



SANDAG Sustainable Region Program Toolkit

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The SANDAG Sustainable Region Program is a joint effort with San Diego Gas and Electric (SDG&E), the California Center for Sustainable Energy (CCSE), and the California Energy Commission (CEC). It provides technical assistance and staff support to local governments that either have not participated or have participated minimally in regional energy efficiency, renewable and green building programs available.

This Toolkit was developed with assistance from CCSE, SDG&E, and the CEC. It was prepared with the advice and assistance of the SANDAG Energy Working Group and the CEC State Advisory Task Force.

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Introduction to Sustainable Region Program Steps

Energy is a major operating cost for most local governments; it also is a cost that can be mitigated through planning and the creation of standard practices. Local governments can achieve lower energy costs without adversely affecting their staff or their ability to serve their constituents or ratepayers by following the practices outlined in the Sustainable Region Program (SRP).

SANDAG developed the SRP Action Plan and SRP Toolkit as part of its contract with the [California Energy Commission](#) (CEC). The SRP Toolkit was created as a resource to assist a public agency facilitator, like a Metropolitan Planning Organization (MPO) or Council of Governments (COG), with implementing its own SRP. It is a set of “tools” to aid in the development and execution of the SRP, with an emphasis on energy assessment tasks that lead to the installation of energy-saving measures, actual cost savings, and greenhouse gas (GHG) reductions. The SRP supports state mandates for energy planning including California’s preferred loading order. The loading order gives highest priority to energy efficiency measures, followed by renewable energy systems, and clean distributed generation (DG) (like fuel cells and combined heat and power systems) that reduce our demand on the utility grid. If a region’s resource needs or other requirements cannot be met through these measures, then new transmission or utility-scale fossil-fuel-based generation must be developed.

Twelve tasks and four appendices containing templates for completing tasks are included in this Toolkit. Presented in order of implementation, they are:

- Step 1: Financing a Sustainable Region Program for Local Governments
- Step 2: Program Announcement from Agency to Local Government
- Step 3: Sustainable Region Program Questionnaire
- Step 4: Guide to Forming an Energy Team
- Step 5: Kickoff Meeting
- Step 6: Guide to Municipal Building Energy Assessments
- Step 7: Assessment Report Meeting
- Step 8: Funding Conservation Projects
- Step 9: Recommendations Meeting
- Step 10: New Construction Considerations
- Step 11: Policy Considerations
- Step 12: Presentation to City Council or Board
- Appendix A: Program Participation Timeline
- Appendix B: Sustainable Region Program Templates
- Appendix C: Links to Other Toolkits and Guides
- Appendix D: SAMPLE Local Government Energy Assessment Report

Step 1: Financing a Sustainable Region Program for Local Governments

Securing initial funding for the SRP is the first step to a successful program rollout. The SRP Toolkit uses the three methods of financing that SANDAG employed from 2004–present as examples. Step 8 details how local governments can obtain funding for conservation projects and planning.

This section is not intended to identify the myriad of federal, state, and local funding programs available to local governments; other organizations have released guides for this purpose. For example, the [Local Government Commission's Energy Funding Web site](#) (LGC) is a free online resource.

How a Regional Government can Finance the SRP

In its development, the [SANDAG Sustainable Region Program](#) has gone through three different funding iterations. Our experience has led us to recommend the funding mechanism used for the final SRP iteration: a local government partnership with the local utility. Each program funding method is detailed below.

First Iteration (2005–2006):

Pilot City

The [SANDAG Energy Working Group](#) (EWG) requested that a pilot energy efficiency program be developed to assess the effectiveness of a comprehensive energy management approach for local governments. The SRP Pilot pooled existing California Public Utilities Commission (CPUC)-funded program resources from the [California Center for Sustainable Energy](#) (CCSE)¹ and [San Diego Gas & Electric](#) (SDG&E) to provide both technical and policy assistance to the SRP Pilot city. The intended result was to create a comprehensive energy management strategy, facilitate energy savings projects, and assist with optimization of current and potential city policies by creating a service to assist cities that had minimal participation in energy efficiency programs.

The SRP Pilot was able to succeed on a shoe string budget for three reasons:

1. A high level of interest and active participation from the selected city.
2. A strong desire from all parties involved to have the project succeed. In-kind support from the CCSE and SDG&E was provided to fill in any gaps in service not provided through existing CPUC-funded energy programs.
3. A program facilitator capable of leveraging resources from multiple energy saving programs to package them into one delivery mechanism for the city. The facilitator was familiar with the portfolio of energy programs and services available and had the ability to pull in the appropriate resources at the appropriate time. This required a high level of coordination behind the scenes.

Through a Memorandum of Understanding, SANDAG funded the CCSE to develop and implement the Pilot in cooperation with SDG&E. The CCSE, in consultation with SDG&E and SANDAG staff, recommended to the EWG that the City of Carlsbad participate in the SRP Pilot. The EWG selected the city during its March 2005 monthly meeting and the SRP Pilot began.

The City of Carlsbad was responsible for its own staff participation time. This consisted of time for four to six project meetings at key decision points, staff time to allow access to municipal buildings by outside technical staff, and time to prepare and present findings to City Council.

¹ CCSE was formerly called the San Diego Regional Energy Office.

SANDAG staff time (under 5% of one staff person) was covered by its energy planning program. The CCSE Pilot facilitator's time (approximately 30% of one staff person) also was covered by SANDAG. The facilitator served as the primary point of contact; coordinated efforts with the city, multiple SDG&E program staff, and multiple CCSE program staff; and developed the comprehensive plan provided to Carlsbad and the EWG. The SANDAG energy planning budget was funded through member agency dues and an annual contract with SDG&E.

The majority of technical assistance provided by CCSE and SDG&E was covered by existing energy efficiency programs. A minimal amount of technical staff time was required for the SRP Pilot that was not covered by existing programs and it was provided by CCSE at a reduced rate to SANDAG.

Second Iteration (2007–2009)

Pilot Expansion: Four More Cities

In 2006, SANDAG sought funding to expand the SRP Pilot to two additional member cities. The existing energy budget remained constant so there were insufficient funds to continue without external help. SANDAG entered into a 2-year energy planning contract with the CEC that would enable the SRP Pilot to expand. Interest letters were mailed to SANDAG member agencies in September 2007 and the Cities of Poway and Solana Beach were selected to participate beginning in 2008.

With the goal of further leveraging the SANDAG and CEC commitment to an SRP expansion, SDG&E offered staff and consultant support to assist two more local governments during this phase: the Cities of Imperial Beach and Coronado.

In FY 2008, SANDAG dedicated approximately 10 percent (or \$34,000) of its annual energy budget in staff and consultant (CCSE) time to the SRP, with the CEC contract providing an additional \$30,000 in annual funding. The SRP Pilot progressed well during this time. In FY 2009, the SANDAG energy budget decreased to \$239,000, of which the SRP remained at 10 percent of the budget (or \$24,000) plus the approximately \$30,000 from the CEC. The FY 2009 budget and staff constraints caused some stop-start in delivery of services to each of the participating cities. To remedy these barriers, SANDAG sought a dedicated funding source for the SRP.

At the time of the final SRP Toolkit released in April 2009, efforts are completed at the Cities of Solana Beach and Poway, 85 percent done in Imperial Beach and 25 percent done in Coronado.

Third Iteration (2009–2011)

Local Government Partnership with the Investor-Owned Utility

In 2008, SANDAG applied to SDG&E for a Local Government Partnership (LGP) contract to formalize the SRP. The LGPs are part of the public goods charge (PGC) funded programs regulated by the CPUC.

- The "PGC" is line item on ratepayer electric and gas bills.
- Part of the ratepayer-funded PGC goes to energy efficiency programs through each utility.
- Each utility develops an "energy efficiency program portfolio" that the CPUC approves.

- Eighty percent of funds are for utility in-house programs and partnership programs.
- Twenty percent is awarded to third parties to administer energy-saving programs.
- The portfolio of energy efficiency programs are to span January 1, 2009, through December 31, 2011.

SDG&E accepted the SANDAG LGP and has included it in their portfolio of energy programs filed with the CPUC for 2009–2011. The proposed program is expanded in scope, outreach, and budget. The proposed budget is \$1.7 million over three years and will cover several expenses not included in the SRP Pilots. The budget will cover at least two SANDAG staff at 50 percent time, relevant SANDAG staff at lesser levels, and all engineering and technical services previously funded through other energy efficiency programs. The engineering component is expected to be one of if not the highest budget cost. The program will provide services to all SANDAG member agencies. Please note that the CPUC must still approve all energy program portfolios in the state and that process is significantly late. As of the writing of this report, the utilities re-filed their portfolios to the CPUC in March 2009 with the expectation that the CPUC will make its decision before 2010.

Reasons to Apply for Local Government Partnership Funding

Although the aforementioned near-term delays cause some program delivery issues, SANDAG believes that the long-term benefits of an LGP will outweigh any initial difficulties. One of the weaknesses identified in the SRP Pilots has been a sliding timeline for participation and products. This is in part due to the flexibility needed to work across departments at the local government. It also is due to the lack of continuous resources (whether staff or financial) to maintain momentum at each city and participate in available energy efficiency programs. Since technical assistance on new construction and auditing existing buildings has been derived from existing PGC-funded programs, delays can occur. Sometimes there is a wait list for energy programs and services in high demand and the SRP Pilot participants must wait their turn. This then can create delays for subsequent steps in the timeline. Also, staff facilitation time has had to compete with other important projects, so the LGP funding will enable us to maintain dedicated facilitation time to keep the program on schedule.

Sustainable Region Program Need Established Through Pilots

Through lessons learned from the SRP Pilot efforts in 2005–2008, the need for a program that enables local governments that have little or no energy expertise to participate in energy efficiency programs has been reinforced.

To some extent, a few cities in the San Diego region have access to LGP resources (e.g. City of San Diego, City of Chula Vista, and County of San Diego). The SANDAG Partnership will provide a comprehensive and standardized approach to bringing energy saving measures and plans to its member agencies. This will ensure an equitable approach to the opportunities that can be presented to local governments, as well as a deeper set of opportunities from which to create reliable energy savings. There is no such support for the jurisdictions at this current time. The funding of this partnership will enable the partners to deliver significant energy savings that would not otherwise be captured. The partnership will provide training for these municipalities with an objective that some will be able to undertake their own programs in the future.

Step 2: Program Announcement from Agency to Local Government

The initial step in the process is to choose an interested and eligible local government to participate in the SRP. To gauge interest in completing the tasks of the SRP, the agency should send a letter to interested local governments that clearly describes the goals, benefits, and staffing obligations of the SRP. (For a sample announcement, see Appendix B: I. "Program Announcement from Agency to Local Government")

Step 3: Sustainable Region Program Questionnaire

Because the SRP is designed to assist local governments that have not completed significant energy management activities, the selected local government should have:

- No full-time Energy Manager
- Minimal current participation in energy efficiency programs
- Available funds or willingness to finance energy projects
- Staff capacity to manage projects

The questionnaire is designed to elicit information from interested local governments so that the agency can assess candidates' viability for participation in the SRP. (For a sample application questionnaire, see Appendix B, II. "Sustainable Region Program Questionnaire" and III. "Preliminary Assessment Questions")

Step 4: Guide to Forming an Energy Team

When a local government has been selected to participate in the SRP, the next step is to them form a local government energy team (Energy Team). This Energy Team should be comprised of the local government's staff members whose future SRP tasks are described here.

Energy Team Leader (Initial and Main Contact)

- Works with their local government's staff to compile and disseminate instructions, correspondence, data, etc. among all departments.
- Acts as liaison with the agency, contractors, and local government.
- Schedules first energy assessment with local government staff subsequent to identification of buildings with highest energy consumption, highest utility bill or by request. The contractors/engineers/utility staff can assist with this determination (see Facilities/Engineering section).

Management/Engineering

- Assists with identification and definition of (in writing) specific goals for local government. This can be based on internal staff assessments or other local government best practice guides. The goals should address what the local government is looking for in terms of

energy savings and/or other policy to improve local government functions. The agency or its contractor will be available to assist in this process. Goals should be based on a review of existing principles and practices in local government facilities (by technology and by staff), the priorities of top-level decision-makers, and interaction across departments.

- Once a written set of goals is established, works with the agency or its contractor to create a personalized checklist of potential problems/constraints that will help pinpoint where progress/savings/changes can be made.

Facilities

- Allows for straightforward and productive facility energy assessments with access to facilities. Obtains the following data:
 - Meter-facility identifications (ID) for each meter and facility.
 - List of city buildings including consumption data, from highest to lowest.
 - List of any construction/building projects.
 - List of current energy projects and practices.
 - Identification of contact for building access, identify building hours, staff hours.

Finance

- Reviews budgets for energy (electricity and natural gas)
- Identifies structures with high energy costs (potential high consumption). Reviews the rate/tariff structure(s) the city is currently subject to. This information will be reviewed by the agency or its contractor to ensure the city is on the most optimal utility rate schedule. The agency representative should start (or continue) a dialogue with the local government's utility account executive.

Planning

- Identifies existing local government codes that mandate energy practices within the local government's General Plan, Energy Plan (if applicable), and codes and charters (if applicable).
- Creates a list of current practices that promote or impede energy efficiency and conservation strategies and technologies (e.g. energy consumption, building code, procurement, other).

Step 5: Kickoff Meeting

After the Energy Team is formed, the agency representative should schedule an initial meeting to introduce the agency, local government, and contractor Energy Team members to each other and

inform the Energy Team of first steps in the SRP process. (For a sample kickoff meeting agenda, see Appendix B. IV. “Kickoff Meeting Agenda”)

Step 6: Guide to Municipal Building Energy Assessments

At the initial meeting, Energy Team members should designate the appropriate Facilities Team member to work with the agency’s Energy Engineer (or a contractor) on energy assessments. The Energy Engineer makes an assessment of the energy consumption at a site using currently installed systems to make recommendations for improvements to energy efficiency, conservation, GHG emission reductions and renewable potential, called Energy Conservation Opportunities (ECO).

- Several assessment types exist and each equips the Energy Team Leader for different kinds of decision-making. Objectives of energy assessments are:
 - Improved leverage of energy dollars spent
 - Maximum utility incentives
 - Short-, mid-, and long-term implementation options
 - Operating cost reduction
 - Enhanced staff/occupant comfort
 - Reduced equipment maintenance costs

Preparations for assessments include securing access to the buildings as well as compiling adequate utility data for the engineer. Two years of utility usage data is recommended to facilitate an effective assessment. To retrieve this data, the Energy Engineer can either ask the Energy Team Leader acquire data that already is available to them (where applicable), or request access to the building’s usage data. For example, in the SDG&E territory, the kWickview software system allows access to load profiles and interval data which are critical to evaluate which efficiency practices and tools will be most beneficial at the site level. (Information obtained by Appendix B. II. “Sustainable Region Program Questionnaire” should be made available to the Energy Engineer.)

At the initial stage, a “checklist” assessment is often the appropriate tool. This assessment is a snapshot of potential buildings to determine which of them to examine further. The Energy Engineer identifies potential energy efficiency measures, but does not provide project cost or savings estimates. The process can be helpful for the Energy Team’s early decision-making stages.

A more detailed level of assessment is a “preliminary assessment.” Here the Energy Engineer will include preliminary estimates of savings and the approximate costs of implementing the proposed energy efficiency measures. The information normally will be sufficiently well-developed for the building owner to decide whether to pursue a retrofit project or not.

The most detailed assessment is an “investment grade” assessment—the type of assessment you can literally “take to the bank.” It provides the most detailed and well-worked out assessment of costs and savings, and has a high level of accuracy.

To maximize the efficiency and effectiveness of any energy assessment, the Energy Engineer must possess the appropriate checklists from which to base his/her investigation. (For a sample assessment checklist, see Appendix B. V. "Energy Efficiency Opportunity Checklist.")

Step 7: Assessment Report Meeting

Following the energy assessments and Energy Engineer's compilation of the Energy Assessment Report, agency staff should arrange for a follow-up meeting. (For a sample assessment report meeting agenda, see Appendix B. VIII. "Assessment Report Meeting Agenda.") At this stage, the agency should invite the local utility Account Executive or Energy Efficiency Programs Manager to participate. This meeting gives the agency, Energy Engineer, utility representatives, and local government an opportunity to:

- Review the report together
- Introduce utility representative into the process
- Ask clarifying questions of the engineer
- Determine next steps in the Program

(For sample Energy Assessment Report and Templates, see Appendix B. VI. "Energy Conservation Opportunities Table," Appendix B. VII. "Energy Conservation Opportunities," and Appendix D. "Energy Assessment Report.")

Prior to the meeting, the agency representative should distribute copies of the completed Energy Assessment Report to all attendees via e-mail. This step enables facilitation of a comprehensive yet efficient discussion of the ECOs identified by the energy engineer.

Following this meeting, the agency representative should create and distribute a summary of the meeting. While summaries are a helpful tool for each meeting, it is critical as a follow-up to the Energy Assessment Report meeting so that the "Next Steps" discussed at the meeting are on paper and clear to all participants. (For a sample meeting summary, see Appendix B. IX. "Assessment Report Meeting Summary.")

Step 8: Funding Conservation Projects

Identifying and maintaining reliable funding is essential to long-term SRP success. Local governments have responded to this need for consistent funding in a variety of ways. Some energy programs depend heavily on outside support from state agencies or local utilities. Others rely on the local government's own annual budgeting process. This can make the programs vulnerable to changes in perception of the importance of saving energy. Two mechanisms for funding projects include:

- Ratepayer funding sources
- Local government funding sources

Ratepayer Funding Sources

Public Goods Charge Funds: Local Government Partnerships

The PGC funds are regulated by the [California Public Utilities Commission](#). The PGC is a line item on ratepayer electric and gas bills that goes to funding energy efficiency and other programs through each utility across the state. There are several types of energy efficiency programs, including utility-run programs, third-party programs, and LGPs. Local and regional governments can apply for energy efficiency funds through an LGP with their utility.

In coordination with the SANDAG SRP, SDG&E has proposed a supplemental funding opportunity for participating local governments. Once an SRP plan is approved by a City Council or Board of Directors, the local government will be able to apply for mid-cycle partnership funds from the IOU to initiate their program. For example, under the umbrella of LGPs, SDG&E has proposed to make available seed funding to municipalities that successfully complete the SANDAG SRP. This funding would enable a local government to undertake one or more energy projects that were identified through the SRP. The goal is to build the institutional knowledge at each local government and achieve energy savings. A similar partnership effort could be proposed with utilities across the state.

State Energy Program Loans

Some local governments also have benefited from state energy loans, usually provided at relatively favorable terms. The funds normally are used to support retrofit projects in departmental facilities. The [CEC Energy Efficiency Financing Program](#) provides financing for schools, hospitals, and local governments through low-interest loans of up to three million dollars for feasibility studies and the installation of energy-saving measures. While the loan is made to the local government as a whole, internally each department using a portion of the funds may be made responsible for the debt and interest payments. The department may be required by the local government's Financial Officer to agree to make repayments without requesting an increase in their annual budget. In return, the department retains the savings from the reduction in their monthly energy bill, plus any maintenance savings derived from operating new, more efficient equipment.

On Utility Bill Financing

On-Bill Financing programs facilitate the purchase and installation of qualified energy efficiency measures by customers (e.g. municipalities, who might otherwise not be able to act given capital constraints and administrative and time burdens to participation). On-bill financing from SDG&E offers eligible customers 0-percent financing for qualifying energy-efficient improvements. Ratepayers who participate in these programs typically are able to take part in other incentive programs as well, but at a reduced rate of incentive.

Utility and Third-Party Administrator Rebate/Incentive Programs

Through legislation passed by federal and state legislatures and implemented by California's regulatory agencies, municipalities are able to participate in energy conservation, efficiency, renewable energy, and demand response incentive and rebate programs. Municipalities also can take advantage of utility rate structures that support green energy practices.

The following incentive programs types can be used to facilitate energy efficiency and renewable energy measures. Typically, there is a range of programs offering varying incentive levels and services depending on the customer's needs and unique issues. Although energy efficiency programs and their administrators vary throughout the state, California has one of the most progressive mandates to promote energy efficiency in the country. Therefore, all municipalities can benefit from the programs offered through their utility.

Energy efficiency and renewable energy incentive programs typically are defined by the market sector for which they serve (e.g. residential, commercial, industrial, as well as new and existing infrastructure).

Solar Programs

Subsequent to the passage of Senate Bill 1 (SB 1) in 2006, the state of California has a mandate to install 3,000 megawatt (MW) of solar electricity within the state. SB 1 decrees that all energy corporations need to offer a program to incentivize their ratepayers to install solar systems that offset their electricity load. Most utilities currently use one of the following types of incentives:

- *Performance-based incentive:* The administrator provides a bill reduction based on the production of electricity from the site.
- *Capacity-based incentive:* The administrator provides a one-time credit to the customer to offset a portion of the system installation costs

Energy Efficient Technologies Incentive Programs

Energy efficient technology installation programs offer incentive payments for the installation of new, high-efficiency equipment or systems for non-residential customers including municipalities. A project may consist of the retrofit of existing equipment/systems or the installation of equipment associated with new added load. Software or engineering calculations are used to estimate the energy savings and incentive depending on the type of energy efficiency measure installed. Incentives are paid based on the quantity of kilowatt-hour (kWh) or therms saved resulting from the installation of the new equipment or system.

Nonresidential New Construction Programs

New facilities can benefit from a program that provides technical and financial resources to aid them in the design phase of new facilities to the most cost-effective energy efficiency standards. These programs target municipalities among other ratepayers who are planning new buildings, including expansions, additions, and major remodels, as well as their selected design professionals who are providing building plans and specialty consulting regarding energy or environmental quality.

Nonresidential Educational/Incentive Programs

By using indicators such as energy simulation modeling, life cycle cost analysis and long term operating cost reduction goals; these programs will educate, demonstrate, and encourage energy efficiency and demand reduction above and beyond Title 24 California Energy Code. These

programs are also designed to work in conjunction with other programs that provide more robust financial incentive for energy efficiency installations.

Local Government Funding Sources

Revolving Funds

Revolving funds are internal pools of money designed to recycle a portion of energy cost savings from energy-efficiency improvements into capital for new projects. A local government can reinvest a certain percent (or all) of documented annual energy savings into a revolving fund that would provide capital for future energy efficiency projects or to fund the salary of an energy manager.

When the program is funded, fully operational and dollar savings are accumulating in the fund, the money can be left in the energy account, used to repay some of the accumulated money back to the general fund, or shared with other departments within the local government. Funding for the SRP still must go through the local government's annual appropriation process, so program staff must continue to make sure that information on program successes is transmitted to the proper individual for the budget.

One-Percent for Energy

Some local governments have adopted a unique method of financing staff and individual energy projects, sometimes referred to as "One-percent for energy." The local government imposes a percentage surcharge on departmental energy bills. The money goes into a central fund to support an energy manager, or to support energy efficiency projects.

On Tax Bill Financing (Assembly Bill 811)

[California's Clean Energy Municipal Financing Law](#) (Assembly Bill [AB] 811) authorizes a legislative body to allow property owners to enter into contractual assessments to finance installation of energy efficiency improvements and distributed generation renewable energy sources at residential, commercial, industrial, or other real property. The capital required to pay for work may include funds available from any source, including the sale of bonds.

In March 2009, the [CityFIRST program](#) was announced by the [California Statewide Communities Development Authority](#) (California Communities). California Communities is a joint powers authority created by the [California League of Cities](#) and the [California Association of Counties](#), and CityFIRST is their statewide AB 811 clean energy financing program. California Communities has partnered with Renewable Funding, Royal Bank of Canada, CCSE, and Ecomotion to offer this program to municipalities.

CityFIRST is a voluntary program that allows property owners to pay for the upfront costs of renewable and energy efficiency projects over 20 years as a line item on their property tax bills. If the property is subsequently sold, the repayment obligation remains on the property tax bill and transfers to the new owner.

The on-property-tax-bill funding mechanism is designed to overcome a significant barrier to pursuing major energy efficiency upgrades and clean renewable generation: high up-front costs or

initial project capital outlay versus the lifecycle cost/benefit. Municipal programs are currently being pursued by the Cities of Berkeley and Palm Desert.

Power Purchase Agreements

As well as receiving incentives for the installation of solar, new and creative ownership structures are paving the way for increased penetration of solar with municipalities and other solar customers. The power purchase agreement option allows municipalities to install solar panels owned by a third party at their facilities. The third party then charges the municipality for the electricity used at a rate lower than would be charge to receive electricity from the utility. Using this funding option, municipalities avoid the up-front cost of the solar installation and reap the benefits of the installation which include zero emission electricity and lower electricity bills.

Step 9: Recommendations Meeting

At the recommendations meeting, the Energy Team Leader should facilitate a review of the local government's preferred action items and needs of the local government. (For an agenda, see Appendix B. X. "Recommendations Meeting Agenda.") These recommendations should be discussed with the attending utility representative to determine incentive programs and utility assistance available for implementation of the items.

Step 10: New Construction Considerations

Many local governments own and occupy their buildings. As such, they have both the opportunity to influence a building's performance during the design and construction phase, and the incentive to minimize its long-term operating costs. There are a number of steps that can be taken to ensure a new facility is built to the highest standards of performance. For example, when selecting the architect and engineering team, the Energy Team should ensure that the candidates have previous experience with the design of energy efficient buildings. In addition, the designers should guarantee the use of technologies and practices that will create the most efficient operating facility possible. At the end of the design phase, the Energy Team must verify that operating efficiency is not 'value engineered' out of the project if unexpected budget constraints require cost cutting. In other words, the agency and local government should make every effort to emphasize the increased value of energy efficient technologies in the design and installation phases.

[Title 24](#), California's state energy code, requires energy efficient construction standards in new buildings. Local governments should consider enacting policies to require that their new facilities be designed to exceed the state code requirements and take advantage of incentive programs designed to encourage higher performance. Title 24 focuses on the energy performance of a building. To further enhance long-term building energy performance, agencies should consider adopting a whole building performance approach that considers other design and operating factors for a new facility in addition to energy. One approach is to require [LEED certification](#) (Leadership in Energy and Environmental Design, administered by the [U.S. Green Building Council](#)), which mandates third-party certification of building economic and environmental performance. Another standard specifically related to efficiency is the Energy Star® certification process. Other programs like Build It Green also emphasize energy efficiency measures in buildings.

The Cities of San Diego, Seattle, and Portland, for example, have adopted LEED criteria for their new buildings. If a local government leases or rents its buildings, involved Energy Team members must be sure to name energy efficiency as one of the selection criteria when reviewing potential properties and find sellers (and owners) open to negotiating energy efficiency upgrades to the facility.

A discussion of new construction should be included within each meeting and be facilitated by the Agency representative. Discussion points are:

- New building plans, including timeline, budgets
- Detailed description or plan for building as currently proposed
- Contact information

Step 11: Policy Considerations

California energy laws have a great effect on land use planning, since the majority of GHG emissions in California are the result of infrastructure and development decisions. Based on state and local policies, local governments should consider:

- How to build buildings and how to retrofit existing buildings
- Where to locate buildings
- The quality and types of infrastructure required to serve these buildings
- Compatibility with the Regional Comprehensive Plan or Blueprint plan that considers the interrelationship of jobs, housing, population, and transportation choices

The Energy and Climate Change Connection

The state's largest contributors to GHG emissions are on-road transportation, electricity use, and natural gas use. The way local governments plan for transportation and land use, ranging from General Plans to council policies to internal soft policies and local government energy usage, all have significant impacts on a local government's energy use choices and related GHG emissions. Therefore, addressing GHG reductions primarily is achieved from modifying energy choices and use.

[Assembly Bill 32](#), "The Global Warming Solutions Act of 2006," is a California law that commits the state to GHG emissions to 1990 levels by 2020. [Senate Bill 375](#) was signed into law by Governor Schwarzenegger on September 30, 2008, and requires the [California Air Resources Board](#) (CARB) to establish regional GHG reduction targets for Agencies. SB 375 calls for the integration of regional transportation planning, regional housing needs assessment planning, and GHG planning while streamlining aspects of California Environmental Quality Act (CEQA). [Assembly Bill 811](#), related to on Tax Bill Financing of Energy Efficiency and Renewable Energy Projects, was signed by the Governor in July 2008. It will authorize California cities and counties to designate areas within which city officials and willing property owners may enter into contractual assessments to finance the installation of distributed generation renewable energy sources and energy efficiency improvements.

Climate Change and Local Governments

Most California local governments have been charged with combating the existence and creation of GHGs and climate change with the passage of AB 32 and successive state policies and legislation. The California Attorney General has assumed a role in assisting local government entities with implementing these state legislative actions through local general plans and building codes and standards for increased energy efficiency. The Attorney General's office holds that local governments have a requirement under the CEQA to provide policies, actions, and mitigation measures that combat GHG and climate change. For example, in a letter dated June 11 to the City of San Diego the state's position regarding a city's responsibility towards mitigation for climate change, global warming and GHG emissions per AB 32 is stated: "The city as lead agency is required under CEQA to adopt all feasible alternatives and mitigation measures." (Goldberg, 2007) To this end the Attorney General is assisting local government with suggested policies, educational resources, and review of draft documents as they pertain to the reduction/elimination of GHG and climate change in compliance with CEQA.

How Will AB 32 be implemented?

CARB is the lead agency for implementing AB 32. The key elements on which CARB will focus are:

- Expansion and strengthening of energy efficiency programs and building and appliance standards,
- Expansion of the Renewable Portfolio Standard to 33 percent
- The renewable energy expansion will include "placing solar arrays and solar water heaters on houses throughout California and an increase in building standards for energy efficiency

Currently, CARB is developing a toolkit of recommended measures and best practices for local governments and small businesses to reduce their GHG emissions. Some proposed measures include adoption of some of the following changes:

- Increasing Energy efficiency
- Green building
- Cool community practices
- Water conservation
- Renewable energy generation
- Climate-friendly procurement of goods and services

How Will SB 375 be implemented?

The law authorizes CARB to set regional GHG emissions reductions targets for regions of the state. It requires agencies to create Sustainable Communities Strategies (SCS) as part of the Regional Transportation Plan (RTP) process. The SCS will need to demonstrate if a region will meet its GHG

reduction target given current projected financial means and constraints or if an Alternative Planning Strategy (APS) that is not financially constrained will have to be developed to show what it would take for a region to meet its goals. The APS would be prepared if the region has to make different assumptions about how the region will meet its GHG emissions target. SB 375 also will link the Regional Housing Needs Assessment (RHNA) process to the SCS process. SB 375 creates CEQA exemptions and other streamlining provisions for housing projects located near transit and in areas targeted by the “SCS” when it can be demonstrated that the GHG targets can be reached.

SB 375 preserves local land use authority. There is explicit language that states that an SCS will not supersede or interfere with local land use plans. CEQA streamlining/exemptions will be available to certain development projects that promote compact development. Specifically, projects that conform to the SCS or that are designated “transit priority projects” are available for CEQA exemptions. These projects are residential projects that are located near transit and meet certain density and floor area ratio requirements.

CARB likely will base its targets and recommendations on areas that can achieve the greatest reductions for the lowest cost. CARB is required to set its regional GHG emission targets by September 30, 2010, and MPOs will be required to include their SCS or APS in the next RTP following the setting of targets.

How Will AB 811 be implemented?

AB 811 will address climate change through energy conservation efforts by authorizing local governments to provide up-front financing to property owners to install solar or other renewable energy-generating devices or make energy efficiency improvements to their properties. The local government would provide the up-front funds for the project, and the property owners pay an annual assessment until those funds, plus interest, are repaid. An underlying purpose is to create a means by which a project that provides both a public benefit and an incidental benefit to particular property owners can be financed without imposing the cost on property owners in other parts of the city who derive no benefit. The CityFIRST program by California Communities, Renewable Funding, Royal Bank of Canada, CCSE, and Ecomotion is a statewide AB 811 clean energy financing program for municipalities and is further detailed in Step 8: Funding Conservation Projects.

In conjunction with or independent of state and federal laws, local policy statements can influence decisions within a local government. To make the benefits of energy investments more apparent, the policy component may include a review and proposal of energy efficiency and GHG reducing measure amendments to the General Plan, city ordinances, city charter, and other local government documents to fulfill the local government’s environmental or energy strategic goals. This review should culminate in creation of energy-saving measures for existing buildings and new construction as well as policy measures that local governments can adopt based on legislative and regulatory mandates like those described below and others specific to the region.

Step 12: Presentation to City Council or Board

Once a local government energy plan is completed with the above components addressed, the MPO should work with the local government staff to prepare necessary staff reports and/or a presentation of findings for the City Council or Board. The leadership should be given a high level briefing of the project and asked to approve or endorse associated energy goals and/or projects.

Appendix A: Program Participation Timeline

Activities within the Program will progress at different paces as best fit local government and program needs. The initial focus should be on identification and assessment existing buildings in which energy-saving measures could be realized. Other components, New Construction and Policy Measures, should follow. The following table provides a possible timeline for local government action.

Sustainable Region Program Timeline

Sustainable Region Program																								
Task	Month 1				Month 2				Month 3				Month 4				Month 5				Month 6			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MPO contacts Municipalities	█	█																						
Municipalities Apply for SRP		█	█	█	█	█	█	█																
MPO/municipality Kickoff Meeting						█	█	█	█															
MPO Conducts Energy Assessments										█	█	█	█											
MPO Creates Assessment Reports														█	█	█	█							
Assesment Report Meetings																		█	█	█	█			
Recommendations Meetings																						█	█	█

Appendix B: Sustainable Region Program Templates

- I. Program Announcement from Agency to Local Government
- II. Sustainable Region Program Questionnaire
- III. Preliminary Assessment Questions
- IV. Kickoff Meeting Agenda
- V. Energy Efficiency Opportunity Checklist
- VI. Energy Conservation Opportunities Table
- VII. Energy Conservation Opportunities Sample
- VIII. Sustainable Region Program Assessment Report Meeting Agenda
- IX. Sustainable Region Program Assessment Report Meeting Summary
- X. Recommendations Meeting Agenda

I. Program Announcement from Agency to Local Government

DATE

Dear **LOCAL GOVERNMENT REPRESENTATIVE**:

SUBJECT: Invitation to Take Part in **AGENCY's** Sustainable Region Program

We are writing to inform you of a unique opportunity to participate in the expansion of an energy-saving pilot program for local governments sponsored by the **AGENCY**. The **AGENCY** will provide technical and policy support to a local government to develop an energy management plan, assess energy needs, conduct assessments of city facilities, assist in developing projects, and identify appropriate rebate and financing programs. Energy efficiency and conservation projects generally pay for themselves in three to five years. The main goal of this effort is to help local governments that have not performed significant energy management to complete energy projects and reduce their operating costs.

The **AGENCY** hopes that the Sustainable Region Program will develop new program delivery mechanisms for local governments to take advantage of regional energy saving programs.

The **AGENCY** will select a city based upon the following criteria:

- No full-time energy manager
- Minimal current participation in energy efficiency programs
- Available funds or willingness to finance energy projects
- Staff capacity to manage projects

If you are interested in being considered for this innovative Program, please contact **CONTACT NAME, E-MAIL, and PHONE NUMBER** by **DATE**.

Thank you for your interest in this program.

Sincerely,

II. Sustainable Region Program Questionnaire

Thank you for your interest in participating in **AGENCY's** Sustainable Region Program (SRP), which in **YEAR** will provide **XXX** local governments in **AGENCY** region with services and resources for significantly improving the energy performance of their facilities. The selection process consists of analysis of your responses to the following questionnaire that will provide **AGENCY** with better information on your local government's involvement and interest in energy efficiency.

Please complete the questionnaire and return to **AGENCY** by **DATE**. Applicants will be notified whether they were selected for the SRP in **DATE**. Questions may be directed to **AGENCY REPRESENTATIVE** at **E-MAIL ADDRESS** and **PHONE NUMBER**. Your completed questionnaire should be submitted to her/his email address no later than close of business, **DATE**.

1. Please describe your government's participation in any existing energy efficiency programs.
2. Please describe how any current energy efficiency programs or projects are staffed and financed.
3. Please describe how potential energy efficiency projects identified in the recommendations of the SRP might be staffed and financed.
4. Please briefly describe the nature of your government's interest in and commitment to energy management.
5. Please provide the total square footage of local government facilities and data on your energy consumption. Energy data should be provided to the finest level of detail available, such as by building, by department, or cumulatively for all facilities. Provide kilowatt-hour (kWh) for annual electricity consumption and British thermal unit (BTU) for annual natural gas consumption.

III. Preliminary Assessment Questions

1. Total Number of Facilities/Buildings:
 - a. Number of Electric Accounts for These Buildings:
 - b. Number of Natural Gas Accounts for These Buildings:
2. Have you conducted a government-wide energy intensity study (e.g., kWh/sq ft) to determine your highest energy users? If yes, please provide **AGENCY** a copy.
3. Brief summary of recent energy improvement projects (last 1 year):
 - a. Completed projects (attach if necessary):
 - b. Pending projects (attach if necessary):
4. How many energy assessments have you conducted in the past three years? Please provide **AGENCY** a copy of assessment reports.
5. Do any of your facilities use an energy management system (EMS)?
 - a. How many?
 - b. What type of EMS do they use?
6. Who is involved in energy project planning and implementation in your government?
7. Do you have an energy management team? (Yes/No) If yes, who is on the team?
8. Do you have a comprehensive energy management plan? (Yes/No) If yes, please provide **AGENCY** a copy of the Plan.
9. Do you have an education program for government personnel? (Yes/No)
10. Do you have a newsletter for personnel? (Yes/No)
11. How do you track energy costs/usage?

IV. Kickoff Meeting Agenda

Sustainable Region Program Kickoff Meeting

Date and Location

1. Introduce Key Staff and Local Government Representatives

Project Administrator (Agency)	Engineer (Agency or Contractor)
Name	Name
Address	Address
Phone	Phone
E-mail	E-mail

Energy Team Leader

Name

Address

Phone

E-mail

2. Introduce Representatives to Sustainable Region Mission

Program agency representative will explain the SRP Concept and Program Goals.

3. Discuss Local Government Needs

Local government representatives will have the opportunity to raise current and potential issues with local government infrastructure, policy, funding mechanisms, process, staff, etc.

4. Identify Energy Team Members for Local Government

Agency representative will discuss the local government's decision process in choosing the following Energy Team members:

- Energy Team Leader
- Local government management office staff
- Facilities manager/specialist
- Finance department representative
- Engineering department representative
- Planning department specialist

5. Next Steps

Set dates for follow-up meetings. Local government staff should review current practices and plans to prepare for these meetings detailing the following issues:

- Energy assessments
- ECOs recommendations
- New Construction (as applicable)

- New building plans, including timeline, budgets
- Detailed description or plan for building as currently proposed
- Contact information
- Policy Considerations

Local government review of existing General Plan, Energy Plan (as applicable), municipal charter and other energy policy documents.

V. Energy Efficiency Opportunity Checklist

	Yes/ No	Notes (Current Model, Year, Size)
Heating, Ventilation and Air Conditioning (HVAC)		
Air Conditioning Unit Replacement		
Variable Speed Drive – Fan		
Variable Speed Drive – Pump		
High-Efficiency Packaged Direct-Expansion (DX) Unit		
High-Efficiency Packaged Heat Pump		
Constant Volume (CV) to Variable Air Volume (VAV) Conversion		
Use Evaporative Cooling		
Indirect Evaporative Cooling		
Demand-based Ventilation		
High Efficiency Boiler		
Economizer Cycle		
High-Efficiency Motor Retrofit		
Multi-Speed Motor Retrofit		
High Efficiency Compressor		
High Efficiency Chiller		
Cooling Tower Fan Pony Motor		
Fume Hood Airflow Reduction		
Attic Exhaust Fans		
Add/Increase Duct Insulation		
Low Pressure Drop Filters		
Reduce Overventilation		
Steam Trap Optimization		
Add Low Load Boiler		
Thermal Energy Storage		
Ceiling Fans		
Electronically Commutated Motor (ECM) Fan Motor Upgrade		
Lighting		
Fluorescent Lamp Retrofit		
Electronic Ballast Upgrade		
Incandescent Lamp Replacement		
Metal Halide to CFL Retrofit		
Fluorescent Delamping		
Light-Emitting Diode (LED) Exit Lighting		
High Efficiency Signage		
Controls		
Programmable Thermostats		
Equipment Timeclock		
Energy Management System (EMS)		
Selective Switching		

	Yes/ No	Notes (Current Model, Year, Size)
Controls (cont.)		
Hydronic Temperature Reset		
Temperature Setback		
Duty Cycling – Unoccupied		
Boiler Outside Air (OSA) Temperature Reset		
Add Occupancy Sensors		
Daylighting		
Vending Machine		
Charging Stations		
Demand Limiting Controller		
Process		
Office Equipment Sleep Mode		
Kiln/Oven Upgrade		
Other		
Gas Water Heater Upgrade		
Electric Water Heater Upgrade		
Cooking Appliances Conversion		
Cooking Appliances Upgrade		
Add Window Film		
Install/Add Roof/Wall Insulation		
Refrigeration		
Light Colored Roof Surface		
Passive Solar Heating		
Window Replacement		
Roller/Blinds/Draperies Shading		
Infiltration Reduction		
Vestibule Air Lock		
Compressed Air Reduction		
Process Vacuum Reduction		
Low Flow Plumbing Fixtures		
High Efficiency Transformers		
Power Factor Correction		
Optimize Defrost Control		
Increase Refrigeration Insulation		
Refrigeration Space Doors/Curtains		
Compressor Floating Head Pressure Control		
Pool Dehumidification Heat Recovery		
Pool Cover		
Elevator Optimization		
Add Skylights		

VII. Energy Conservation Opportunities (ECO) Sample

ECO No. 1 Retrofit Outdoor Down Lights



Recommended Action

Retrofit 50-Watt outdoor Metal Halide Down lights with 15-Watt compact fluorescent lamp (CFL) down lights.

Estimated Energy Savings	=	1,722 kWh/yr
Estimated Demand Savings	=	0.4 kW
Estimated Energy Cost Savings	=	\$257/yr
Estimated Implementation Cost	=	\$154 (after rebate)
Simple Payback Period	=	7 months
Return on Investment (ROI)	=	166.7%

Background

There are twelve (12) 50-Watt Metal Halide Down lights illuminating the exterior of the auditorium. The existing lamp in each fixture may be a candidate for direct replacement with a 15-Watt CFL lamp.

VIII. Sustainable Region Program Assessment Report Meeting Agenda

Sustainable Region Program Assessment Report Meeting

Date

Location

Time

1. Welcome and Introductions

The Agency representative re-introduces the energy engineer, Energy Team staff, and utility staff

2. Energy Assessment Report

The energy engineer will review each Energy Conservation Opportunity listed in the Energy Assessment Report (see Appendix D, "Energy Assessment Report"). This document includes detailed tables of energy savings, cost savings, costs for implementation of strategies, and by payback period.

The utility representative will give an initial assessment of any potential money saving programs available to the local government when considering installation of ECOs projects.

3. Financing Conservation Projects

4. New Construction and Policy Considerations

The Agency representative will lead a discussion on the following items:

- Continue policy/code/regulation issues that may be addressed with Agency representatives
- Plans for new construction, if any, over the next five years, so that the Agency representative may begin study of potential for greening of those buildings

5. Next Steps

The purpose of follow-up meetings will be to:

- Prioritize ECOs action items for projects the Energy Team has identified as feasible
- Review Agency representative recommendations for new construction
- Review Agency representative recommendations for policy

IX. Sustainable Region Program Assessment Report Meeting Summary

Sustainable Regions Program Assessment Report Meetings Summary

Date

Attendees

The Agency representative met with local government staff to discuss the outcome of the building energy assessments conducted in **DATE**. Prior to this meeting, the **AGENCY** representatives conducted energy assessments of 13 facilities to identify potential energy savings from energy efficiency, demand response, and renewable energy strategies and options.

Agency representatives

Project Manager

Energy Engineer

Local Government representatives

Energy Team Leader

Facilities representative

Finance representative

Administrative representative

Summary

This meeting began with re-introductions to refresh staff on the engineer and Energy Team Leader. The Agency representative advised the attendees about the purpose of the meetings, which was to review each of the local government's energy efficiency and renewable energy assessments with the engineers/facility staff. The energy engineer gave a description of the data contained in the introduction to the assessment report folders (provided to the local government staff by the agency representative in paper form and through e-mail prior to the meeting). This document included detailed tables of energy savings, cost savings, costs for implementation of strategies and by payback period. The energy engineer then elaborated on the intricacies of each facility's assessment and the ECOs associated with each.

Next steps

After each local government energy team has had the opportunity to digest the information disseminated at these meetings, the agency representative will schedule follow-up meetings. The purpose of the follow-up meetings will be to:

- Prioritize ECOs action items for projects that each Energy Team has identified as feasible
- Discuss policy/code/regulation issues that may be addressed with agency representatives
- Plans for new construction, if any, over the next five years, so that the agency representative may begin study of potential for greening of those buildings

- Provide answers to data request posed at meetings, specifically inclusion of incremental cost estimates for some ECOs, potential for newer technologies

X. Recommendations Meeting Agenda

Sustainable Region Program Recommendations Meeting

Date

Location

Introductions and Opening Remarks

The agency representative will open the meeting to re-introduce parties to each other.

Review of ECOs

The Agency representative and/or energy engineer will briefly review the ECOs contained in workbooks previously distributed to the local government staff.

Discussion of Local Government's Preferred ECOs

The Energy Team Leader will lead a discussion with the energy engineer and AGENCY representative to relay which ECOs best suit the local government's needs

Short-term (within 12 months)

Mid-term (1 to 4 years)

Long-term (5-plus years)

Discussion of Any Local Government New Construction Plans

The agency representative will discuss any new construction plans and recommendations with the agency (*following the instructions in the Toolkit "New Construction" section).

Next steps

The agency representative will arrange meeting with Energy Team Leader to present final report including ECOs, new construction, and policy recommendations.

Appendix C: Links to Other Toolkits and Guides

Several local governments, agencies, and communities have developed toolkits and guides to suit their unique needs. The following is a partial list of links to toolkits that can be of benefit to an agency during development of its SRP Program. Links already provided in the SRP Action Plan and SRP Toolkit report have not been duplicated.

- [City of Chula Vista "Mission Green" Initiatives](#)

- [City of San Diego Sustainable Community Program](#)
- [County of San Diego's Green Business Program](#)
- [Madison Wisconsin Sustainability Toolkit](#)
- [Energy Star Guidelines for Energy Management Overview](#)
- [Energy Efficiency Policy Toolkit](#)

Appendix D: SAMPLE Local Government Energy Assessment Report

Appendix D is saved as a separate attachment due to large file size. It is the Energy Assessment Report developed and delivered to the City of Poway.