County of San Diego
Strategic Energy Plan 2013-2015
Progress Report for FY 2014-15
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Purpose

The County of San Diego Strategic Energy Plan has two distinct components:

The **County Operations Energy Strategy** includes County-owned facilities, leased facilities, and the County’s vehicle fleet. The main objectives are to lower operational costs, reduce energy and water consumption and minimize greenhouse gas emissions.

The **County Community Energy Strategy** includes program development and management for the unincorporated areas within the county and for coordination with federal, state and local entities. The County Community Energy Strategy has a regional focus with specific emphasis on the unincorporated area where the County has land use jurisdiction. The main objectives are to reduce energy and water consumption and minimize greenhouse gas emissions, resulting in healthier and more sustainable communities.
Strategic Energy Plan Progress Reporting

The Energy & Sustainability Team (comprised of staff representing each participating department) has identified and/or implemented specific actions based on the 2013-2015 Strategic Energy Plan priorities and goals to meet or exceed objectives.

This Strategic Energy Plan progress report includes the status of each energy strategy area, significant accomplishments achieved during the past fiscal year (July 2014 through June 2015), as well as the status of projects in progress that are expected to complete by June 2016. This progress report will also be placed on the County of San Diego website.
Operational Achievements

The following efforts completed during Fiscal Year 14-15:
Reviewed all capital improvement and major maintenance projects for opportunities to reduce energy/water consumption and related costs, reduce the energy footprint, minimize greenhouse gas emissions and promote sustainability practices in County operations.

11 projects to modernize lighting fixtures, replace lamps and light bulbs have completed. The expected annual savings for these projects is 3,178,000 kWh or enough energy to power about 296 average homes. To fund these projects the County received $1,682,000 in zero interest loans from SDG&E. Another $153,908 was saved by taking advantage of SDG&E rebates.
Energy and Water Efficiency and Utilization

Drought Response - Following Board of Supervisors Action on May 12, 2015, staff began enacting the Drought Response Action Plan – Countywide team assembled to manage a series of water conserving actions including landscaping and irrigation conversions, building water retrofits, artificial turf installation, and a public and staff education campaign to lead by example as it relates to the Statewide drought.

Comparing Jan-June 2013 to Jan-June 2015, overall the County of San Diego has cut water usage by 15.3%. This has occurred in spite of the expansion of county facilities and increases in staff and public services. The Department of Parks and Recreation is an important contributor to this savings. When comparing only June 2013 to June 2015, Parks and Recreation cut water usage by an audacious 46.7%!
Energy and Water Efficiency and Utilization

**Water Savings Results** - Water conservation installing electronically controlled flush valves at the Vista Detention Facility have resulted in annual water savings of **over 21 million gallons**.

Installation of **Advanced Water Treatment** in the Central Plants at the **COC and the CAC** have resulted in verified water savings of **over 1.9 million gallons** from June-August 2015.

Water audits have been completed for the 20 largest facilities. Drought response **landscape retrofit projects** are being generated from those report and are expected to be complete prior to June 2016, with anticipated savings of **up to 15 million gallons a year**. These projects are located at several key county facilities including South Bay Regional Center, the Kearny Mesa Juvenile Detention Facility and the East Mesa Detention Complex.
Energy and Water Efficiency and Utilization

Installing **efficient sink fixtures, toilet flush valves, and shower heads** at the Kearny Mesa Juvenile Probation Facility. The new equipment is expected to save approximately **4 million gallons of water annually** or about 26% of the total water consumption at that facility. That’s enough water to supply about **24 average households for a whole year**.

Replaced **natural turf** on four permanent Little League baseball fields and one full size soccer field with **water-saving artificial turf** at 4S Ranch Sports Park. Installation of artificial turf underway at baseball field in Pine Valley Regional Park.
Energy and Water Efficiency and Utilization

Through the completion of the County’s energy efficiency improvement efforts, the estimated annual on-going savings is:

**Estimated Annual Electricity Savings:**
5,499,523 kWh, or enough energy to power 515 average homes.

**Estimated Annual Natural Gas Savings:**
102,011 Therms, or enough gas to supply 279 average homes.

Total annual water savings of 71,000,000 gallons comparing FY 2013-14 to FY 2014-15. This is enough water to supply 436 homes for an entire year.
Green Design and Construction for New Facilities

Anticipate Certification in Leadership in Energy & Environmental Design, or LEED, for the following new buildings in design or construction:

- Alpine Branch Library
- Crime Lab and Fleet Headquarters
- Imperial Beach Branch Library

**LEED Practices help to:**
- Divert construction and demolition debris away from landfills
- Reduce energy and water consumption
- Encourage the use of environmentally friendly materials and products
Green Design and Construction for New Facilities

Participated in “Savings By Design”, a program for non-residential, new construction, energy efficiency projects sponsored by the California Public Utilities Commission and administered by SDG&E. The program promotes the use of innovative energy design features and optimizing interactive efficiency effects of the various building systems.

As a result of involvement in the program, the County received $200,000 in rebates all from the Las Colinas Women’s Detention Project. The monies were placed into a trust fund to develop, design and/or finance new energy-related projects.
Green Design and Construction for New Facilities

Started construction on the County’s first Zero Net Energy building. The new Alpine Library is expected to be complete in 2016.

Design underway on the Imperial Beach Library which will be the second County facility to achieve Zero Net Energy.

What is a Zero Net Energy Facility?

A facility where energy production is equal to energy consumption.
Energy Supply

The County operates essential facilities and infrastructure that must have a dependable, secure source of electric energy as well as reliable and reasonable pricing for that energy.

Once again huge saving have been realized via our Direct Access program! During FY 2014-2015 the County avoided approximately $4,360,000 or about 38% of the total annual County cost for electricity when compared to what costs would have been if the County purchased electricity directly from SDG&E.
Distributed Generation System Deployment

Completed request for proposal process and expect to award contracts for two Photovoltaic Systems potentially generating 1.6 MW at the South Bay Regional Center and the Las Colinas Detention Center.

The renewable solar panels will help offset the high demand and cost for non-renewable electricity used at those facilities.
Continued to deploy a centralized County-networked Building Automation System technology (also referred to as a “Smart Building”) which provides an innovative manner to control, monitor and report on various building mechanical and utility systems (e.g., air conditioning, heating, lighting, water meters, distributed generation, etc.). By using this technology the County has the ability to take advantage of data analytics and manage energy demand from a central point.
Smart Building/Smart Grid Technology Deployment

Agreement in place with ChargePoint, an EV charging equipment vendor, to **provide electric vehicle charging station equipment, management, maintenance and related services.**

The charging stations will be used by the public and County staff with electric vehicles. The County will license parking spaces to ChargePoint at 10 facilities by the end of the calendar year, including:

CAC, COC, Fallbrook and Ramona Libraries, 4S Ranch Community Center, APCD, NCRC, SBRC and Assessor and the Health Services Center
Reduced greenhouse gas (GHG) emissions generated from operations by 20,631 CO$_2$e (carbon dioxide equivalent) or 12.2%, which (according to the EPA) equates to taking 4,343 passenger vehicles off the road. Annual results were reported to The Climate Registry. This marks the second year in a row the County has maintained this GHG reduction.

**County of San Diego**

**2014 Emissions**

Total Emissions = 127,832 Metric Tons CO$_2$e (equivalent), down 22.6% from 2012
Vehicle Fleet Fuel Efficiency and Utilization

The County’s Fleet Division won two Awards of Excellence and placed fifth in the nation through both the Government Fleet Magazine’s "Leading Fleets Award" and the "100 Best Fleets" award programs. The awards specifically noted a significant increase in the purchase of fuel efficient compact or hybrid vehicles, and lower client costs through the increased use of mobile maintenance services.

The Green Fleet Action plan is being implemented, with recommendations to reduce Greenhouse Gas emissions from fleet vehicles from FY 2013 through FY 2020.

Overall Fleet Division Improved fuel efficiency (avg. miles per gallon) by over 5% mainly through replacement of older gas-fuel vehicles with new compact or hybrid vehicles.
Communication and Training

Received three Institute for Local Government Beacon awards for local leadership towards solving climate change:

• Gold Beacon Spotlight Award for Agency Greenhouse Gas Reduction with a verified 12.2% reduction from the prior year
• Platinum Beacon Spotlight Award for Energy Savings at Facilities for reducing electricity use in agency buildings by over 20 percent.
• Platinum Beacon Spotlight Award for Natural Gas Savings at Facilities for reducing natural gas use in agency buildings by over 20 percent.
Waste Reduction and Recycling

Implemented a demonstration composting project at the East Mesa Detention Center. The Worm Wigwam vermicomposting unit processes vegetative food scraps generated from the facility. A training program was provided for staff and inmates highlighting composting, vermiculture, sustainable resource management, compost and mulch utilization.

The program is diverting hundreds of pounds a week from waste disposal to composting.
Community Achievements

The following efforts completed during Fiscal Year 13-14:
Regional Collaboration

Continued collaboration with the San Diego Regional Energy Partnership, and provided education and outreach with other San Diego regional local government partners including the Cities of San Diego and Chula Vista, the Port of San Diego, University of San Diego and the San Diego Association of Governments (SANDAG).

San Diego Regional Climate Collaborative: As founding member and Steering Committee member, supported expansion, participated in monthly steering committee meetings and quarterly networking meetings.

Notables: US EPA Honored San Diego Regional Climate Collaborative with National Award.

As one of only two organizations in the nation to receive the Innovative Partnership Certificate, the Climate Collaborative was recognized as a unique partnership working collaboratively on leading edge climate initiatives that are above and beyond business as usual.
Regional Collaboration

Collaborated with the United States Marine Corps on the submittal of grant applications for safety improvements to the San Diego Coastal Bike Path on Camp Pendleton

Live Well San Diego Food System Working Group collaborated with San Diego Farm Bureau to further develop San Diego Grown 365, a trademark identifying local producers. Buying local reduces GHG impacts and encourages sustainability in our local food system.

Conducted two Technical Advisory Committee meetings to facilitate the development of the phase one report for the Comprehensive Renewable Energy Plan
Completed retrofits on 2,246 of the 6,500 County-owned and operated streetlights with LED fixtures. The retrofits are energy efficient and reduce greenhouse gas emissions.

These fixtures are expected to reduce county energy use by 1.8 million kwh per year, resulting in approximately $150,000 per year saving on energy costs. Funding for this effort was provide through a California Energy Commission (CEC) loan.
Achieved success at the 16th Annual Mowing Down Pollution Lawnmower Event. County residents were offered an opportunity to “go green” by turning in their old, working gasoline-powered mower and receiving a discount on a new cordless, rechargeable electric mower. A total of 366 polluting mowers were replaced with new, environmentally friendly electric mowers. The event also eliminated roughly 43 metric tons of greenhouse gasses, equivalent to at least 102,000 fewer miles of driving by the average car.
Reduce Energy Consumption

In 2015, the County Building Code was amended to require the installation of infrastructure to facilitate roof-mounted solar systems and electric vehicle charging stations in all new single-family homes.

Continued the Green Building Incentive Program promoting the use of resource-efficient construction materials, water conservation and energy efficiency in new and remodeled residential and commercial buildings. Incentives include reduced plan check turnaround time and a 7.5 percent reduction in permit fees.

A total of 25 building permits were issued through the program in 2014.
Distributed Generation

Planning & Development Services received national, state and local awards for streamlining online solar permitting:

• 2014 Achievement Award from the National Association of Counties (NACo) for the online solar permit system
• 2014 Merit Award from the California State Association of Counties (CSAC) for the online building permit program
• 2015 Golden Watchdog Award from the San Diego Taxpayers Association for permit streamlining

Over 80% of all residential solar permits (5,059 permits) were processed online for FY14-15.
Transportation and Land Use

Participated in the San Diego Regional Electric Vehicle Infrastructure Working Group, led by SANDAG in partnership with CCSE. The group developed a Plug-in Electric Vehicle (PEV) Readiness Plan to further PEV adoption in the San Diego Region.

$9.3M in Carl Moyer Program funds were awarded by the San Diego Air Pollution Control District to 104 projects in FY 14-15, helping local businesses to purchase cleaner engines for on-road, off-road, agricultural, marine, and locomotive equipment.
Transportation and Land Use

Collaborated with the San Diego Airport Authority to incentivize airport taxi operators to replace older gasoline vehicles with hybrid hybrid electric, compressed natural gas, or alternative-fuel vehicles. A total of 33 taxis were replaced, which will **annually save 52,400 gallons of gasoline and eliminate 862 tons of CO₂ emissions**.

Updated the **off-street parking regulations and design manual** to be consistent with **contemporary design requirements**; address a broader range of land uses; provide flexible, shared or reduced parking requirements for various land use types; incorporate standards for EV parking; and facilitate low impact development practices.
Hosted an Earth Day celebration at the County Administration Center. County staff and interested citizens and visitors stopped by to see what the County is doing to help the environment.

As part of the County’s Local Government Partnership with SDG&E, two lighting fairs were conducted to give employees a chance to purchase energy saving LED light bulbs at a deep discount.

At just one of these events, 3500 LED bulbs were sold to 400 attendees, which will save 191,586 kWh of electricity and $29,255 annually.
The Department of Parks and Recreation managed an energy efficiency and outreach program in coordination with other County departments. The team held 64 events with 29,875 attendees.

Events were hosted by Health and Human Services, Live Well San Diego, and First 5 San Diego and resulted in 255 referrals to SDG&E energy saving programs.
DPR continued its partnership with SDSU to expose college students to energy based careers through supervised program planning and implementation and the alignment of curriculum with updated school standards (Next Gen Science).

Over the last fiscal year this partnership reached over 5,400 participants.
Collaborated with industry and jurisdictional partners on the [San Diego Reuse and Repair Network](#) to promote organizations and industries that sell and/or repair used materials (such as building materials, furniture, household goods, etc.). A [database of repair organizations](#) was completed in 2013. Partners also collaborated to hold the Reuse and Repair Fair at the 2014 and 2015 Earth Fairs in Balboa Park.
Recycling

The Department of Agriculture Weights & Measures collaborated with industry to conduct two collection events for recycling of used pesticide containers from the agricultural community.

**More than 1,100 pounds of plastic was collected** from grove operators, pest control businesses, public agencies, and vintners. It will be used to manufacture items such as speed bumps, pallets, new pesticide containers, and marine pilings.
The Property Assessed Clean Energy (PACE) - a public-private partnership between the County of San Diego and the commercial banking industry - added two new participating lenders in FY 14-15, further increasing opportunities for homeowners to **finance energy efficient projects, water efficiency projects and renewable energy upgrades through their annual property tax bills.**
Operations Projects Underway

The following efforts are underway and are expected to complete by June 2016:
Energy and Water Efficiency and Utilization

7 county facilities have received Level 2 ASHRAE energy audits*, revealing potential savings of 4.3 million KWh and over 82,000 Therms. Implementation of the recommended energy saving projects are all expected to participate in the SDG&E Energy Efficiency Business Rebates program and be funded by the 0% interest loan On-Bill Financing program.

A contract is nearly finalized to provide expertise in **whole building modeling** which will help define long-term energy savings opportunities and to determine if a building is a candidate for becoming a zero net energy facility.

*Energy Assessments and Solutions is a free program offered by SDG&E to **conduct energy performance audits and on-site generation capability analyses** for select County facilities.
Energy and Water Efficiency and Utilization

**Water Reclamation** – Completed feasibility study for installing a demonstration system at the County Operations Center. Design development and cost verification underway to confirm project is economically feasible. The system being considered would treat waste water produced at the site, thereby reducing the need for potable water and reducing the annual utility bill for both water and sewer. If found to be financially feasible, construction is expected to start by later spring or early summer of 2016.

**Cooling Tower Water Softener Systems** – Continuing installation of Advanced Water Savings Technology at County facilities. This technology will reduce water usage by eliminating blow down to the sewer and remove water treatment chemicals. This technology has already been installed at the County Operations Center and County Administration Center. Annual water savings at these sites are estimated to exceed 6.5 million gallons. Another eight facilities will receive this system by spring of 2016.
Energy and Water Efficiency and Utilization

Pine Valley Park Ball Fields – a project to convert natural turf sports fields to synthetic turf fields is underway and is expected to reduce water use by over 30%.

Kearny Mesa Juvenile Detention Facility – A project is in scope development to perform a series of building retrofits for energy savings, as well as full renovation of onsite landscaping for water conservation. Overall annual energy savings are expected to exceed 700,000 kWh and water savings are estimated at over 6.5 million gallons a year.

High Performance Buildings – Operations and Maintenance. This project will 1) Create a methodology to ensure that County LEED certified facilities continue to operate to the highest sustainable standards 2) Prepare for the process of LEED-EBOM certification of existing buildings and 3) Institutionalize sustainable standards for facility operations as standard practices. Ramona Branch Library is the location for the pilot project.
Green Design and Construction for New Facilities

The following facilities are under design or expected to be approved for design and construction during fiscal year 2015-16. The buildings will all be built to LEED standards and if possible, will also be Zero Net Energy buildings:

- Assessor/Recorder/County Clerk El Cajon Facility
- Imperial Beach Library – in design
- Borrego Springs Library
- Pine Valley Fire Station
- Crime Lab – in design
A new 10 year contract to provide **Direct Access Energy Services** including electricity and natural gas has been executed. This contract **allows the County to continue to provide** a dependable, secure source of energy at **reasonable pricing**, instead of just accepting whatever SDG&E decides to charge for energy. It is expected that significant savings will continue through use of this service. Last year alone, this savings exceeded $4,000,000.
Distributed Generation System Deployment

Further procurement of solar photovoltaic system(s), Advanced Battery Storage and/or Fuel Cells via a power purchase agreement(s) is being considered. The purpose of this effort is to increase the County’s renewable energy portfolio, diversify the County’s electricity purchasing choices, minimize the risk of increased energy costs, and ensure predictable and affordable pricing.
Smart Building/Smart Grid Technology Deployment

Enrolling in Demand Response program through SDG&E helps curtail energy demand through temporary reductions in energy load during hot days. A Demand Response event typically lasts for 4 hours and will be controlled by the County via the Centralized Building Automation System technology.

**GOALS**
- Prevent loss of service
- Save utility costs
- Meet Climate Action Plan goals
- Comply with Title 24 regulations

**BENEFITS**
- Financial incentives
- Cost avoidance
- Leadership
- Ease of implementation

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Monitoring and Reporting

Continuing Greenhouse Gas Emissions and Energy monitoring and reporting.

The County reports annually on greenhouse gas emissions reductions through The Climate Registry.

Using Energy Star Portfolio Manager to benchmark the performance of all County facilities over 10,000 sq. feet. This free on-line tool will help to measure and track energy use intensity and water consumption.
Vehicle Fleet Fuel Efficiency and Utilization

Implementing the 2015 – 2020 Green Fleet Action plan.
The following activities are underway:

**Vehicle replacements**
Gas fueled sedans will be replaced with Hybrids, EVs, or compact cars.
Gas fueled utility vehicles will be replaced with Propane fueled vehicles.
Gas fueled patrol vehicles will be replaced with High efficiency gas fueled vehicles.

**Mobile maintenance**
The mobile maintenance program will be expanded.

**Fuel switching**
Diesel fuel used in utility vehicles will be replaced with Biodiesel fuel.

**Vehicle pooling**
Shared vehicles using Key Valet will be tested at the COC which will potentially reduce underutilized vehicles.
Communication and Training

Scheduling staff to take Building Operator Certification (BOC) and other Trade Professional courses, such as North American Technician Excellence (NATE) at the SDG&E Energy Innovation Center where they will learn about energy efficient operations and building systems. BOC and NATE are nationally-recognized training and certification programs.

Submitting an application to the Institute for Local Government for the 2015 Beacon and Spotlight Awards. Awards will be presented at the Annual Conferences of the League of California Cities and the California State Association of Counties in the fall.
Waste Reduction and Recycling

Contracted for new Trash and Recycling services to maximize cost-efficiencies and increase recycling. The new contract provides comprehensive collection and waste resource management services to eliminate, reduce, re-use, recycle, compost and process or dispose of specified recyclable and compostable materials generated within County facilities. The goal is to meet the State of California landfill diversion requirements (AB341 & AB1826) and to save money for the County.
Community Projects Underway

The following efforts are underway and are expected to complete by June 2016:
Regional Collaboration

Donated an Earth Tub, an in-vessel composting unit to the Ramona Unified School District (RUSD) and assisted in the implementation of a Food Waste Prevention program. Using the EPA Food Waste Hierarchy, staff and students operate the program prioritizing reduction of food waste, food donation, feeding animals and composting the remaining food waste.

Food donations are made to Ramona Food and Clothes Closet, a local food pantry. Food suitable for animals is given to the onsite 4-H club’s animal husbandry projects. Finished compost is used for school gardens and landscapes.
An **Active Transportation Plan** is being developed that will serve as a master plan and policy document to guide the development and maintenance of active transportation infrastructure; sidewalks, pathways, trails, bike lanes and multi-use paths, as well as Safe Routes to School programs for the unincorporated County.

The County is currently developing a Climate Action Plan (CAP) in order to identify **strategies for reducing greenhouse gas emissions** within the unincorporated County. The CAP will include GHG analysis, GHG reduction targets, strategies, measures, actions and implementation planning.
Education and Outreach

Continuing to provide presentations to schools and adult groups, compost workshops, reduced-cost compost bins, composting demonstration sites, community recycling events and hotline and online database services for waste, recycling and household hazardous waste disposal options.
Collaborating with Feeding America San Diego to create a guide that discusses how to reduce food waste at grocers and food facilities. It will help business owners understand the benefits of food donation to their bottom line, the community, and the environment. It explains how to implement a food donation program simply and easily while incorporating safe food handling practices.
Recycling

The Live Well San Diego Food System Working Group is instituting a “Too Good To Waste” campaign for County residents. This effort will offer guidelines for short and long term storage, quick cooking guidelines and tips to use up leftovers. The campaign can be adapted for web, public education presentations/outreach and brochures.
The first phase of the Board directed **Comprehensive Renewable Energy Plan** is currently being developed. The first phase will outline the existing renewable energy resources available within the unincorporated County, an overview of the renewable energy industry in San Diego County and the potential for growth. The phase one report will also include a discussion of incentives, policies and best management practices in other jurisdictions and the potential for implementing similar policies in San Diego County.