

Energy efficiency rebooted

Session Chair

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Speakers

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Energy Efficiency Rebooted

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EnergyPro Ltd

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Energy Efficiency 1.0

- Justified on energy cost savings
- Risks not recognized – unreliable outcomes
- Little or no measurement
- A pain to utilities
- Not valued by time and location
- Complex contracting models
- Hard to invest in
- No direct connection to the energy market
- Under-utilized compared to the economic potential
- A 'cause' or 'campaign' – 'something you should do'

A fundamental problem

The market for energy

Exists as an actual market

- Standardized units
- Standardized contracts
- Known risks
- Liquidity

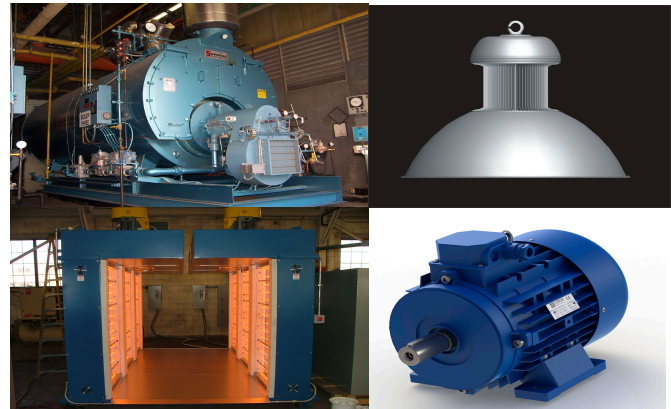


~~“The market for energy efficiency”~~

There is no market

- No standardized units
- No standardized contracts
- Unknown risks
- No liquidity

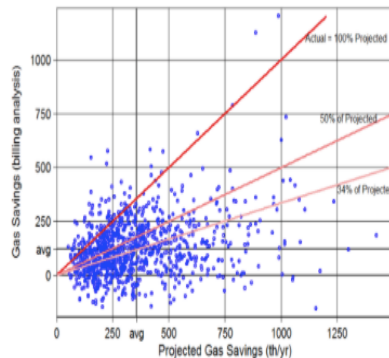
There is only a market for stuff



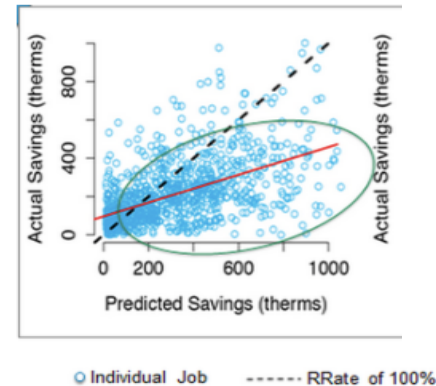
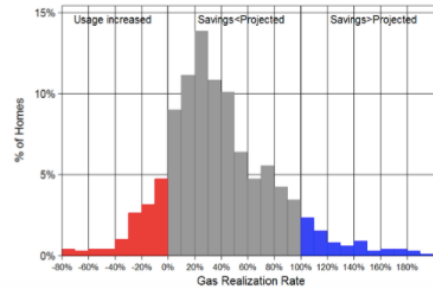
Moving from uncertainty to understanding risks

~~*“The returns are tremendous, and there’s virtually no risk”*~~

We are only just beginning to understand the risks

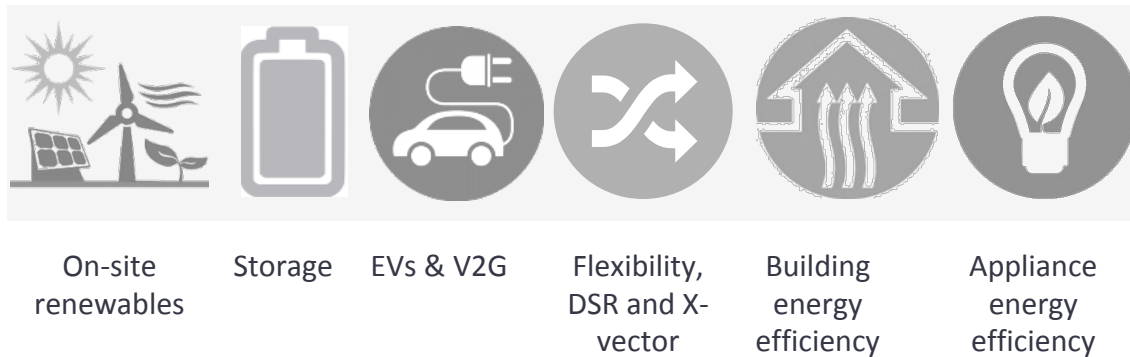


Efficiency savings are very consistent at a portfolio level:



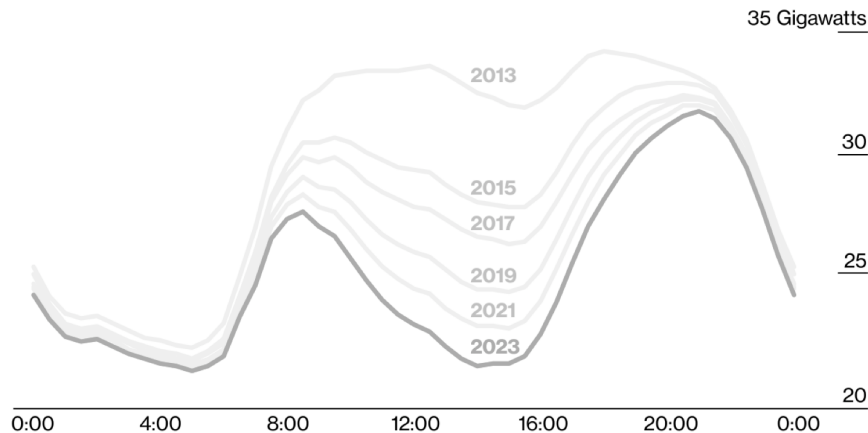
A changing market

- Rise of distributed energy resources and prosumers
- The rise of the duck curve
- Increasing value on flexibility



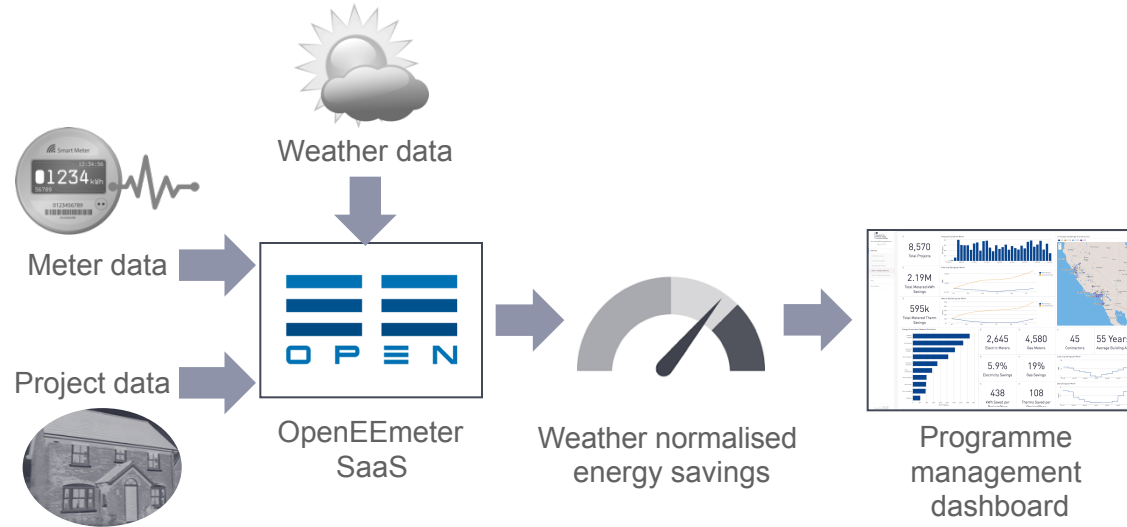
Energy efficiency 1.0

- does not contribute to network planning or management
- consumers and society do not experience the full benefits of efficiency
- pace of grid decarbonisation is slowed



Real time metered efficiency is available now

- Simple project data plus consumption data normalised & processed through open-source algorithms
- Measurement in time and location of the impact of interventions
- No physical installation
- ✓ Enables contractor performance tracking and quality management
- ✓ Enables dynamic programme management
- ✓ Enables Pay for Performance & reliable contracting for utilities

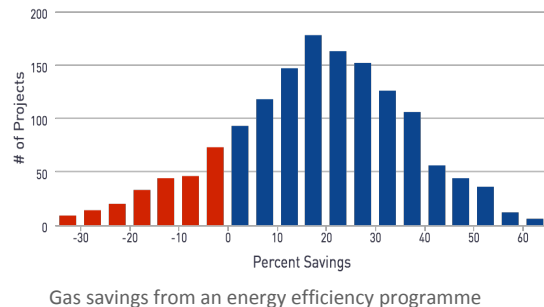


Applicable to all distributed energy resources

Investable portfolios

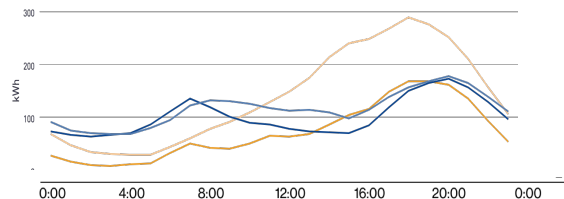
- Transparent, replicable savings analysis that can be trusted by all parties
- Replaces inaccurate deemed savings or expensive evaluation consultants using inconsistent techniques
- Delivers reliable portfolio performance data
- Creates confidence in cash flows
- Combine behind-the-meter energy resources to deliver the solution the network needs

Savings portfolios



**Measure efficiency
project performance
across a portfolio**

Resource curves



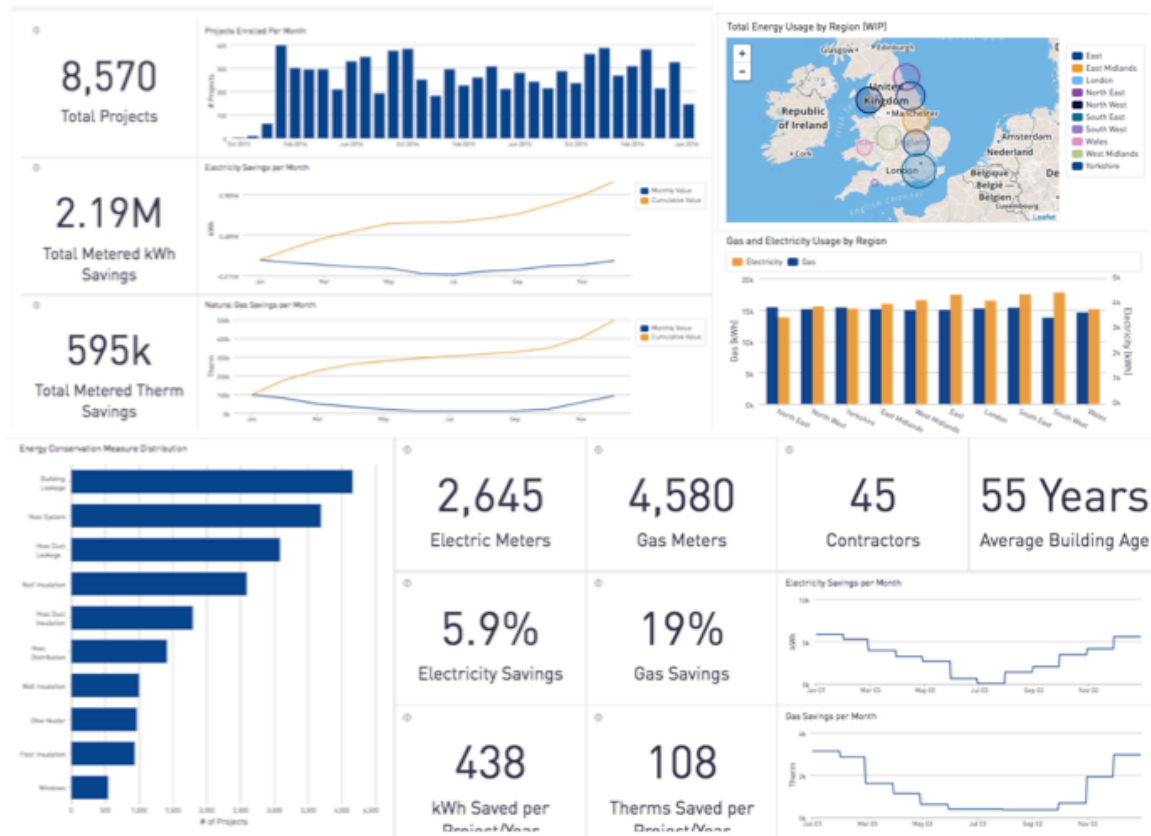
**Procure the
resource curve the
network needs**

Deployment

- US utilities adopting P4P programmes based on metered EE
- UK dashboards developed with BEIS for ECO3
- Being deployed in Australia



REAL-TIME METERED ENERGY EFFICIENCY



Illustrative UK programme management dashboard



PORTFOLIO

CONTRACTORS

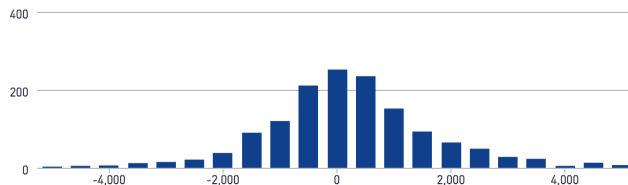
PROJECTS

RECURVE

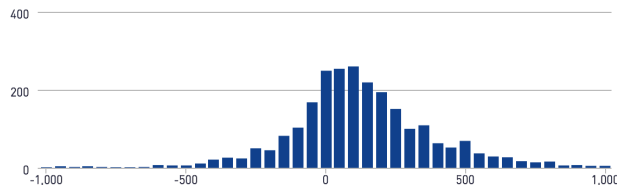
ABOUT

Metered Savings Analytics

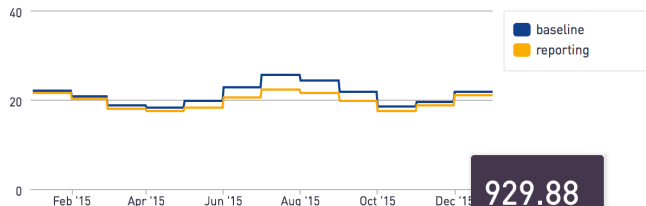
Electricity Savings Distribution



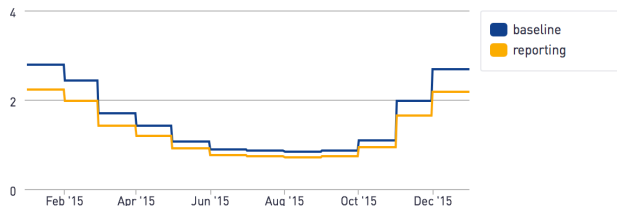
Natural Gas Savings Distribution



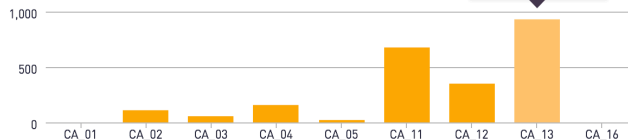
Annualized Monthly Electricity Savings



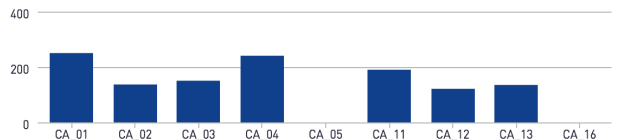
Annualized Monthly Natural Gas Savings



Average Electricity Savings by Climate Zone



Average Natural Gas Savings by Climate Zone



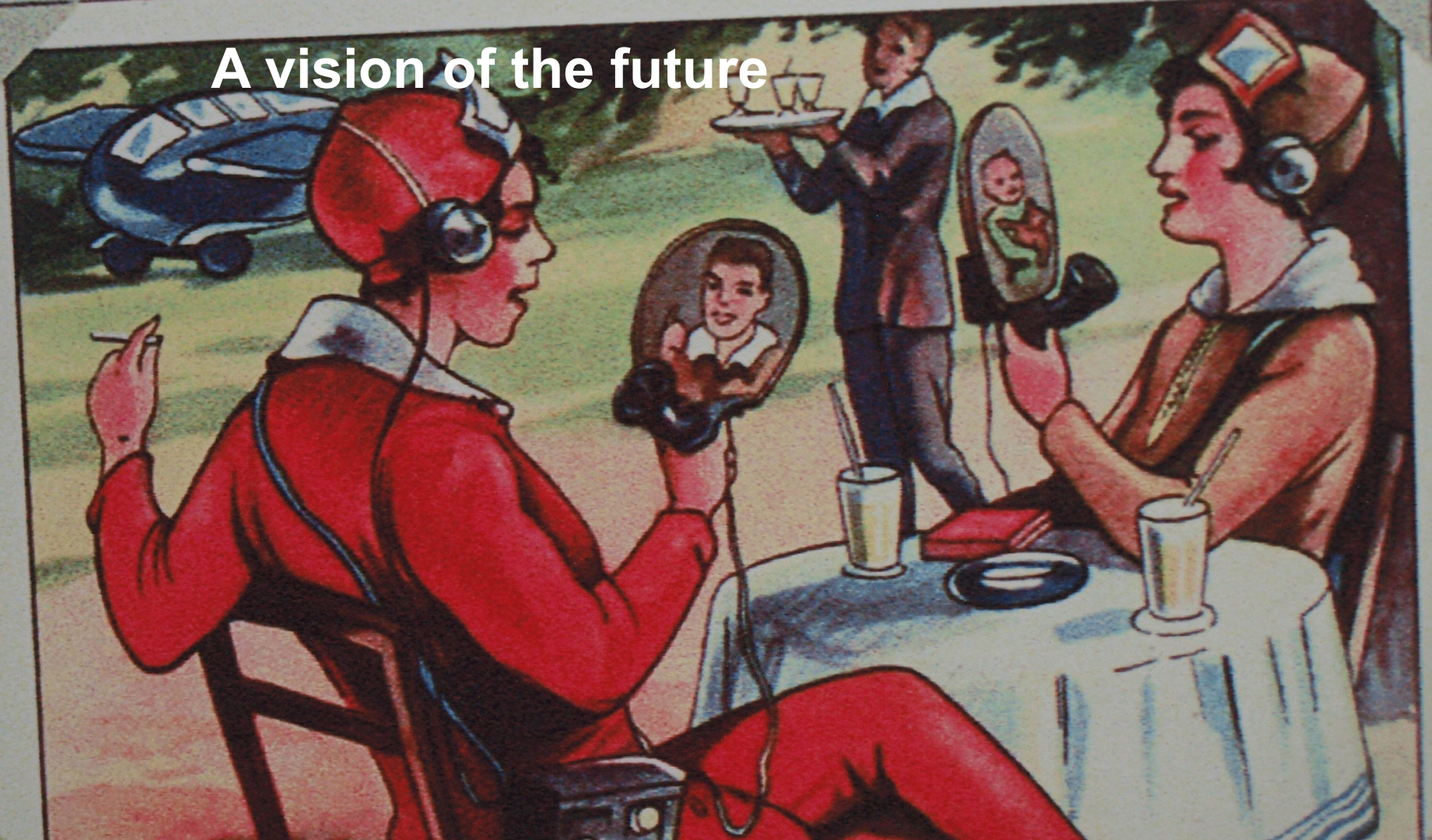
Energy Efficiency 1.0

- Justified on energy cost savings alone
- Risks not recognized
- No measurement
- EE is a pain to utilities
- Not valued by time and location
- Complex contracting models
- No direct connection to energy market
- Hard to invest in
- A 'cause'

Energy Efficiency 2.0

- Justified on multiple non-energy benefits
- Risks are understood
- Measurement and data critical
- EE as a reliable DER for utilities
- Valued by time and location
- Simple Pay For Performance models
- Directly participating in the energy market
- Easy to invest in
- A functioning market

A vision of the future



The background of the slide is a photograph of a modern control room. It features several rows of desks, each equipped with multiple computer monitors. People are seated at the desks, working. The room has a blue wall and a ceiling with recessed lighting. A large screen at the front of the room displays various data and maps. The overall atmosphere is professional and high-tech.

Metered energy efficiency as a Distributed Energy Resource that can be:

- **reliably dispatched**
- **quantifiably risk assessed**
- **contracted for using standard contracts like PPAs**
- **aggregated**
- **priced on a price / kWh**

and therefore can be easily invested in.

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