

Local Government Energy Efficiency

Best Practices

MUNICIPAL OPERATIONS

City of Huntington Beach

Location: Orange County

Population: 190,000 (2012 est.)

SUMMARY

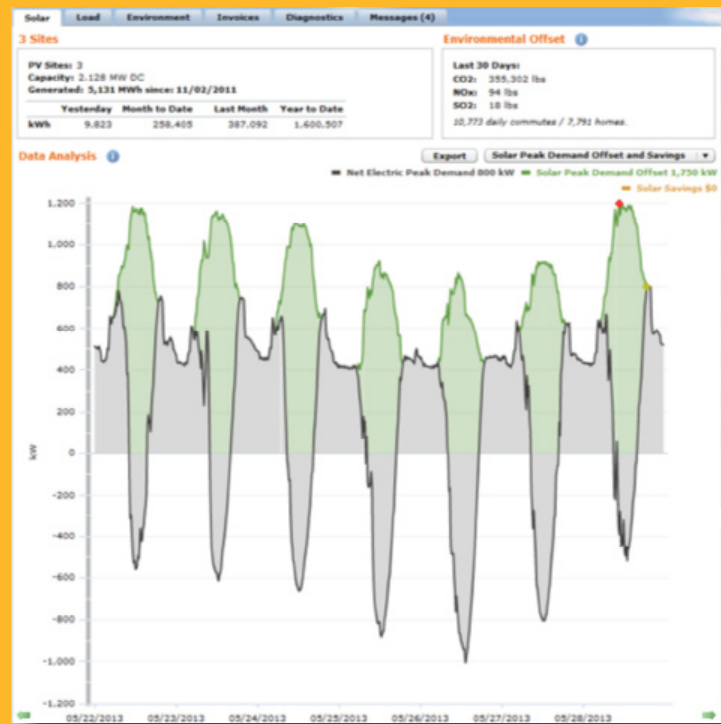
In 2008, City Council created a new Energy Project Manager (EPM) position. The City's departments are not charged utility costs in their annual budgets, so the position was located in the City Manager's office.

A prior Integrated Demand Side Management (IDSM) audit, which looked at energy efficiency, conservation, demand response and renewables, paired with AB 32 strategic planning goals, created a larger opportunity to adapt and integrate the full suite of IDSM tools in City operations.

City-appropriate IDSM activities tend to be wider-ranging and require a more diverse set of skills than other large facility IDSM management. IDSM for local governments requires additional layers of adaptation. This is because typical energy management tools were developed for more intense energy users like campuses or military bases.

To date, the City has successfully completed 17 diverse energy management initiatives, all of them competitively bid.

INTEGRATED DEMAND SIDE MANAGEMENT*



One week load profile for 3 solar sites.

PROGRAM HIGHLIGHTS

- The City's energy management program has created over \$600,000 in annual avoided costs and achieved 26% reduction in utility electricity use and 7% reduction in natural gas use.
- The City completed a 2.13 MW Solar Power Purchase Agreement (PPA) at 3 sites that provides \$1.5M net present value (NPV) and provides 12% of the City's electric use, on-site and renewably. The system provides 70% of the Central Library's annual energy need.
- The City is leading by example for the community by adapting a wide variety of IDSM initiatives.
- The City created a utility-owned streetlight (LS-1) purchase and upgrade calculator to analyze the potential to re-structure outsourced street lighting services.

* Integrated Demand Side Management incorporates energy efficiency, demand response and distributed generation programs to leverage opportunities to maximize energy savings for customers.

Integrating ISDM

LESSONS LEARNED

- Projects always take longer than expected. One potential solution is to establish an opportunity cost value per day to focus the stakeholder's attention. For example, the utility ISDM audit from 2008 identified several measures, one of which took over five years to implement, earning a final incentive of less than \$3,000 on a project cost of \$25,000. It eventually provided savings of \$8,000 annually, for an opportunity cost of \$40,000 (5 years times \$8,000 per year) or \$21.91 per day. The opportunity cost of delaying was more than the total project cost.
- Utility program funding cycles don't always coincide with local government funding cycles. This can be challenging for projects that span multiple utility program funding cycles.
- Demand Response (DR), which changes the electric usage by end-use customers from their normal consumption patterns to alter the timing, level of instantaneous demand, or their total electricity consumption, is a required activity in utility local government partnership programs. Utility incentives typically pay for automated DR improvements, where the utility controls the reduction activity. However, the Net Energy Metering tariff is not in alignment with DR. To date, when a solar system is exporting energy, DR programs will not recognize DR measures, such as shutting off chillers or fountains. This issue will likely require policy direction from the CPUC.
- Inevitably, there are conflicts between customer need-driven energy management and the highly-planned and regulated programs typical of a utility-centric ISDM program. This challenge can be met by partners coordinating and working together. Energy managers from government and utility partners must sometimes follow the other's lead to overcome conflicts.

THE REST OF THE STORY

In 2008, City Council created and filled a new Energy Project Manager (EPM) position. The City's utilities budget (approximately \$6.4M for electricity, gas and water) is not charged directly to city departments, so the position was located in the City Manager's office.

Prior to hiring the EPM, other city staff had completed some interior lighting retrofits and received an ISDM audit from the utility. However, this new role, combined with AB 32 and California Long-term Energy Efficiency Strategic Plan goals, created a larger opportunity to adapt and integrate the full suite of ISDM tools in City operations: energy efficiency, demand response, distributed and renewable energy, and education.

To date, the City has successfully completed 17 diverse energy management initiatives, all of them competitively bid.

Why is comprehensive ISDM relatively rare in medium-to-small local governments compared to other sectors of the economy? Partially because the activities for city-appropriate ISDM tend to be wider-

“[T]his new role, combined with looming mandates, created a larger opportunity to adapt and integrate the full suite of ISDM tools in City operations.”

ranging and require more diverse skills than other large facility energy management or ISDM solutions. ISDM for local governments requires additional layers of adaptation. This is because typical energy management tools were originally developed for more intense energy users, such as campuses or military bases.

This is a partial list showing the variety of projects accomplished through the City's EPM and ISDM program, with associated costs and savings:

- * Utility bill audit resulted in \$60K in annual savings.
- * Benchmarked City facilities.
- * Retro-commissioning (RCx) on two facilities – \$570,000 costs for \$330,000 in annual avoided costs.

[> more...](#)

Integrating IDSM

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- * Feasibility, CEQA, 30% conceptual designs, entitlements and bidding for solar projects at eight city sites - \$250K costs paid by EECBG grant.
- * Large-scale solar PPA award and construction – no upfront costs, power cost equal to utility power, and City-retained Renewable Energy Credits (RECs), \$1.5M net present value over two year life, and \$150K reimbursement for City's costs (permits, CM, contingency).
- * Energy Action Plan adopted.
- * Deeper retrofits with maintenance savings – Longer payback projects made possible from energy savings potential, \$3M in costs and \$240K annual avoided costs.
- * Thermal Comfort policy and procedures – estimated savings of 1/2 maintenance FTE.
- * Regional energy management system implementation (for five cities) – creating \$91K annual savings for Huntington Beach alone.
- * Collaborated with LA County to form the Regional Energy Center pilot program to provide as-needed IDSM expertise to eligible local governments – \$400K in grant funding from Southern California Edison.
- * Street light rate case with Coalition for Affordable Street Lights (CASL) – \$15K in costs and \$440K of savings over three years.
- * Street light system purchase, LED upgrade, series circuit upgrade and long-term maintenance. Projected economics at 10% savings over business as usual, plus new infrastructure, maintenance, and white light crime prevention benefits.

LEARN MORE

Huntington Beach Goes Green:

www.surfcity-hb.org/residents/green_city/

Energy Action Plan:

www.surfcity-hb.org/residents/green_city/hb-eap-adopted.pdf

GAINING POLITICAL SUPPORT

The primary challenge facing City Council from 2008 to 2012 was fiscal. This fact led staff to use a profitable sustainability approach with tag lines such as eliminating energy/fiscal waste. The energy management program's agenda items at Council have enjoyed unanimous support over the years at least partially due to this approach.

Staff specifically, did not pursue non-profitable IDSM until all of the profitable opportunities had been implemented. To date, staff has not run out of profitable IDSM. It is a renewable resource.

Historically in Huntington Beach, policy tends to follow successful programs. Yet funding often requires policy to proceed programmatic funding. This can leave energy management programs with a chicken or egg problem.



City Hall ADA and Visitor Parking with 10% Solar Panel Array Visible

Sustainability Guide:

www.surfcityusa.com/surf-city-ecotourism/sustainable

Sustainable Surf City:

www.facebook.com/SustainableSurfCity

Local Government BEST PRACTICES

SIMILAR PROGRAMS

■ **Southern California Regional Energy Network** - The California Public Utilities Commission agreed to fund the Southern California Regional Energy Network (Energy Network) to serve local governments, public agencies and their constituencies in the Southern California Edison (SCE) and Southern California Gas Company (SCG) service territories. The program will launch in the summer of 2013 and is the successor to the Southern California Regional Energy Center, which was created earlier by Los Angeles County and Huntington Beach. The Energy Network will have a broader mandate and scope than SoCal-REC (www.socalrec.com).

The local government services portion of the Energy Network is able to provide staff support to local governments to integrate all aspects of IDSM into their operations. The Energy Network will offer unbiased third party technical expertise, access to financing, and program staffing to help from energy efficiency project inception to completion at no cost. These services will address some of the most common barriers that prevent many local public agencies from adopting IDSM energy saving measures, the lack of expertise and resources.

The Energy Network aims to create a peer network of engaged public agencies that take concrete actions to save energy and help their communities do the same.

For more information about this case study:
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Funded by California utility ratepayers and administered by California's investor-owned utilities under the auspices of the California Public Utilities Commission.

Municipal Operations

ADDITIONAL RESOURCES

■ **ICLEI–Local Governments for Sustainability** offers a suite of resources to aid local governments in implementing energy efficiency measures and reduce greenhouse gas emissions.

www.californiaseec.org

■ **The Institute for Local Government's Climate Change Program** provides resources, information, and recognition to help local agencies reduce greenhouse gas emissions and save energy.

www.ca-ilg.org/BeaconAward

■ **The Local Government Commission** provides many free resources to assist local governments in reducing greenhouse gas emissions and energy use including newsletters and publications, fact sheets, model projects, and articles.

www.lgc.org/SEEC

Investor-owned utilities offer incentives and other assistance to businesses.

PG&E: www.pge.com

SDG&E: www.sdge.com

Southern CA Edison: www.sce.com

Southern CA Gas: www.socalgas.com

Check with your municipal utility for similar programs.