Water/Energy Cost Allocation

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PG&E Water/Energy offerings in 2014 drought

PG&E is prioritizing water-saving energy efficiency measures to help drought-affected customers and water agencies achieve water savings, including:

- Promoting water/energy products through programs to save >1B gallons/yr:
  - Clothes washers partnership with water agencies
  - Faucet aerators and shower heads through direct install programs
  - New rebates and program offerings for agricultural irrigation systems
  - Custom projects for industrial processes, HVAC, and other opportunities
  - New measures for food service facilities

- Conducting water/energy nexus projects to evaluate future potential:
  - Agricultural irrigation leak detection and soil moisture sensors
  - Water system optimization scoping project with foothills water agencies
  - Leak detection and repair for rural water agencies and irrigation districts

- Energy efficiency support for drought-affected customers:
  - Increased incentives for pump overhauls and pump tests
  - IDEEA-365 programs for SMB ag and water agencies scaling up
  - Considering new product and program no regrets offerings

- Collaboration on Title 20 code updates to achieve broad water conservation

Goals for Water/Energy Program Planning

- Expand water/energy nexus programs to help customers save water in historic drought
- Maintain focus of energy public purpose funds on projects which benefit energy customers
- Consistently calculate and record embedded energy savings from projects
- Operationalize Navigant water/energy models

Principles for cost allocation

1. How should we allocate W-E program costs and savings credit?
2. What factors should be considered in determining cost allocations?

Program design goal:

- Divide program costs between water and energy agency in proportion to system benefits

Flexibility needed for real-world implementation:

- Costs and benefits considered as part of a portfolio
- Regional averages used to plan and evaluate programs, with targeting to focus on highest-impact locations and agencies
- Evaluate cost effectiveness by comparing energy program investment to energy system benefit

Hypothetical Toilet Replacement Program

Cost effectiveness methodology for a hypothetical water efficient toilet program

	Savings	Benefits	Incremental Cost	Program Costs	Combined TRC	Combined PAC
Energy Utility	0 kWh (direct) 103 kWh (embedded)	$113	$450	$250 incentive $50 admin	2.07	3.46
Water Agency	13,000 gallons	$116 (water) $808 (WW)				

Water: $200 Incentive, $40 Admin

Energy: $50 Incentive, $10 Admin

Allocate Full IMC to Energy Efficiency

	IMC	TRC	PAC
Energy Utility	$450	**0.25**	**1.88**
Water System	$0	**23.09**	**3.85**

Split IMC 50-50

	IMC	TRC	PAC
Energy Utility	$225	**0.48**	**1.88**
Water System	$225	**3.49**	**3.85**

Split IMC in Proportion to Benefits

	IMC	TRC	PAC
Energy Utility	$49	**1.91**	**1.88**
Water System	$401	**2.09**	**3.85**

Split IMC in Proportion to Program or Incentive Cost

	IMC	TRC	PAC
Energy Utility	$90	**1.13**	**1.88**
Water System	$360	**2.31**	**3.85**

Note: Illustrative estimates for representative assumptions using Navigant water/energy calculator.

Hypothetical Toilet Replacement Program

Program design for a hypothetical water efficient toilet program

	Savings	Benefits	Incremental Cost	Program Costs	Combined TRC	Combined PAC
Energy Utility	0 kWh (direct) 103 kWh (embedded)	$113	$49	$250 incentive $50 admin	2.07	3.46
Water Agency	13,000 gallons	$116 (water) $808 (WW)	$401			

Split IMC in Proportion to Benefits

Water: $200 Incentive, $40 Admin

Energy: $50 Incentive, $10 Admin

	TRC	PAC
Energy Utility	**1.91**	**1.88**
Water System	**2.09**	**3.85**

Water: $150 Incentive, $37 Admin

Energy: $100 Incentive, $13 Admin

	TRC	PAC
Energy Utility	**1.82**	**1.00**
Water System	**2.11**	**4.94**

Water: No Program

Energy: $50 Incentive, $50 Admin

	TRC	PAC
Energy Utility	**1.14**	**1.13**
Water System	**N/A**	**N/A**

Note: Illustrative estimates for representative assumptions using Navigant water/energy calculator.

Next Steps

- IOUs begin operationalizing water/energy nexus cost effectiveness tools in program design and analysis
  - Requires review/approval from the DEER ex-ante team of tool values
  - Further work to test cost effectiveness tools and review assumptions
  - Clarification on customization vs locked values
- For program design, look to partner with water agencies, with each supporting program costs in proportion to NPV benefits.
- For reporting, use Navigant tool to create modified inputs for existing cost-effectiveness tools:
  - Modify measure energy claim to include embedded energy
  - Use NPV benefits from site and embedded energy savings, but not water avoided costs (potential water agency partner would claim water avoided costs)
  - Modify measure IMC in proportion to NPV benefits (potential water agency partner would claim the rest of the IMC)
- Work to couple test programs with drought assistance in 2015-16