

Thursday - June 15th, 2017
Water-Energy Nexus: Bridge the Gap in Your Community

Replicable Water Energy Solutions

Danielle Dolan (DD) - Water Program Manager, LGC
Cody Coeckelenbergh (CC)
Cory Downs (CD)
Susan Wright (SW)

Intro: what exactly is the water energy nexus?

- The fact that the resources when used, are inextricably linked.
- The single greatest use of energy in the state of California, is the State Water Project (SWP), bringing water over the Tehachapi pass, which uses *3% of the state's electricity* every year.
 *did not hear exact number for sure
- Nearly 1/5 of all CA's electricity use if for water
- Most of that is for end-user hot water (residential) and water supply
- The energy sector uses a ton of water, every form of energy production uses water at some point. Different sources uses different amounts of water. Biofuels use the most water; solar uses the least. What this illustrates is that some of our most renewable energy sources are also the least water intensive. But every community is different, so maybe not every solution is perfect for everyone.

Think bigger and think beyond individual challenges, think about not only energy use, but also water intensity. Everything from climate change is interconnected, if you can decrease your demand of water, you reduce your energy demand. And vice versa.

LOGAN

The WE CAN project focuses on reducing water use and thus energy use,
3 prong approach,

1. Rebates offer rebates for native plants, rebates for irrigation projects, lead to
2. community education
3. professional training and development

We want to enable and empower Fresno to manage the project themselves and into the future. Partnered with lots of similar orgs with similar missions, such as Grid Alternatives, Habitat for Humanity. Lower water usage overall.

Danielle: Onto the water panel. -->

Cory Downs: Municipal planning scale
Title: Water Stewardship & Energy Efficiency

Water is a very important topic: Cory is part of the Office of sustainability, which is housed in the Economic Development team. Their mission statement considers the triple bottom line (People, planet, prosperity)

Water stewardship plan: One thing I like to remind people is that average residents don't see all the science and technicality, they see a utility bill and the lights on or off.

There are direct energy savings, Hot water (11%) and Cold water (3%)

The drought was a big energy saver because did not pump as much water across the state.

Five Overarching Actions:

- 1) Raise the Profile of Water Use and Reuse Performance
 - a. Talked about city wide challenge, to get groups involved
- 2) Promote and expand water capture and reuse
 - a. As we build more sustainable buildings, they slowly get more advanced, and so goals become more feasible for the next level.
- 3) Improve water efficiency and reuse capacity in the built environment
 - a. Make sure low hanging fruits are caught, everyone who wants a low flow showerhead can get a low flow showerhead. Still trying to figure out what the trigger is.
 - b. There are also some indirect connections, we want to get water from energy.
- 4) Encourage water efficient landscape Decisions
 - a. They have done really great work with water conservation ordinance, that is very strict. Another tool is the PACE financing, because it can be used for multiple resources, so example, solar system and artificial turf. Having a new financing tool for residents
- 5) Promote Green Infrastructure and low-impact Development.
 - a. Finding ways for cities to retain water.

Worked with local non-profit – The San Diego Foundation, San Diego Climate Collaborative. Vision was to eliminate waste.

Danielle: “so I've found that social is generally more water efficient out of necessity”

Sabarish Vinod (LINCUS) : Private utility scale

Session Title: Long-Term Energy Optimization Opportunities of CA Water Systems

Lincus was established in 2003, Offices in Tempe, AZ, Monrovia, CA, San Diego, CA Emeryville, CA

Energy Impact of Water

- In 2005, CEC found water related energy consumption accounted for 19% of state's electricity requirements.
- Total water Sector Electricity use is 19,000 (GWH).
- Energy is required to treat wastewater.

Linucs came up with WISE program – Water Infrastructure System Efficiency, targets majority water-energy users in SCE's, PG&E's, and SDG&E's service territory.

1. They look at water system, end to end,
 2. the amount of energy to source the water,
 3. take it to water treatment plan, and
 4. distribution system and then in Wastewater Treatment plant.
- The average efficiency of water pump is 53%, or up to 72%. Just by addressing the pump issue, there are significant efficiency gains to have.
 - It's important to break down water systems into different sections. With the advent of solar, what has happened is that about 7,000 megawatts, is coming from renewable sources. The average size of powerplant is 33,000 megawatts. ***not sure if I heard correctly***
 - Then finally, after addressing all these items, then you can go to water distribution system. Wastewater treatment plants in CA can all be self sustaining, every single one of them can be a net zero energy user. Unfortunately Cody could not make it today, but can reach out to him if needed.

Susan Wright (Ecology Action – based in Santa Cruz): MPO regional scale

Title: WaterLink: Pioneering Program Delivery in Disadvantaged Communities

Started as recycling center in 1970s, they are an implementer for a lot of energy watch programs, PG&E programs, bike safety plans to school, and now water

Ecology Action is Passionately drive to help people **take action today** that accelerates environmental and economic sustainability.

- “Helping people act now”
- They help homes, businesses, and schools in disadvantaged communities
- Funding comes from CADWP, and CA climate investments. And because of that it's a water and energy saving project.

The disadvantaged communities are based on cal enviro screen 2.0

WaterLink4 areas they are doing measures in

- **Residential** – door to door, installing low flow showers and aerators, rewards, and raffle for washers
- **Commercial**, targeting groceries and restaurants, and focus on faucet aerators, dish sink area,
- **Turf Replacement**, 50,000 sq feet.
- **Ozone laundry**,

The last two were not included in the second round, big energy savers

Key success factors, big enthusiastic team, including Multi-lingual team – English, Spanish, Vietnamese, Portuguese, Cambodian. A lot of this was to build trust.

Things learned, on the residential side, they don't get a lot of uptake, so door to door really helped. 90% of toilets they went into were water inefficient.

Door to Door is super efficient

Appointments aren't efficient for the team. Going to second round they added, neighborhood leader team. Winners will get a clothes washer.

Residents can get a \$300 voucher for plumbers to come back and fix any leaks they recently had fixed.

Small businesses are skeptical because many scams target small businesses. So they are working on testimonials, and etc

This service, residential door to door, takes less than 10 minutes. Commercial restaurants, maybe 1 hour. Little paper work helps to expedite the process. Savings are calculated through ARB and so there is consistency across program recipients, and these points can be made and expressed through a climate action plan.

Danielle: great Segway, the question is what is the most powerful of these three different strategies that can be applied to your community. – Time to share

1) Many of us at this table are from Utilities, when we are in drought, we are under a lot of pressure to have water reclamation, is it profitable or worthy to have water reclamation when there is no drought?

a. So there are many dimensions in that question, are you relying on groundwater?

b. We have brackish desal water. Brought up fountain valley desalination water, energy intensive. People don't like the idea of poop water

Danielle: question to the panel

What has been one of the biggest challenges to get your programs implemented.

Cody: One of our greatest challenges lie ahead, we've created a plan, but it's going to be hard to implement the plan, reaching out to other cities, funding. One of the things we'll do is try to leverage funds and networks, use the water plan to save energy, and how to have energy plans save water.

Sabarshi (LINCUS) the biggest challenge has been policy, getting policy to drive customers to push forward energy and water. So there are a lot of bills, solutions in the bills that are coming. One Of the biggest one is AB 802, which allows you to gauge a customer's baseline, so you can better assess the customer's needs.

Susan Wright: The thing that popped in my mind is getting our team together. Difficult to hire temporary workers, since it's seasonal, having to get people

Question: What would you like to see the future look with your program

Susan: We would like to see more extensive reach rather than just showerheads, possibly energy efficiency etc, and in a few years certain tools may not work properly,

Sabarshi: If you're able to get a wastewater district to go through each of those steps,

Cody: having control over city facilities, would like to see every city facility built with water saving features and education aspects in each of the buildings. And also the community level, it would be great to have a water independent chula vista and southern California. No run off. No water waste. Seeing a majority of drought tolerant landscaping. When I talk to people who have transitioned from water landscape to drought resistant, people say first and foremost that I don't have to maintain the garden as much.

Question from Logan: How have you used partnerships to leverage your goals

Cody: When we have a no cost energy/water assessment, there was a shift with the drought. A lot of people talked about energy savings back then but with the drought everyone wanted to save water. And if we can leverage that, then it will help us build better partnerships. Providing water education, that will help with energy efficiency.

LINCUS –

Susan: Working in Monterey bay, there is good name recognition. There was a hot water heater,

Danielle: talked about driving here this morning and how there was a grass fire on the way and that maybe if a little water was sprayed on them through the year, then maybe the rest of the year they wouldn't have fires and have to use crazy amounts of water.