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Exemplary Programs that Save Both Water and Energy: Case Studies and Recognition

Eric Mackres

American Council for an Energy-Efficient Economy

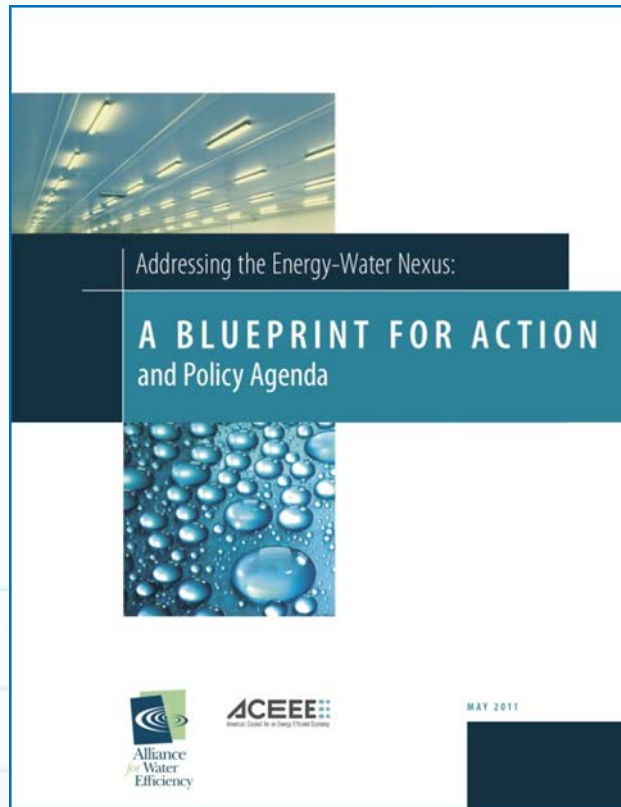
WaterSmart Innovations

October 4, 2012 – Las Vegas

The artificial water-energy divide



Energy-Water Blueprint for Action



aceee.org/white-paper/addressing-the-energy-water-nexus

- Joint effort of AWE and ACEEE published May 2011
- Supported by funding from the Turner Foundation.
- Workshop with ~50 experts from both communities
- Purpose: to identify the major research, program, and policy needs of the water-energy nexus for decision-makers and funders.
- Establish a national long term energy-water community.

Recommendations

1: Increase Collaboration

1-A: Establish ongoing water & energy working groups to increase cooperation and to share best practices.

3: Replicate Best Practices

3-A: Survey existing programs to identify examples of best practices programs exploring the water-energy nexus. Identify elements of success and replication potential.

Joint Working Groups

Four working groups established, following on the blueprint process, each based around one of our initial joint projects:

1. Codes, standards and tax incentives.
2. Water utility disincentives and ways to address them.
3. **Joint energy and water-saving programs.**
4. Research on energy-use connected to water and water use connected to energy.

Exemplary Programs Saving Both Water & Energy

- Describe programs and their lessons learned in a report aimed at utilities, regulators and other implementing stakeholders
- Emerging practice area
 - Variety of implementers, markets and sectors
 - Variety of motivations
- Highlight energy utilities promoting water efficiency, and vice versa. Identify opportunities to expand collaboration & joint programs.

Process

1. Develop Criteria
2. Call for Nominations
3. Expert panel to judge nominations
4. Write Report with case studies on best
5. Creation of Program Database with all
6. Public Recognition & Presentation of Awards

Past ACEEE Exemplary Program Recognition Efforts

- State energy efficiency
 - *States Stepping Forward: Best Practices for State-Led Energy Efficiency Programs – 2010*
- Energy utility energy efficiency
 - *Compendium of Champions: Chronicling Exemplary Energy Efficiency Programs from Across the U.S. – 2008*
 - update currently under development – 2013 release

Selecting Honorees

- Criteria
 - Direct Energy and Water Savings & other Benefits
 - Market Impacts
 - Cost Effectiveness
 - Customer Service and Satisfaction
 - Innovation
 - Transferability
- Honored as “Exemplary,” “Promising,” or “Sustained Achievement”

Program Database

Contact | Site Map | Energy Efficiency Links | Glossary | Privacy



Energy Efficiency Portals - About ACEEE + Newsroom Publications + Conferences & Events +

Home : [Energy Efficiency by Sector](#) : [Local Energy Policy](#) : Case Studies

Local Policy Case Studies

These cases describe efforts by local communities across the United States to improve their energy efficiency. Included are examples of notable initiatives across a variety of policy approaches, economic sectors, regions of the country, and community types. This collection is a work in progress and will continue to expand over time as we highlight additional efforts from around the country.

Sector: State: Keyword:

Policy Type:

Browse Case Studies

[Arlington Initiative to Reduce Emissions \(AIRE\)](#)
Location: Arlington County, Virginia
Start Date: 2007
Sectors: Commercial, Transportation
Policy Types: Climate Change Policy, Energy Efficiency Financing, Government Lead by Example Initiatives, Green Vehicle Market, Public Buildings, Retrofits, Utilities
Summary: A comprehensive initiative to reduce energy use and greenhouse gas emissions in county operations and to encourage more energy-efficient behavior and technology among businesses and residents

[Austin Energy Conservation Audit and Disclosure \(ECAD\) Ordinance](#)
Location: Austin, Texas
Start Date: 2009

Categories and Nominations

Open call: 54 total nominations from May 21 to July 21

- 19 - Residential (indoor or outdoor)
- 7 - Commercial (indoor or outdoor)
- 2 - Industrial (indoor or outdoor)
- 12 - Water/Wastewater Treatment and Conveyance
- 1 - Energy Supply or Generation
- 5 - Corporate/Government/Institutional Sustainability
- 1 - Agriculture
- 1 - Research, Development and Demonstration
- 6 - Cross-cutting/Other

Additional 25 submitted only for program database

A FEW “GOOD” PROGRAMS (...“EXEMPLARY” STILL CLASSIFIED)

Southern California Edison Leak Detection Pilot

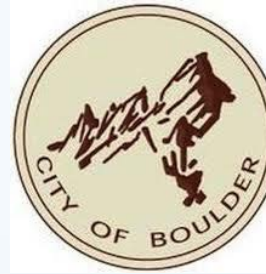


- Audit and pipe repair services for distribution systems in three water utilities
 - \$300K SCE budget, in kind from water agencies
- Annual savings
 - 83 MG achieved (263 MG still available)
 - 498 MWh achieved (1,663 MWh still avail.)
 - Pressure management: additional 32-82 MG avail.
- Best performing of 9 CPUC Embedded Energy in Water Pilots – low cost, high savings

Darden 15x15



- Corporate/restaurant sustainability, 2,000 sites
 - 2009 Goal: 15% water & energy savings per restaurant by 2015
 - By 2011, savings achieved: 17% water, 8% energy, \$18M costs
- Actions must meet same ROI as other capital investments
 - Green prototype for new restaurants buildings
 - “power up” schedules, “Green Teams”
 - equipment replacement (lighting, HVAC, cooking, pre-rinse, aerators, dishwashers, drip irrigation, remove dipper wells)
 - supply chain (e.g. truck routing, rail)



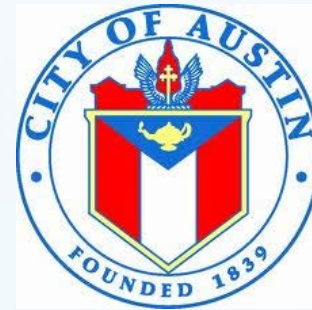
Governor's
Energy Office

Boulder Energy Performance Contracts



- Leveraged ARRA funds with EPC to improve municipal assets, contribute to GHG goals
 - \$14.8M in comprehensive improvements over 3 phases in 66 buildings, 1.5 million sq ft
- ~18 year payback, financed over 15 years
 - Annual savings: \$686,000, 2.8 MG, >6,000 MWh, >170,000 therms (efficiency, solar thermal & PV)
 - \$1.83M in equipment replacement value
 - 23% reduction in total CO₂ from municipal operations (~25% energy, ~8% water)

Austin Multifamily Energy & Water Efficiency Program



- One contact, one audit for water-electric-gas in high-consumption buildings
 - Free installation (aerators, showerheads) and rebates (washers, irrigation, lighting, HVAC, envelope, etc.)
 - Annual Funding: U.S. DOE Better Buildings Neighborhood Program (\$350K); utility revenues (\$100K)
- Contributes to ECAD compliance: 20% savings required for buildings above 150% of avg. consump.
- Annualized Savings: 1.25 MG, 6,203 kWh (embedded only) to date since Oct 2011

Common Characteristics

- Energy & water utility collaboration
- Sustainability or long-term planning focus (“enlarge the problem”)
- Bundling energy and water services and marketing to improve cost effectiveness
- Evaluating based on embedded energy in water, not just hot water savings

Possible Next Steps

- Additional analysis of energy & water utility collaboration opportunities and joint program models
- Bring additional attention to embedded energy issues and opportunities
 - e.g. green infrastructure, muni water systems, etc.
- Develop standard terminology, data collection framework and EM&V for joint programs

Report and Database Release

Coming in early November 2012 to

aceee.org/publications

More info:

- ACEEE Water and Wastewater Page: aceee.org/topics/water-and-wastewater
- Alliance for Water Efficiency: www.a4we.org

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American Council for an Energy-Efficient Economy

**Thanks.
Questions?**

Eric Mackres

Senior Researcher, Local Policy

emackres@aceee.org

202-507-4038