overhead, improved retention and recruitment, and reduced absenteeism. If the City is interested in telework options, your Energy Roadmap coordinator can provide additional information.

Getting Started

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

iCommute can help La Mesa survey its employees to identify local commuting habits and preferences.

Additionally, the iCommute on-line system offers employers and employees a 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 can detail how many city employees are participating and can measure the city’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 in **Appendix E**.

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

Commuter Program Support Offered by iCommute

At any time, La Mesa can request assistance from iCommute to engage its 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 www.icommutesd.com.
- Survey staff on current commuting habits and preferences (provided for free by iCommute).
- Map employee commutes to determine which commuting choices may 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.*
- 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 E.**)

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, Antionette.Meier@sandag.org.

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.

La Mesa is using its planning and development review authority to promote sustainability and energy savings in its current General Plan update (GPU). Other city initiatives include its Sustainable Building Policies

that state that, “All newly constructed or renovated city facilities and buildings shall strive to meet a minimum LEED Silver rating and exceed current State of California Title 24 Energy Code requirements.” La Mesa also promotes walkable communities through its Walkability Plan (2006), University Avenue Revitalization Plan, and Sidewalk Master Plan (2008). For a listing of these various activities related to sustainability and climate protection, see **Appendix F**.

2012 La Mesa General Plan Update
“A city that is an environmental leader in the region through implementation of sustainable principles that maintain and enhance quality of life.”
Conservation & Sustainability Element

General Plan Update

In March 2012, La Mesa released a draft of its Centennial General Plan. The GPU provides a blueprint for growth and development that lays out specific strategies and reflects the community’s values. The Conservation & Sustainability Element contains goals, objectives, and policies related to resource conservation, environmental and public health, economic development, and transportation. This Energy Roadmap supports goals and objectives contained in the draft Conservation & Sustainability Element. Once the GPU’s Environmental Impact Report is certified, the City Council will adopt the updated 2012 La Mesa General Plan.

Sustainable Communities Strategy

Pursuant to Senate Bill 375 (SB 375) (Steinberg 2008), SANDAG and regional planning agencies across the state are required to develop a Sustainable Communities Strategy (SCS) in order to reduce 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 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 CO₂ and VMT Reductions for
Cars and Light Trucks from 2005

Target Year	CARB Target	GHG	VMT
2020	7%	14%	12%
2035	13%	13%	10%

Notes: CO₂ = carbon dioxide.

CARB identifies CO₂ as the GHG whose concentration is being most affected directly by human activities. CO₂ 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 one-half mile of a major transit stop or a high quality transit corridor included in the 2050 RTP. **Appendix G** contains larger definitions for what could qualify for CEQA streamlining.

SANDAG, working closely with all local jurisdictions, will undertake an update to its RCP as a combined plan with the next RTP and SCS. San Diego Forward: The Regional Plan is being developed over 2013-2015, and will include a review of smart growth designated areas in relation to the SCS. La Mesa will be actively engaged in this process.

1. Smart Growth Development Policies



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.

Objective CS-1.1 of La Mesa’s draft Conservation & Sustainability Element seeks to “create compact, missed-use projects with amenities to enhance the city’s natural setting.” This objective includes policies to “encourage infill along the city’s transit corridors.” Redevelopment and infill within central 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.

La Mesa Sustainable Building Policies

“It is the intent of the City to adopt best design and management practices to reduce storm water run-off, water consumption, traffic congestion, energy consumption, and landfill waste.”

Sustainable Building Policy - Purpose

The Energy Roadmap supports this objective and the City’s existing efforts to integrate smart growth principles into local plans for redevelopment areas. Two examples of planned projects are the Grossmont Trolley Station and the Downtown La Mesa infill development project. These sites were included in a region wide Smart Growth Concept Map, last updated by SANDAG in 2011.

1. **Grossmont Trolley Station** is a joint project by the City of La Mesa, a private sector developer and Metropolitan Transit System to transform the transit stop and parking lot at the Grossmont transit station into a transit-oriented development. The project includes 527 apartment units in three- and four-story structures over two levels of parking and 3,000 square feet of commercial uses oriented toward the transit station. Eighty rent-restricted affordable units are included in the project. Two Trolley lines and five bus routes connect at the Trolley station. Structured parking for 600 spaces will support the parking needs of the transit station. Improvements to the transit station include pedestrian access via elevator to facilitate travel between the station and a nearby hospital and medical office complex and a regional shopping center.
2. **Downtown La Mesa** is a combination of existing and planned infill development of residential and commercial uses in the historic La Mesa Village, which is located

adjacent to the downtown La Mesa transit center. A Trolley station and three bus routes serve this neighborhood.

Future development in La Mesa is expected to be concentrated along the city's transit corridors. 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 to the policies articulated in the draft GPU, **Appendix G** contains further sample policies that encourage smart growth development. La Mesa could determine which measures may be appropriate for the City and consider these measures to help implement its current GPU. This appendix also contains the existing and potential “smart growth opportunity areas” that La Mesa provided SANDAG for inclusion in the regional Smart Growth Concept Map (2011).

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.

Objective CS-1.4 of the draft Conservation & Sustainability Element is to “collaborate with partner agencies, utilities, and businesses to support a range of energy efficiency and conservation measures.”

This section of the Energy Roadmap can directly support the achievement of this objective by providing information and resources for La Mesa citizens and decision makers. **Appendix H** provides a series of energy-related policy measures that reflect the goals of state agencies like the California Energy Commission, CPUC, and Office of the Attorney General. The appendix includes further information on EUC and financing mechanisms for energy efficient building retrofits.

2012 La Mesa General Plan Update
“Retrofitting existing buildings can be a low risk investment with long term savings for property owners.”
Conservation & Sustainability Element

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 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

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.

La Mesa Sustainable Building Policies

“The City will provide information about sustainable building and develop sustainable building incentives when feasible.”

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 approach diverges from the traditional “widget” approach to energy efficiency program delivery, which 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 contained in Chapter 8.)

The Energy Roadmap Program can provide materials on Energy Upgrade California for La Mesa’s residents.

The San Diego Regional Energy Partnership (SDREP) has tasked CCSE with continuing several local EUC programs through 2014 that were previously funded through ARRA grants from the City of Chula Vista, City of San Diego and County

of San Diego. Those jurisdictions, along with SANDAG, have dedicated grant funds to the SDREP to provide additional EUC resources to all local jurisdictions in San Diego County. SANDAG’s contribution is to:

“Further develop and support regional Energy Upgrade California (EUC) implementation and the broader existing home retrofit market to facilitate “deep energy retrofits” (both in terms of high energy savings and untapped markets in existing residential buildings) for member jurisdictions.”

La Mesa residents can take advantage of this program to reduce their energy consumption while improving the comfort of their homes, and municipal staff is encouraged to participate in the planning and implementation of these programs through a regional Retrofit Advisory Council (RAC). **Appendix H** includes details about the RAC and the region-wide projects underway through the SDREP.

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 LEED certification.



Conservation & Sustainability Objective CS-3.1 in La Mesa’s draft GPU addresses the need to “facilitate a reduction of automobile dependency in favor of affordable alternative, sustainable modes of travel” and articulates a policy to “encourage businesses, organizations, and residents to participate in the implementation of regional transportation demand management, including carpooling programs.” The following resources can support these policies and objectives

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.

The SANDAG iCommute tools can help La Mesa meet its conservation and sustainability objectives.

To reduce traffic congestion and emissions from the use of vehicles in the city and promote alternative forms of transportation such as walking and bicycling, La Mesa 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. La Mesa is currently finalizing their Bicycle Master Plan and Circulation Element update in accordance with Assembly Bill (AB 1358) (“Complete Streets”) legislation funded by a \$75,000 SANDAG grant awarded in July 2009.

SANDAG recently completed a study, *Integrating Transportation Demand Management into the Planning and Development Process - A Reference for Cities*. The report is available as part of the Smart Growth Toolbox at the following link:
http://www.sandag.org/uploads/publicationid/publicationid_1663_14425.pdf

Parking Management

Parking management, reform and pricing strategies are options to reduce the amount of driving and are primarily implemented at the local government level. Parking strategies can be effective in, and complement, smart growth areas with compact land use patterns and alternative travel options. Parking policies complement many TDM efforts, and normally have included incentives or disincentives for fewer spaces per unit of development (parking maximums rather than minimums), encourage shared parking among land uses (retail and office for example) and/or a fee per parking space.

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, there are no alternative fuel stations located within the City of La Mesa. There are propane filling stations located in Lemon Grove and El Cajon as well as a Mossy Nissan in El Cajon for charging electric vehicles. The nearest biodiesel fueling station is located in San Diego at Pearson Fuel Depot, 5 miles from La Mesa.

Support for alternative fuel infrastructure also can help attract private investment associated with alternative transportation to the region. The San Diego Regional Clean Cities 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 D**.

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. The EV Project, a federally-funded Department of Energy program, brought an influx of residential and publicly accessible EVSE installations to the San Diego region from 2010 to 2012.

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 formed a working group of local governments, regional agencies, SDG&E, and other stakeholders to address these PEV issues and develop a readiness plan for the San Diego region. The San Diego Regional Electric Vehicle Infrastructure Working Group (San Diego REVI) held its kickoff meeting in March 2012, and is holding monthly meetings over a two-year period. La Mesa staff has been participating in REVI meetings. More information on REVI and other PEV planning efforts in the region can be found on CCSE's Plug-in and Get Ready Web site: www.energycenter.org/pluginready.

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

Market Energy Programs to Local Residents, Schools, and Businesses

This chapter provides La Mesa with internet links to existing energy efficiency and fuel-saving resources that the city could include on its municipal Web site and online newsletter. The city could integrate these links into the “Sustain La Mesa” Web site in order to further enable La Mesa to serve as a conduit to its constituents on energy-saving residential, commercial, and school programs. 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

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 La Mesa’s 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 the online newsletter La Mesa FOCUS 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, and/or CCSE to host an information booth on energy-saving programs or commuter programs at community events.
5. Help coordinate presentations by SDG&E and SANDAG iCommute 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 and Training at the Energy Innovation Center	SDG&E conducts hundreds of expert-facilitated seminars on a broad spectrum of energy topics at the Energy Innovation Center (EIC) in central San Diego. The online calendar lists workshops from both organizations and venues. http://www.sdge.com/energy-innovation-center/seminars
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

SDG&E Energy Innovation Center

In January 2012, SDG&E opened the Energy Innovation Center (EIC), which was designed to be one of San Diego's first LEED (Leadership in Energy & Environmental Design) Platinum buildings open to the public. The EIC is a community resource to explore the latest green technologies and learn about energy efficiency. It hosts a variety of workshops and includes a Food Service Demonstration Kitchen that hosts free seminars on energy-efficient cooking, equipment, lighting and food safety.

The EIC is located at 4760 Clairemont Mesa Blvd, San Diego, CA 92117. Call (800) 411-7343 or visit www.sdge.com/eic.

SANDAG iCommute Programs for the Community

In addition to supporting city-employee commuter programs like those identified in Chapter 5, La Mesa 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 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
 - 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(s)
- Recognize and/or honor local commuters and employers who have demonstrated a commitment to sustainable commute choices.

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. La Mesa 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.

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.

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

WaterSense® WaterSense Promotional Partners

WaterSense 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/sustainable-communities-overview/
SDG&E Solar Initiative	http://www.sdge.com/clean-energy/going-solar/solar-rebate-programs
Net Energy Metering	www.sdge.com/nem/
Self-Generation Incentive Programs	www.energycenter.org/index.php/incentive-programs/self-generation-incentive-program

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/
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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
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Clean Transportation and Petroleum Reduction Programs

Clean Vehicle Rebate Project	www.energycenter.org/cvrp
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

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/save-money/no-cost-audits/business-energy-assessment-program
Energy efficiency Seminars	www.sdge.com/training
PACE Financing: CaliforniaFIRST	www.californiafirst.org

New Construction

Savings by Design	www.sdge.com/clean-energy/savings-design/savings-design
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
Energy Upgrade California	EUC is a statewide brand for all energy-saving building retrofit programs. EUC coordinates federal, state, utility, and local retrofit program outreach, incentives, training, and qualifications. Locally, CCSE is collaborating with SDG&E to coordinate the program. www.energyupgradeca.org
PACE and AB 811 Programs	Property Assessed Clean Energy (PACE) or AB 811 programs are intended to give cities and counties the ability to offer low-interest loans for energy efficiency and solar energy projects to commercial and/or residential property owners. *Most residential PACE programs are currently on hold nationwide. Commercial programs are emerging. www.pacenow.org

Energy Efficiency and Demand Response

Advanced Home Program	www.californiaadvancedhomes.com/
Air Conditioning Tune-Ups	www.actimeprogram.com/ProjectCenter/
Summer Saver Program	www.sdge.com/summersaver/
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	http://www.sdge.com/energy-efficiency-survey-0 (800) 411-SDGE (7343)
Lighting Turn in Program	www.sdge.com/lighting
Tax Credits	www.energytaxincentives.org/

New Construction Programs

Advanced Home Program	http://www.californiaadvancedhomes.com/
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New Solar Homes Partnership	http://www.sdge.com/clean-energy/going-solar/applying-solar-rebates
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Low Income Assistance

Residential Rate Assistance Program	www.sdge.com/residential/assistance/assistServCare.shtml
The Energy Team Program	http://www.sdge.com/energy-savings-assistance-program
Programs for Customers with Special Needs	http://www.sdge.com/available-assistance-programs
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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Support Green Jobs and Workforce Training

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

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

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 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



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 (GCCCCD) 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. GCCCCD 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.sandiegomatwork.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.

The nearest One-Stop Career Center to La Mesa is East County Career Center, located at 924 East Main Street, El Cajon, California 92021. More information can be found at <http://eccc.guhsd.net/>.

SDG&E Energy Innovation Center

The Energy Innovation Center (EIC) also hosts a variety of workshops and includes a Food Service Demonstration Kitchen that hosts free seminars on energy-efficient cooking, equipment, lighting and food safety. The EIC is located at 4760 Clairemont Mesa Boulevard, San Diego, CA 92117. Contact (800) 411-7343 or visit www.sdge.com/eic.

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.

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Looking Forward

This Energy Roadmap provides a framework to save energy in government operations and the community. It can support the sustainability components of La Mesa's General Plan Update and complements city climate planning. After participating in the SANDAG Energy Roadmap Program; there could be local, state, and federal funding opportunities for La Mesa to continue energy-saving activities, either on its own or in partnership with SANDAG. These funding sources are described below, followed by non-financial resources.

Energy-Saving Funding Opportunities

Local Government Partnerships with San Diego Gas & Electric

The SANDAG 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 (CCSE). The duration is typically three years, and they are approved by the California Public Utilities Commission (CPUC).

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, La Mesa 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 energy efficiency services, or take 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, and
3. Engage the community on energy efficiency.

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

- Municipal facility retrofits for energy efficiency improvements,
- Strengthened building energy codes and code enforcement,

- Land use planning and design,
- Education and outreach,
- Green building, permit expedite, and fee reduction programs,
- Peer-to-peer best practices and networking,
- Staff training programs, and
- 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 solicitations that support transportation, residential, commercial, agricultural, industrial, institutional energy efficiency, and renewable energy 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. For program opportunities, visit www.energy.ca.gov/contracts/index.html.



CLEAN VEHICLE
REBATE PROJECTSM

Clean Vehicle Rebate Project

The Clean Vehicle Rebate Project (CVRP) is funded by the California Air Resources Board (CARB) and administered statewide by the CCSE. A total of \$45.2 million has been appropriated for FY 2009-2013 to promote the production and use of zero-emission vehicles (ZEV), including electric, plug-in hybrid electric, and fuel cell vehicles. Rebates of up to \$2,500 per light-duty vehicle are available for individuals and business owners who purchase or lease new eligible zero-emission or plug-in hybrid electric vehicles.



California Energy Commission Assembly Bill 118: Alternative and Renewable Fuel & Vehicle Technology Program

Assembly Bill 118 (AB 118): Alternative and Renewable Fuel and Vehicle Technology Program authorizes the California Energy Commission (CEC) to develop and deploy alternative and renewable fuels and advanced transportation technologies to help

attain the state's climate change policies. CEC has an annual program budget of approximately \$100 million to support projects that:

- Develop and improve alternative and renewable low-carbon fuels
- Optimize alternative and renewable fuels for existing and developing engine technologies
- Produce alternative and renewable low-carbon fuels in California
- Decrease, on a full fuel cycle basis, the overall impact and carbon footprint of alternative and renewable fuels and increase sustainability
- Expand fuel infrastructure, fueling stations, and equipment
- Improve light-, medium-, and heavy-duty vehicle technologies
- Retrofit medium- and heavy-duty on-road and non-road vehicle fleets
- Expand infrastructure connected with existing fleets, public transit, and transportation corridors
- Establish workforce training programs, conduct public education and promotion, and create technology centers

Additional information on AB 118 and the associated investment plan can be found on the CEC Web site: www.energy.ca.gov/altfuels.



TransNet: Smart Growth Incentive Program and Active Transportation Grants

The *TransNet* Smart Growth Incentive Program (SGIP) funds transportation-related infrastructure improvements and planning efforts that support smart growth development. The SGIP awards two percent of the annual *TransNet* revenues for the next 40 years to local governments through a competitive grant program to support projects that will help better coordinate transportation and land use in the San Diego region. Additional information on the current funding cycle is available at www.sandag.org/smartgrowth.

The goal of the Active Transportation Grant Program is to encourage local jurisdictions to plan and build facilities that promote multiple travel choices for residents and connectivity to transit, schools, retail centers, parks, work, and other community gathering places. The grant program also encourages local jurisdictions to provide bicycle parking, education, encouragement, and awareness programs that support pedestrian and bicycle infrastructure. More information on current funding opportunities is available at www.sandag.org/active.

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.

The City of La Mesa has already applied for this award and as such, it is designated as a Beacon Award program participant, and is now working toward achieving the first Beacon Award level.



Department of Energy Clean Cities Program

Clean Cities advances the nation's economic, environmental, and energy security by supporting local actions to reduce petroleum consumption in transportation. A national network of nearly 100 Clean Cities coalitions brings together stakeholders in the public and private sectors to deploy alternative and renewable fuels, idle-reduction measures, fuel economy improvements, and emerging transportation technologies. A variety of Clean Cities tools and resources are available on the DOE Web site (<http://www1.eere.energy.gov/cleancities/>). The local affiliate of the DOE Clean Cities program is the San Diego Regional Clean Cities Coalition at www.sdcleanfuels.org.

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 through its Energy Innovation Center



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 Change 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 change planning, contact Susan Freedman at (619) 699-7387, Susan.Freedman@sandag.org or visit www.sandag.org/energy.



SANDAG iCommute Program

The SANDAG iCommute team can assist local governments with staff commuter programs, transportation demand management (TDM) ordinances, online tools, and outreach on alternative transportation options for the commute. Contact Antoinette Meier at (619) 699-7381, Antionette.Meier@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 California Public Utilities Commission's 2010 through 2012 statewide energy-efficiency programs. Like SANDAG is available to you locally, Mr. Stoner is a statewide resource. The statewide coordinator develops and distributes best practices case studies, provides information and examples of energy-efficiency policies and programs, provides materials that may help local governments implement climate action plans, and serves as a resource to help local government energy programs achieve success. Mr. Stoner is housed at the Local Government Commission (LGC) and has been part of the LGC since 1993. He can be reached at (916) 448-1198, extension 309, or e-mail pstoner@lgc.org.

Statewide Energy Efficiency Collaborative

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

- 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 is providing recognition for cities and counties through the Beacon Award

www.sandag.org/energyroadmap



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

