



Residential and Commercial Programs for Clean Energy

Clean Power Plan and the Clean Energy
Incentive Program Workshop

Port Arthur, TX

November 4, 2015



Agenda

- Residential Options
 - Weatherization
 - 5STAR
- Commercial Programs
 - Commercial Financing



Energy-Water Nexus

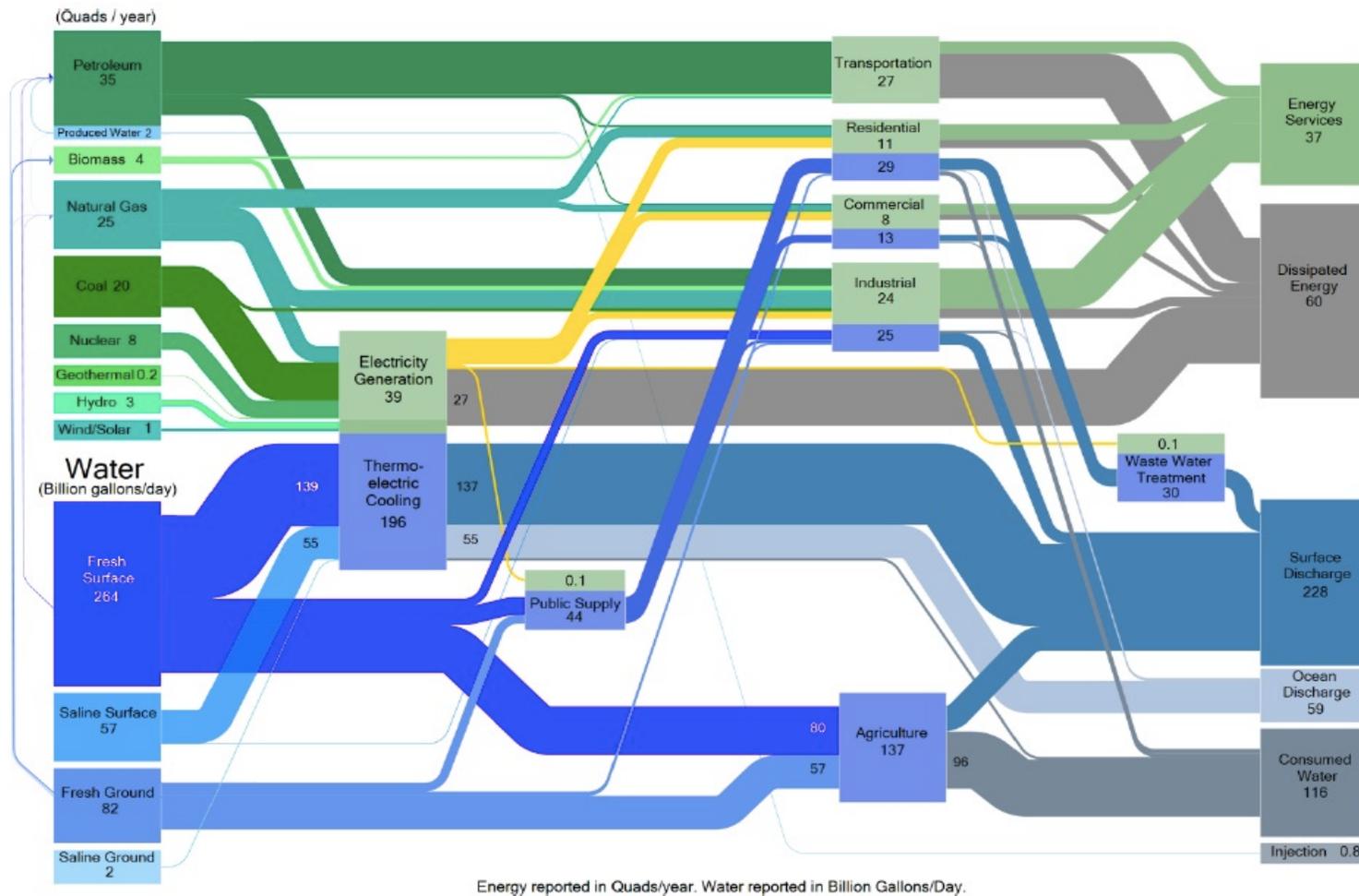


Figure ES.1. Hybrid Sankey diagram of 2011 U.S. interconnected water and energy flows.
 Source: See Appendix A for data sources and calculations

Residential Options



Weatherization



Residential Energy Efficiency Program - Houston

- Identify and qualify low-income neighborhoods
- Implement neighborhood by neighborhood for maximum efficiency
- Assign home to a weatherization contractor
- Contractor conducts:
 - Home energy efficiency assessment
 - Implements required energy measures
- Post-inspection and follow-up



Key Elements to Building the Program

- Educate homeowners to build trust
- Same neighborhood by neighborhood approach involving civic leaders
- Standardize offering and pricing for simplicity and efficient roll-out
- Expand pre-qualified contractors and in-house capabilities to meet demand



Weatherization Measures

- REEP Basic
 - Weather stripping
 - Window caulking
 - Attic insulation
 - Energy efficient light bulbs
 - Ductwork



Funding

- Funding by Homeless and Housing Fund and TIRZ set aside funding
- Partner with local utility for reimbursement of some weatherization costs



Utility and Federal Programs

- Agency in Action
- Hard-to-Reach
- Weatherization Assistance Program



Weatherization Efficiency Gains

- **8,000** homes weatherized
 - **12** neighborhoods participated
 - **377** homes per month
 - Cost per house **\$1,443**
- Approximately **5,808 MWh** reduction
 - Cost savings of approximately **\$700,000**
 - Average **20%** energy savings per household
 - Average **\$335** energy savings per home over a six month period compared to previous year
 - **75%** of surveyed homes claim that can tell a difference in the cooling and heating of their homes



Energy Efficient New Construction



Affordable Housing – 5STAR

- Construct affordable, “ultra-efficient” homes in older, central-city neighborhoods.
- Part of Houston HOPE/LARA
 - Revitalize blighted neighborhoods by creating new affordable homes in areas with high concentrations of abandoned lots



Affordable Housing - 5STAR

- House Price Max
\$150,000
- If builder reduced HERS rating below 60, builder receives incentive:
\$25,000 to \$50,000
 - Covers cost of improving energy efficiency/renewable energy generation of home

HERS Scores:
Score at 100 –
Standard home
Score of 85 –
Energy Star home
Score of 60 –
Qualify for incentives

See scores largely in 20s
and teens



Affordable Housing – 5STAR

- Many of the efficiencies found in:
 - Duct Placement
 - Insulation
 - Appliances
 - Water Heating
- See greater emphasis on occupant behavior



Affordable Housing – 5STAR

- Benefits
 - Lower Energy Costs
\$2,100 per year for homeowner
 - 368 ton GHG reduction per house
 - Better trained contractor community regarding EE and RE



Commercial Programs



Commercial Utility Programs

- Entergy – Southeast Texas
 - Commercial Solutions – on-site assessment and direct incentive program
 - Non-profits can participate
 - SCORE Program for Schools
 - CitySmart Program
- Clearesult is the administrator



Commercial Financing Opportunity



PACE – Property Assessed Clean Energy

- Financing program that enables commercial, industrial, large multi-family, and agricultural property owners
- Obtain low-cost, long-term financing for water conservation, energy- efficiency, and distributed energy projects.
- Repay those loans through a property assessment imposed by the local government at the request of the property owner.



PACE Tearing Down Barriers

Barriers

Scarce internal capital budget

No access to, aversion to financing

- No investment-grade credit rating
- Lack of collateral assets that don't fall under first mortgage

Uncertain holding period

Owner / tenant split incentives

Skepticism savings/ROI will be realized

PACE Solutions

No down payment and costs spread over time w/ savings

- Repayment security through senior lien position
- Backed by property, not by owner or equipment collateral

PACE obligation transfers to the new owner upon sale

Qualifies as NNN pass-thru cost

ESCO/contractor guarantees or third party insures performance





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