

UTILITY SUSTAINABILITY ROUNDTABLE 2013



California
Sustainability
Alliance

www.sustainca.org

The California Sustainability Alliance is an innovative market transformation program managed by Southern California Gas and funded by California utility customers under the auspices of the California Public Utilities Commission. The Alliance is operated by Navigant.



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INTRODUCTION, GOALS, AND OBJECTIVES

The California Sustainability Alliance conducted a Utility Sustainability Roundtable in September 2013 to gather representatives from southern California utilities, water agencies, and cities to share ideas and implementation strategies for collaborative sustainability initiatives. This document summarizes the dialogue between the participants and is intended to provide other entities and the general public with insight into the vision for overcoming barriers to sustainability along three key veins. The water-energy nexus, aligning city planning and utility incentive cycles, and cap-and-trade are all issues involving multiple entities. Thus, collaboration in these areas is not only beneficial, but required for successful implementation of innovative ideas for moving toward a sustainable future for California. The following table displays the participants in the half day event.

ORGANIZATION	NAME, TITLE
Anaheim Public Utilities	Earl Lasley, Account Manager
Department of Water Resources	Qinqin Liu, Senior Environmental Scientist, Water-Energy Coordination and Climate Change Mitigation
City of Huntington Beach	Lena Luna, Energy Intern Supervisor
Imperial Irrigation District	Bruce Townsend, Interim Superintendent Alternative Energy
Irvine Ranch Water District	Amy McNulty, Water Efficiency Supervisor
Los Angeles Department of Water and Power	David Jacot, Director of Energy Efficiency Gretchen Hardison, Environmental Affairs Officer
Metropolitan Water District of Southern California	Carolyn Schaffer, Resource Specialist Kathy Ramos, Associate Resource Specialist
City of Riverside / Riverside Public Utilities	Ryan Bullard, Sustainability Coordinator / Senior Account Manager
City of Santa Monica	Russell Ackerman, Water Resources Specialist Matt Henigan, Energy Efficiency Engineer
City of Simi Valley	Cynthia Sabatini, Department of Environmental Services
South Bay Cities Council of Governments	Marilyn Lyon, Environmental Services Analyst
Water Energy Innovations	Laurie Park, President
West Basin Municipal Water District	Elise Goldman, Water Conservation Program Specialist
Southern California Gas Company	Frank Spasaro, Manager of Energy Efficiency Partnerships Ganesh Venkat, New Construction Supervisor Carlo Gavina, Program Manager
Navigant	Craig McDonald, Managing Director Karin Corfee, Managing Director Amul Sathe, Associate Director Kristin Landry, Senior Consultant

THE MEANING OF SUSTAINABILITY

Southern California's utilities and local governments are being called upon to reduce both energy and water use and lower greenhouse gas emissions, all as demand continues to increase¹. Regulation from state agencies imparts a particular view on the meaning of sustainability, and cities have their own unique perspectives as they cater more directly to their citizens. For utilities, sustainability focuses both on environmental stewardship of natural resources so that they are available for future generations and efficiency in delivering a reliable service.

Sustainability also has an essential economic component, acknowledging that initiatives must be cost-effective. The most prominent initiatives around sustainability achieve savings through efficiency measures, and for utilities, this extends to the ability to give customers a better return on investment for implementing their own efficiency measures. With new players on both the supply and demand sides of the equation, everyone is part of the solution.

“ Sustainability means we help steward natural resources for the foreseeable future, and do so cost-effectively.

Gretchen Hardison, Los Angeles Department of Water & Power

WATER-ENERGY NEXUS

The water-energy nexus is a broad topic that can include multiple customer segments, policy issues, barriers, and solutions. It involves the energy required to deliver water, including transportation, treatment, and temperature adjustment. Water is also used in power generation – over 40% of the nation's freshwater withdrawals are used for power plants, primarily for cooling². These intersections mean that saving water saves energy and vice versa.

Creating a sustainable water-energy nexus will require collaboration. It will have to include engagement at the customer level to achieve water and energy conservation. Water supply will need to come from more local and less energy-intensive resources. Water systems must become more energy efficient, and energy systems must become less water-intensive. It may even be possible to take advantage of more opportunities to generate electricity from the water system. These things are happening within each system, but the synergy brought about by coordinated efforts has not yet been fully realized.

“ As a regional water wholesaler that imports from northern California and the Colorado River, sustainability is core to what we do.

Carolyn Schaffer, Metropolitan Water District of Southern California

“ It's difficult to share information. How can we coordinate if we can't share data?

Carolyn Schaffer, Metropolitan Water District of Southern California

¹ <http://www.energy.ca.gov/2013publications/CEC-200-2013-004/CEC-200-2013-004-SD-V1.pdf>

² environmentalresearchweb.org/cws/article/news/52486

The Pacific Institute’s recent survey of water and energy managers identified 15 barriers to coordinated water-energy programs in California. It asked participants to rank the identified barriers from 1 (not a barrier) to 4 (significant barrier) . Among the top five barriers, the three core issues were funding, policy, and coordination. Water and energy utilities must work together to overcome these barriers. Efforts cannot be one-sided. (See Table A)

TABLE A.

TOP 5 BARRIERS (OUT OF 15)	AVERAGE RANKING	CORE ISSUES
Water sector has limited or inconsistent funding available to invest in combined programs	3.14	Funding
Limited staff time	3.13	Funding
Insufficient guidance about how to equitably allocate costs and benefits among project partners	3.13	Policy
Water-related pricing policies (e.g., few mechanisms for cost recovery and concern about revenue stability)	3.1	Policy
Lack of established relationship between potential water and energy partners	3.03	Co-ordination

The water-energy nexus is not readily apparent to customers. Most people don't understand how much energy it takes to deliver water. The most tangible link between water and energy is the embedded energy in hot water, and utilities cannot simply reward customers with decreased rates because they do a good job of conserving water. There are multiple opportunities to initiate joint water-energy messaging to customers, but these opportunities are currently underutilized. Energy Upgrade California and Save Our Water jointly sponsor an effort to educate the population about the water-energy nexus.³ However, this effort is not specific to each customer's water and energy suppliers, savings opportunities, and incentives.

³ https://energyupgradeca.org/save_water_and_energy

Rebates are a key incentive tool in the world of water and energy efficiency. Utilities often use audits to identify rebate measures a customer is eligible to receive. When a customer's water and energy are supplied by different utility companies, referring a customer to additional audit or rebate opportunities they may be eligible for at the other utility should be an established part each utility's audit process. An even more customer-friendly alternative, and demonstrated successful customer engagement model, is to perform the audits for water and energy measures simultaneously. This may best be integrated under a direct install or whole house program. It may also be possible to include one measure as a prerequisite to another. This pairing of a less-attractive measure with one of the more cost-effective measures available is one way to implement less cost-effective measures.

There are many challenges that act as disincentives to coordinated efficiency programs. Determining where funds come from or where service territories do and don't overlap can be tricky. The difference in regulatory bodies for the investor-owned utilities (IOUs), the California Public Utilities Commission (CPUC), and the publicly-owned utilities (POUs), the California Energy Commission (CEC), can also cause incongruities that present barriers to collaboration. It can even be challenging to coordinate the actions of different players within the water sector, as there are state, wholesale, and local level water agencies.

These barriers are not insurmountable. For example, on the issue of sharing customer data, collaborative efforts have demonstrated that it may be possible to simply confirm data between utilities rather than go through the more lengthy data request and confidentiality protocols associated with transferring customer data from one entity to another. It also helps to have a water-energy "champion" – someone in a position of authority who understands both water and energy. This person should work well with people, so that they can gather buy-in and garner support from both sides for bridging the gap.

“ *The policy question is:
Can utilities claim
embedded energy savings
from the customer all the way
back to the water source?*

Amul Sathe, Navigant

ALIGNING CITY PLANNING AND UTILITY INCENTIVE CYCLES

City planning and funding cycles often do not coincide with utility incentive cycles. This is a disadvantage to cities in need of technical and financial support as they try to renovate municipal facilities. Cities often have scheduled building renovation projects, but cannot include utility incentives as they budget because of uncertain availability. IOUs are bound by the required approvals from the CPUC to continue funding programs from cycle to cycle, but POUs have found that they have more flexibility to offer programs on a rolling cycle.

Again, education of the broader public is needed in support of efficiency measures. With funding already tight, it can even be difficult to sell the finance department on demand-side measures over supply-side resources. Though there is a clearly articulated loading order from the California Energy Action Plan and the CPUC that prioritizes efficiency and demand-side resources over renewable generation⁴, cost-effective energy efficiency projects do not always come easily.

More foresight on the availability of funding would also help prevent program failure. This works in both directions. If a utility's incentive program cycle ends and the program is discontinued unexpectedly, there can be wasted effort on the city's part because their project becomes infeasible. Conversely, if the city has a municipal utility that is partnering with a larger utility on a coordinated effort, but the city cuts the budget for the POU's programs, the IOU may cut the program entirely rather than cover the cost.

Simplifying things for the customer in order to increase market adoption should be the primary objective when utilities look to coordinate on combining program offerings. For example, an efficient clothes washer saves both water and energy. In overlapping territories, this means a POU and an IOU may both be able to claim savings and thereby offer a rebate on that same efficient clothes washer. Increased adoption may be achievable by simplifying the customer interaction with a single application and rebate check from just one of the utilities. In this example, one utility would pay the rebate to the customer on behalf of both utilities and would subsequently invoice the other utility for their share of the rebate paid. This extra effort may also reward both utilities in the prevention of double-dipping on incentives.

“ *As a POU, we aren't as rigidly bound by funding cycles as the IOUs are. We fund what we commit to, but we don't over-commit.*”

David Jacot, Los Angeles Department of Water and Power

“ *A rolling cycle is the solution – programs offered as they're needed.*”

Matt Henigan, City of Santa Monica

⁴ http://www.energy.ca.gov/energy_action_plan/index.html

“ It’s a good program, but as LADWP moves aggressively to eliminate coal-fired generation from our supply mix by 2025, we don’t anticipate a significant need to purchase credits between now and then. However, after 2025, that picture could change.

David Jacot, Los Angeles Department of Water and Power

CAP-AND-TRADE

In 2006, the California Legislature passed and Governor Schwarzenegger signed AB 32, the California Global Warming Solutions Act, which requires the state to reduce statewide greenhouse gas (GHG) emissions to 1990 levels by 2020. Cap-and-Trade is the market-based mechanism developed as part of the implementation of AB 32. As the cap decreases, and demand for allowances rises, energy efficiency will become much more competitive as an emissions reduction strategy.

Local governments are essential partners in achieving California’s aggressive GHG reduction goals, and the Alliance is currently conducting a GHG initiative project to test an innovative concept for local governments that stems from the emerging cap-and-trade market. The framework is constructed such that utilities financially compensate local governments for undertaking projects with measurable energy savings that ultimately achieve GHG reductions for the utility.

Electric and gas utilities are some of the largest entities that fall under the cap. A utility can comply by reducing its own emissions, buying allowances at auction or from entities with excess, or buying offsets. The cap-and-trade program is designed to provide covered entities the flexibility to seek out and implement the lowest-cost options to reduce emissions and meet their compliance obligations. Each covered entity must surrender enough compliance instruments, either allowances or offset credits, to cover their reported emissions (one compliance instrument for every mtCO₂e emitted). Figure 1 illustrated a simple example of how the cap-and-trade system works.

FIGURE 1.

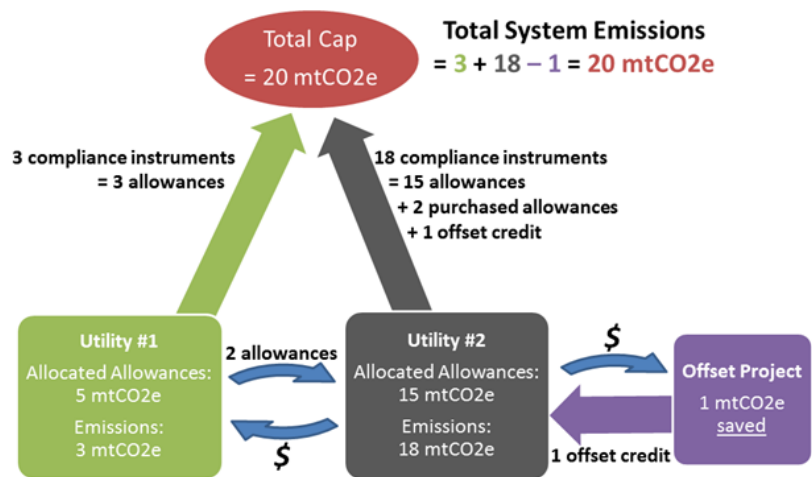


Figure 1. Cap-and-Trade is the market-based mechanism developed as part of the implementation of AB 32.

The concept presented centers on developing a framework wherein local governments are financially compensated by their utilities for undertaking projects with measurable energy savings that result in GHG reductions. These reduced emissions help the utilities meet their compliance obligations under the California GHG cap-and-trade program. The value to the utility of these emissions reductions can be measured in either the avoided cost of purchasing a compliance credit (allowance or offset) or in the revenue generated by selling an excess allowance. The utility should have an economic incentive to provide a payment for municipal energy efficiency programs if the marginal cost of the energy efficiency savings is less than the cost of compliance (either the marginal cost of achieving an emissions reduction or the cost of a compliance credit, whichever is lower) plus the avoided energy costs. Based on the value of GHG reductions, the utility may be able to provide additional funding for municipal efficiency projects, as shown in Figure 2. Assuming a value of \$15 per metric tonne of CO₂ sold for 8 years, the value of the emissions reductions from an energy efficiency investment could potentially offset up to one fifth of the project capital cost.⁵ As the value of the carbon emissions reductions increases, the value of the energy efficiency projects would rise and create a growing potential funding source for local governments.

“ Local governments have to deal with all these different initiatives.

Qinqin Liu, Department of Water Resources

FIGURE 2.

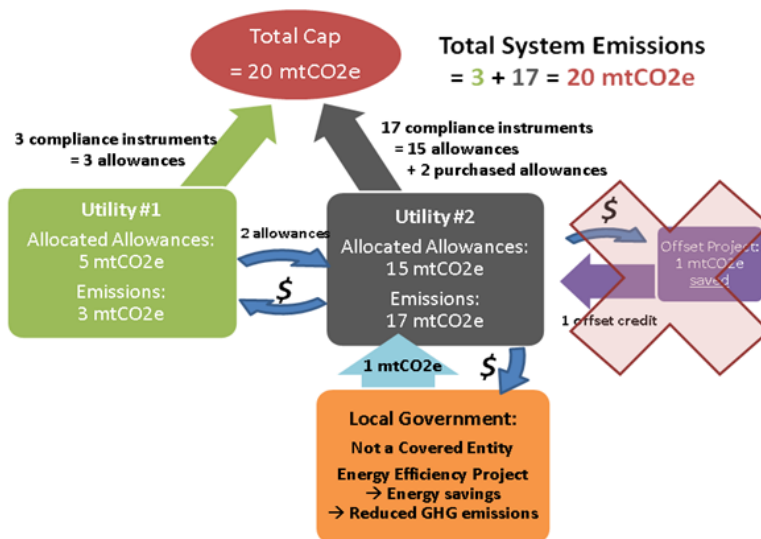


Figure 2. With a market value for carbon reductions, there are opportunities for local governments to receive funding for additional energy efficiency projects.

⁵ For more information visit: www.co2toee.com

The local government may thereby have an additional funding source from their load serving utility for energy efficiency projects subject to the terms and conditions of an Agreement developed by this Alliance initiative. Measurement and verification (M&V) would be conducted post-retrofit similar to custom efficiency projects at a level of rigor agreed upon by both parties. This funding mechanism is outside of, and in addition to, traditional ratepayer funded utility rebates because it would come out of the utility's compliance budget, rather than their efficiency program budget. The California Climate Action Reserve has suggested this as a concept that should be developed and tested.

The feedback received was that this concept will only be attractive to utilities in need of help complying with the GHG emissions reduction regulations. Nevertheless, it was also recognized that this concept may also be applicable beyond local governments, as there are other entities that remain uncapped who could also help a utility meet their compliance obligation through these incentivized energy efficiency projects.

MOVING FORWARD

The recent example of Southern California Gas Company (SoCalGas) and Los Angeles Department of Water and Power (LADWP) developing a Memorandum of Understanding (MOU) to coordinate on programmatic initiatives provides a valuable lesson on how two utilities are working proactively to increase market adoption of energy efficiency and water conservation measures through joint initiatives. Examples of best practices should be captured in a guidebook to help other utilities and water agencies establish similar initiatives.

The following two action items were identified for the Alliance during the meeting.

Develop a guidebook. A simple document with case studies of best practices and successes on matters related to coordination across multiple entities would be very useful to utilities initiating collaborative efforts. The Metropolitan Water District of Southern California (MWD) is currently working with Irvine Ranch Water District (IRWD) on a program that may be ready to contribute lessons learned by the end of 2014.

This set of guidelines could cover the major issues that currently require high accuracy in accounting for savings, such as cross-subsidization. It could also address ways to streamline the process for accounting for savings, starting with the customer's rebate application process. Suggested ways of streamlining this process, by combining the applications for both water and energy utilities, digitizing the process and putting it online, and enabling the utilities to share this information with each other, could all be developed for this document.

Develop a draft Memorandum of Understanding (MOU). An agreement, similar to what SoCalGas and LADWP have established with their MOU, that utilities could use to establish working relationships between multiple parties, would help to facilitate more collaboration. This draft MOU could build upon lessons learned from implementing the existing innovative effort, as it can be burdensome to the utilities to present integrated material to customers. The hope is that by collaborating on programs, adoption of promoted measures would increase in the overlapping service territory.

A standing long-term MOU between utilities would also provide stability in funding for program implementation, but getting it recognized by city governments may be challenging. Having a more standardized document that reflects tested best practices would make the proposed agreement more palatable in such a regulated industry.

“ We've got the MOU, now we're implementing it. Hopefully we can transfer that knowledge over to other utilities wanting to collaborate for more effective efficiency programs.

Gretchen Hardison, Los Angeles Department of Water and Power

“ For small agencies, it's incredible what bigger utility funds can do, and the customer reach they have.

Carolyn Schaffer, Metropolitan Water District of Southern California

The success of widespread sustainability depends on amplified levels of collaboration across utilities (IOUs and POU's), water agencies, regional planning agencies, and local governments.

“ Sustainability is the right thing to do, so it's easy to support.

Frank Spasaro, Southern California Gas Company

CONCLUSION

Energy, water, and emissions are all linked, and the need for increased cooperation among different entities is becoming more apparent as we move toward a future with more constrained resources and aggressive GHG emissions reduction goals.

With respect to the water-energy nexus, there are multiple opportunities to initiate joint water-energy messaging to customers. Energy Upgrade California and Save Our Water provide examples of customer educational campaigns that address both water and energy issues. A successful customer engagement model includes minimizing touch points with the customer through integrated water-energy audits and combined rebates for energy and water measures.

In addressing the mismatch between city budget cycles and utility incentive cycles, flexibility and communication are the keys to realizing maximum achievable savings. Municipal water utilities should seek to develop MOUs with their electric and gas utilities to address funding cycle issues. Projects take time, and the financing structure must accommodate a longer-term planning horizon.

AB 32 sets aggressive statewide GHG emissions reductions goals. As capped entities, utilities must now explore innovative ways to reduce their GHG emissions, including examining partnering with local governments to reduce energy demand through energy efficiency initiatives. With rigorous M&V and an Agreement with the load-serving utility, it may be possible for local governments to receive an additional funding source for energy efficiency projects. This is a potential new source of funding for local government projects in the future, particularly as the market value of CO₂ increases.