

Creating Markets from Programs:

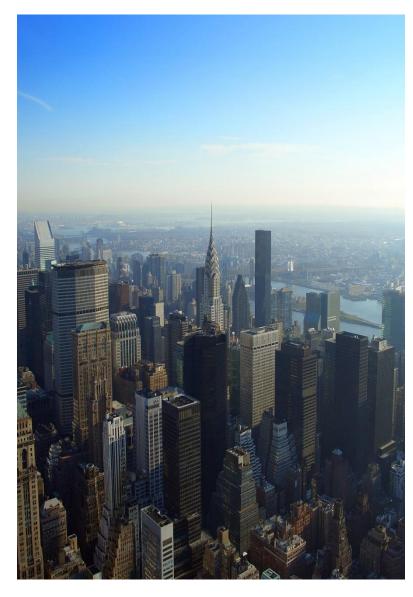
What does it take to create scalable, investable markets for energy efficiency?

ACEEE Intelligent Efficiency Conference December 7,2015

Joule Assets: Market View



- Private real assets fund targeting \$100 million in Energy Efficiency(EE)/Demand Management(DM) project finance
- Capital source aligned with project performance and cash flows, not credit
- Focused on small and medium commercial buildings (<100,000 sq ft) - 97.5% of U.S Commercial Buildings (EIA 2012)
- Technology issues are largely solved. Remaining market barriers hold back access to value and scale – including opaque/fragmented market structures and lack of sophisticated financing models



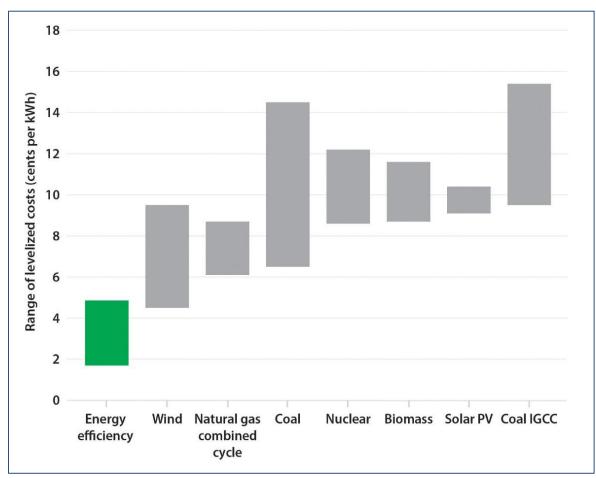
Joule's strategy is designed to remove market complexity and unlock value

EE - A new kind of energy infrastructure?



- Economic/environmental benefits largely unrealized despite significant efforts
- EE remains the low hanging fruit with proven, cost effective savings
- \$ 7 B/year in ratepayer funded EE programs
- Estimated \$400B investment required to modernize grid by 2030

Levelized Cost of Energy – source: ACEEE



Are we paying for EE the wrong way?

Current system contributes to market barriers



Common threads:

- Incentives based on predicted savings
- Ex-post evaluation of program performance

Deployment at Scale

E, M&V: \$200 mill/year

Current:

- Technical sale requires education of non-expert customers
- Even with attractive programs in place, states/utilities have difficulty meeting EE mandates/goals

Pay for performance policies

Access private funding sources

Current:

- Incentives use predictive, deemed models
- No financial accountability
- Quality control, M&V focused on ex post evaluation
- Private sector remains focused on programs not markets

Current:

- Projects lack standardization
- · Capital sources remain on the sidelines
- Financing is available on loan/lease model

ICT holds potential to bring market transformation 🐪



Common threads:

- Single information source
- Transparent, real time data aligns counterparties on goals, outcomes, rewards

Deployment at Scale

Information And Communication Technology

Possible:

- Sale converts from technology purchase to service
- Financing offered in bundle of project benefits... with guarantees
- Insurance assures customer that installation will perform
- Shorter sales cycles

Pay for performance policies

Possible:

 Procurement of EE as a resource under standardized models Access private funding sources

Possible:

- Investment dollars can flow to projects, with repayment based on measured savings
- Underwriting based on project performance
- Aggregations of performance data enable actuarial approach, access to capital markets

Joule Assets: Investor View



Combining energy reduction, control and M&V brings multiple benefits to investors:

- Capital security
 - ✓ Active risk controls
 - ✓ Active building management ensures persistence of savings
 - ✓ Ability to migrate project to another management software
 - ✓ Insurance brings investment grade counterparty to transaction
- Upside
 - Accessing dynamic markets and environmental attributes brings optionality to investment (DR, DM, CPP?)
- Access to secondary capital markets
 - ✓ De-risks investment
 - ✓ Lowers cost of capital

