



Lessons from the Solar Market:

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

*Maria Fields, Joule Assets
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- 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

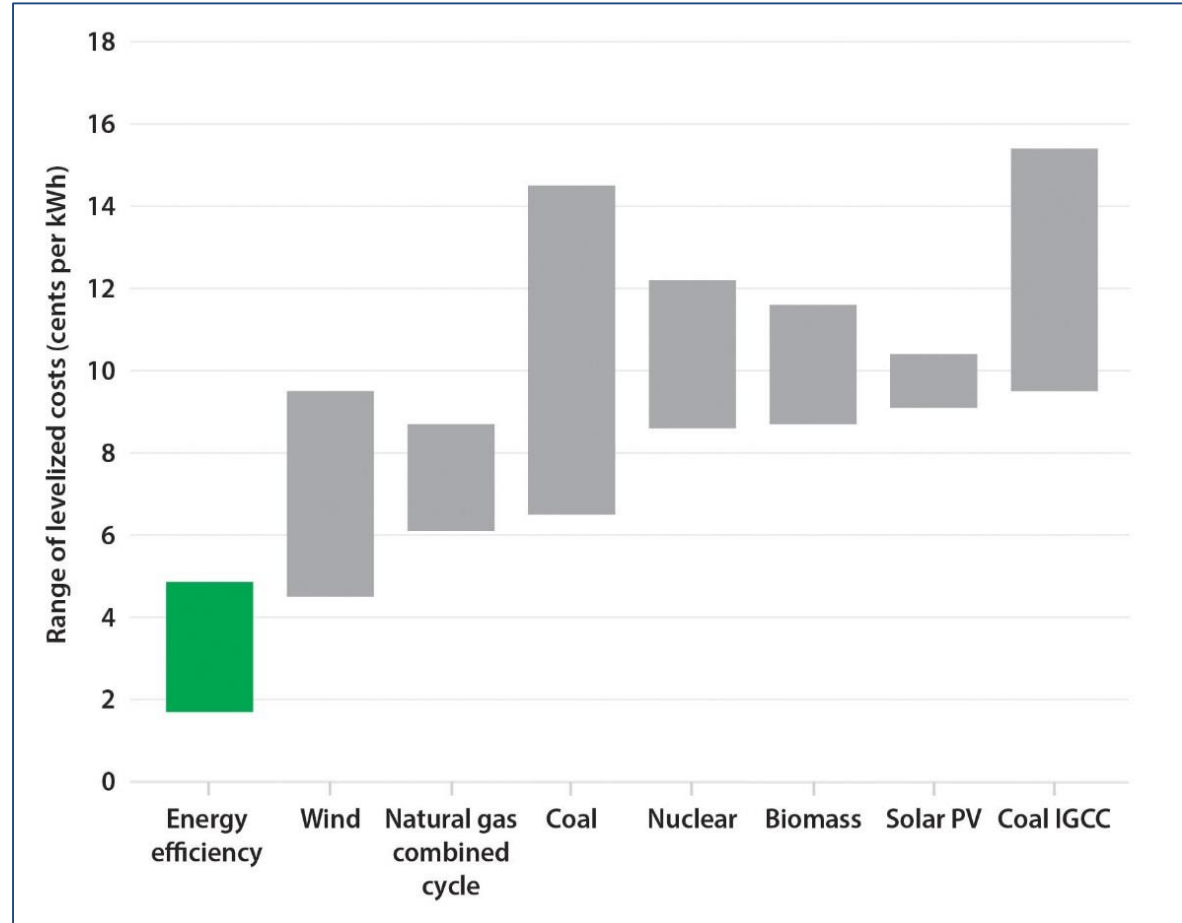


Joule's strategy is designed to remove market complexity and unlock value

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

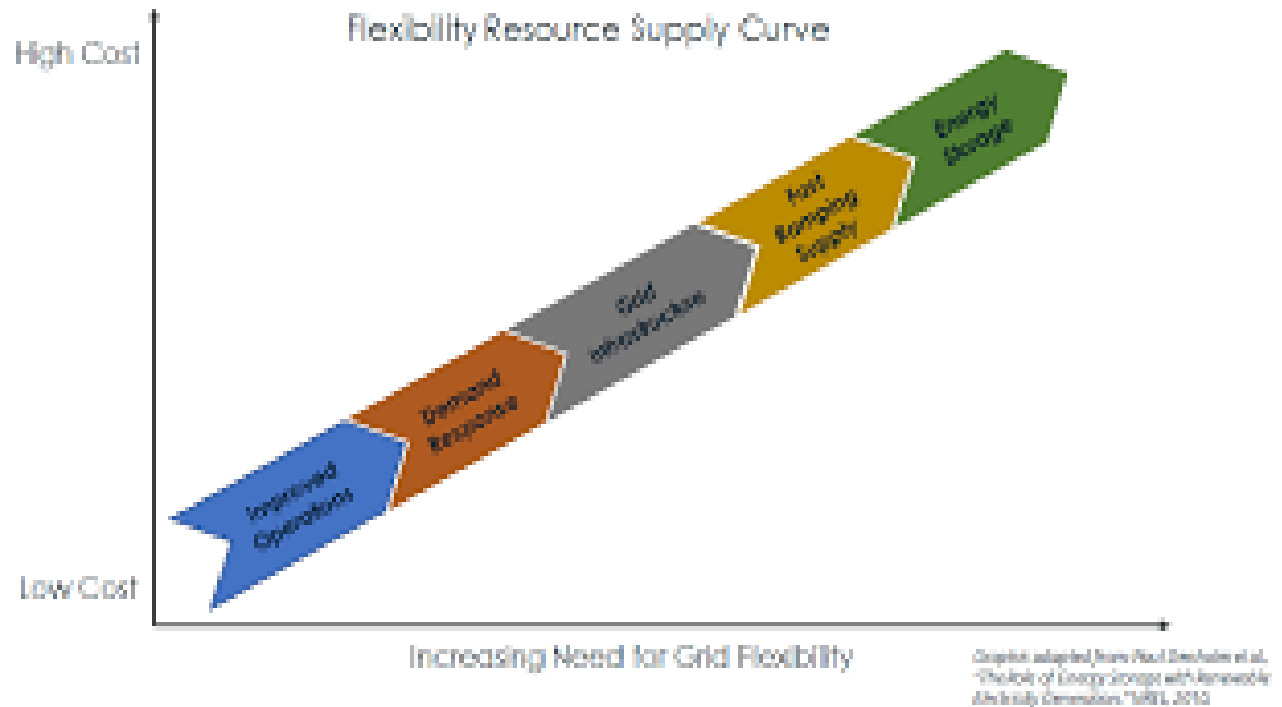
Levelized Cost of Energy – source: ACEEE



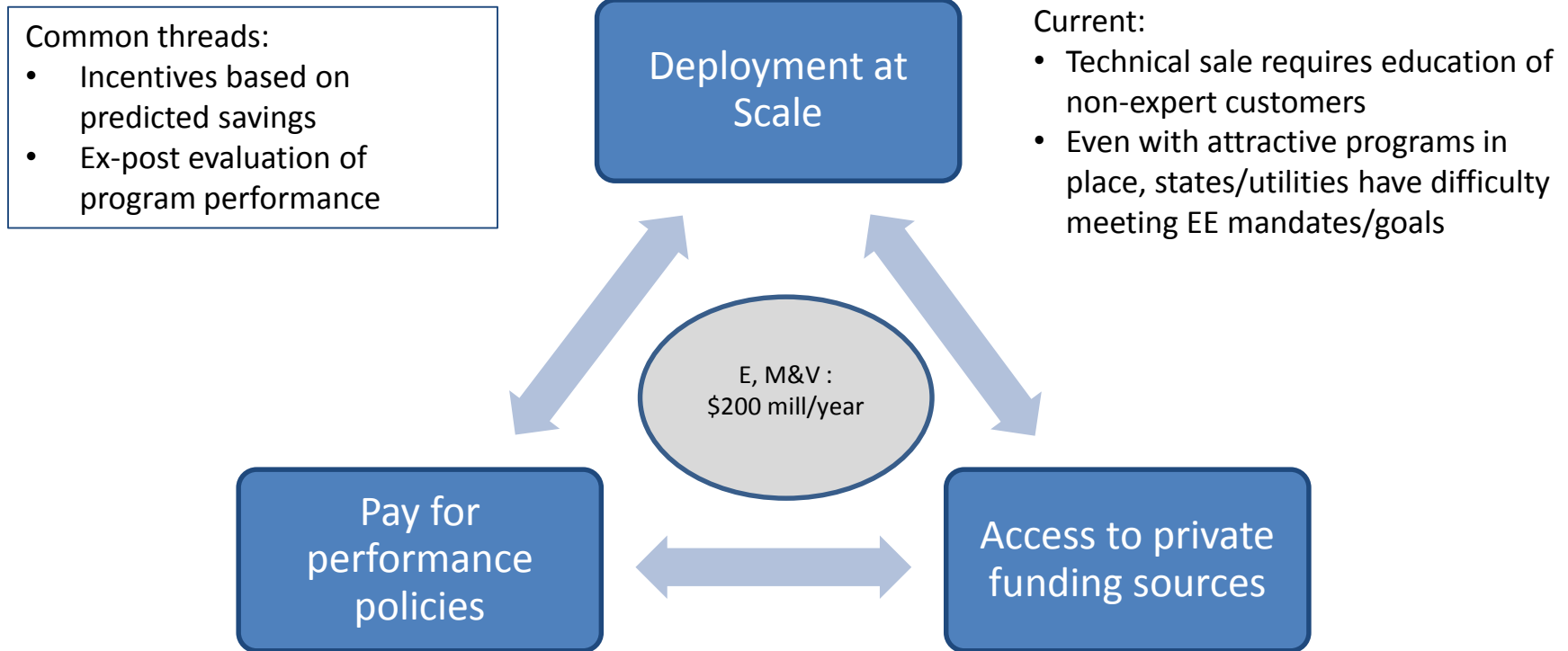
Are we paying for EE the wrong way?

- Estimated \$400B investment required to modernize grid by 2030
- T&D expenses represent an increasing share of retail electricity rates
- Increasing drive to offset traditional infrastructure upgrades with demand flexibility

Increased Need for Grid Flexibility – source: NREL



Measurement and Control delivers additional value



Current:

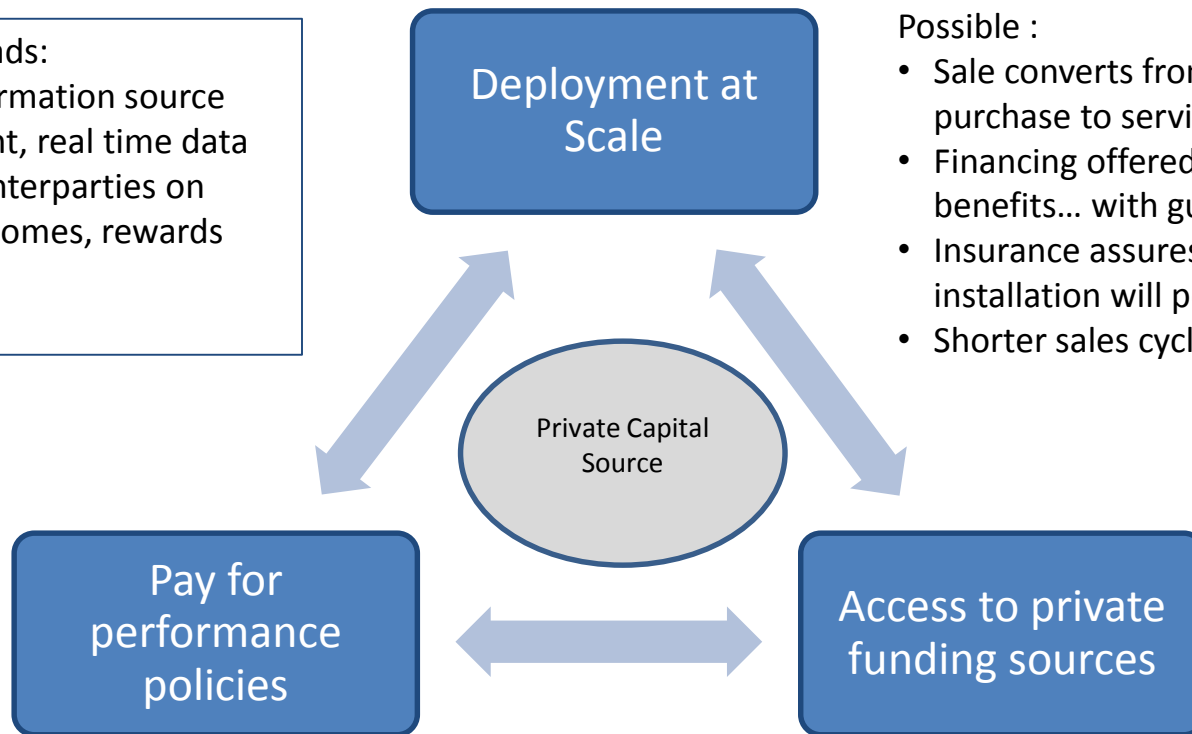
- Incentives use predictive, deemed models
- No financial accountability
- Quality control, M&V focused on ex post evaluation
- Private sector remains focused on programs not markets

Current:

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

Common threads:

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



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

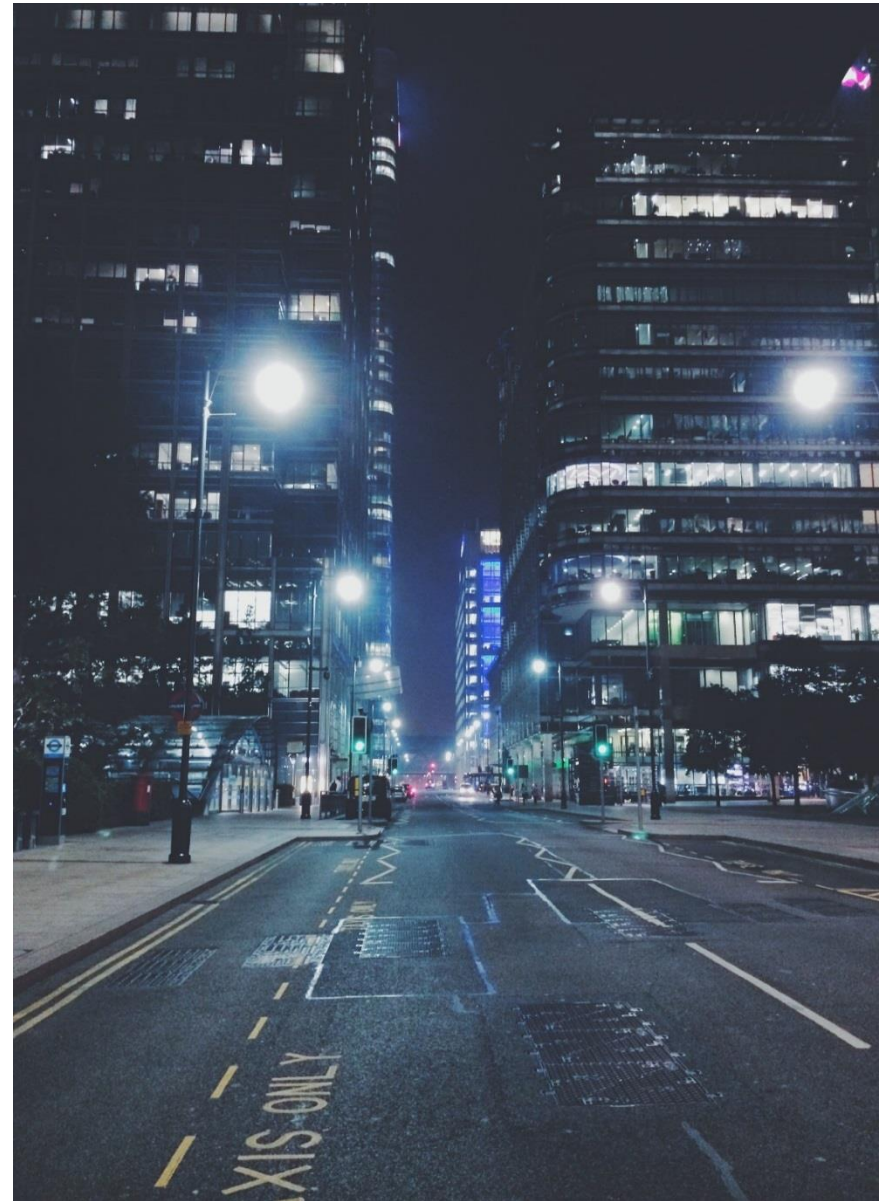
Possible:

- Procurement of EE as a resource under standardized models

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

- Technology agnostic
 - ✓ Integrates current and future technology to maximize site benefits
- Delivers maximum value
 - ✓ Whole building M&V brings additional value – and a role for utilities
 - ✓ Accessing dynamic markets and environmental attributes brings optionality to investment (DR, DM, CPP?)
 - ✓ Sites are enabled and future proof
- Active Risk Management
 - ✓ Persistence of savings matters
 - ✓ HSB insurance brings investment grade counterparty to transaction
- Access to secondary capital markets
 - ✓ De-risks investment
 - ✓ Lowers cost of capital





Thank you!

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