



Let's Make a Deal! Efficiency from the Investor's Perspective

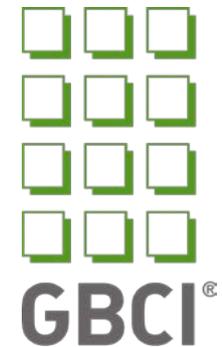
May 17, 2017
9:30-10:45am

Panelists

- Matt Golden, Open Energy Efficiency
- Bruce Schlein, Citi
- Johanna Zetterberg, US DOE

Matt Golden

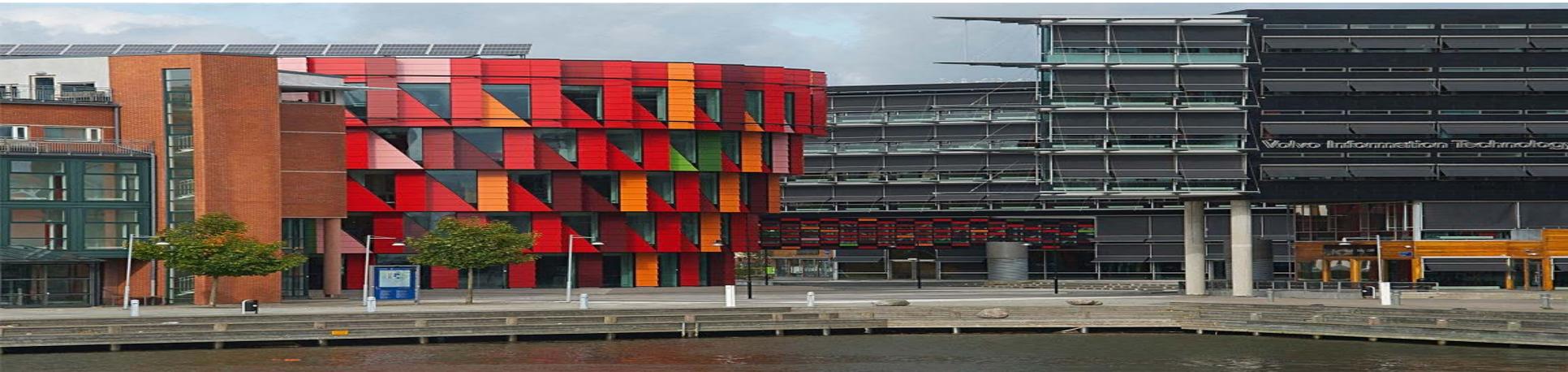
Open Energy Efficiency



**UNLOCKING CAPITAL FOR
COMMERCIAL & MULTIFAMILY
ENERGY EFFICIENCY**

What is the IREE™ Certification?

An international framework for **reducing owner and investor risk**, lowering due diligence costs, **increasing certainty of savings** achievement and enabling aggregation.

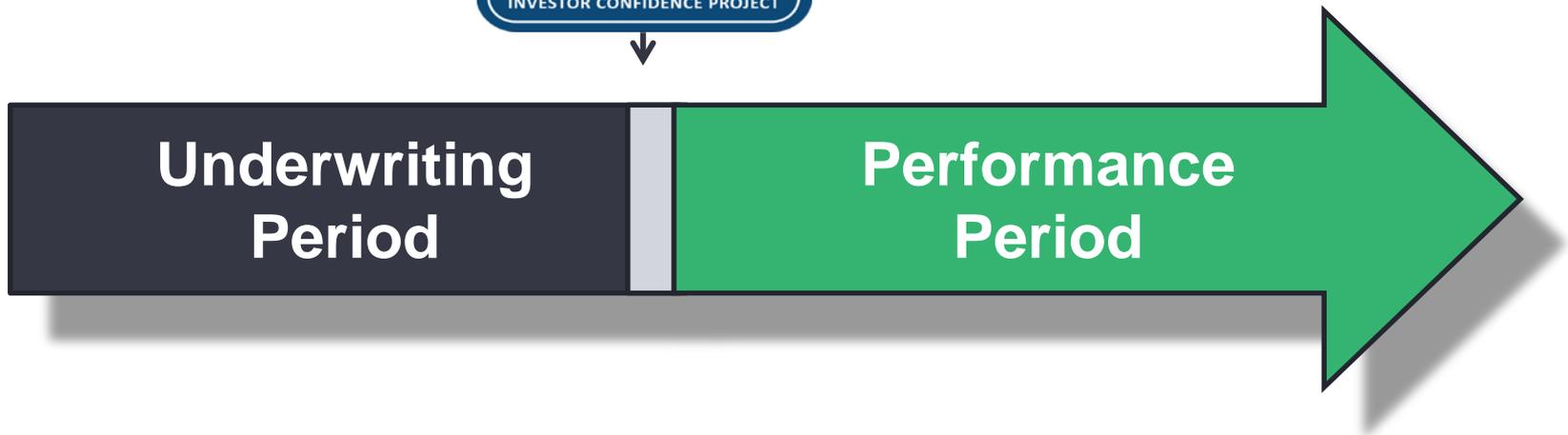
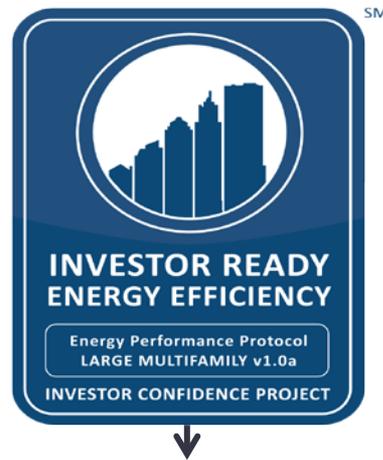


ICP's Investor Ready Energy Efficiency™ (IREE™) Certification addresses market players' needs



Ensures transparency, consistency and trust-worthiness through **best practice and independent verification.**

The IREE™ Certification is delivered before the performance period



IREE™ Certification for Building Owners

IREE's independent review and certification of proposed projects:

Gives building owners **confidence in project development and savings achievement.**

Enables the **comparison of projects** and access to more **project investment.**

Can function as a “**RFP in a box**” and **underwriting criteria** for buildings and portfolios.

IREE™ Certification for Investors

IREE™ **reduces due diligence costs and speeds underwriting** for investors.

It opens **access to quality projects** through ICP Credentialed Project Developer channel and **increases confidence in project fundamentals and engineering.**

Standard projects and document packs with third party allows for the **aggregation of projects** across borders and programs.

IREE™ Certification for Project Developers

Offers a **repeatable project process** and enables **more project approvals** due to use of industry standards and third party review

Differentiates your company and increases credibility with customers.

Increases ability to **connect with finance**, insurance, utility programs, without additional transaction costs

IREE™ Certification for Programs

IREE™ is based on internationally recognized and off-the-shelf technical standards **ready to deploy**.

Ready made provider **credentialing and training program**.

Allows for the ability to distribute Quality Assurance **costs to the market**.

How Can We Help You?

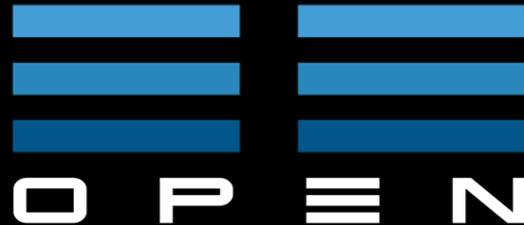
We can **certify** your project

We can **connect** you with investors

We can **connect** you with leading project developers

We can **provide** vetted technical standards and quality assurance system

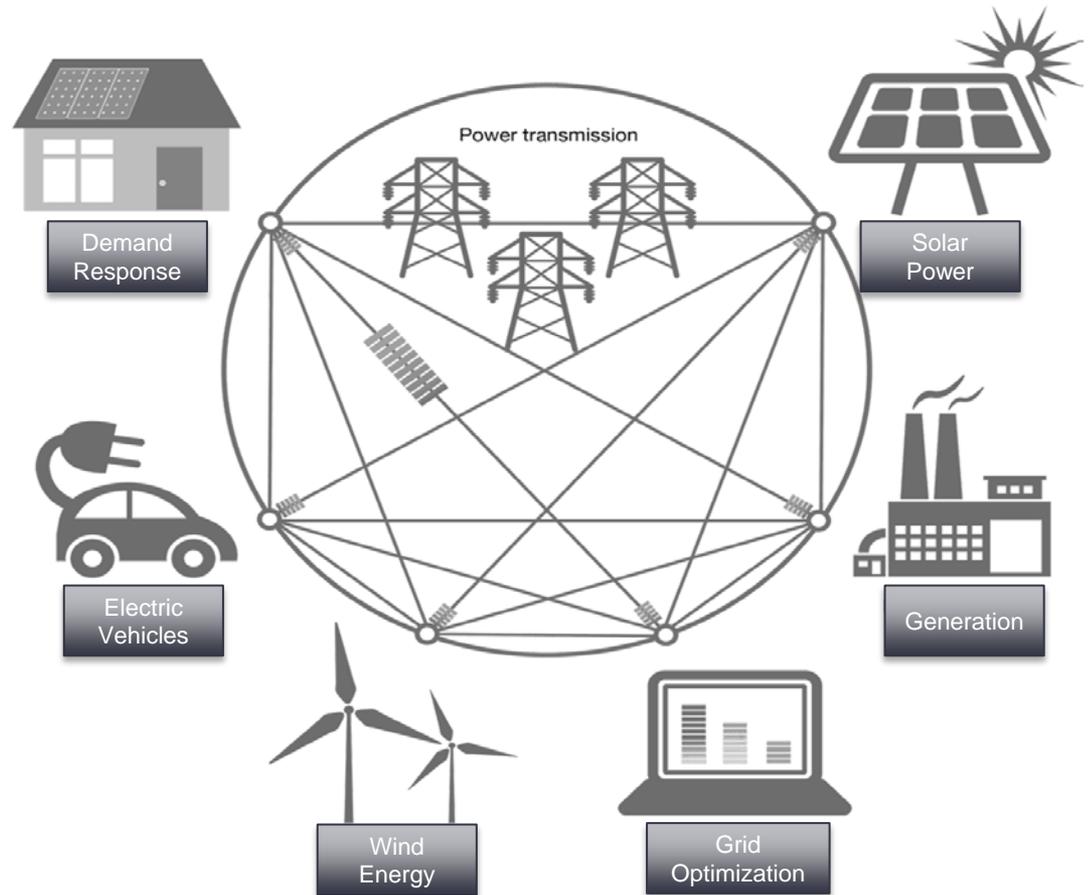
We can **make your city more attractive** to investors



Energy Efficiency is a
Distributed Energy Resource

Better Buildings Summit 2017

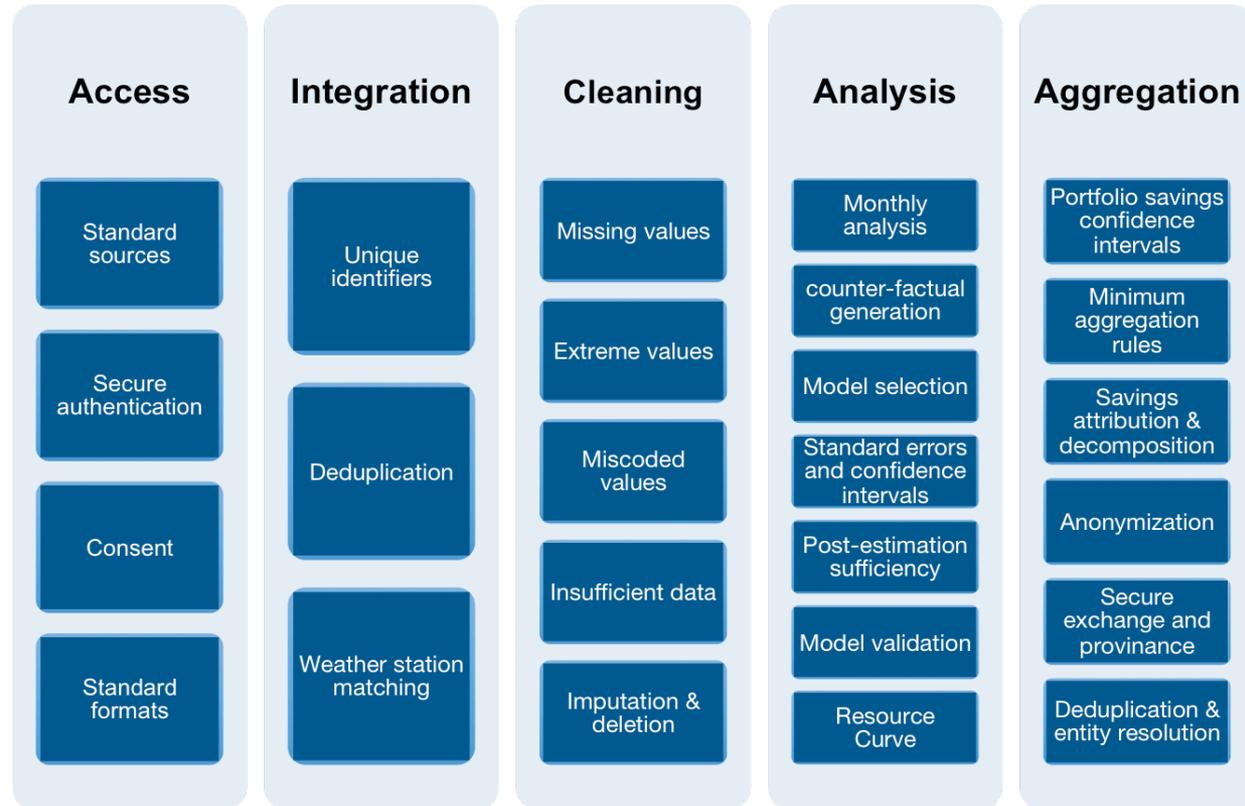
Energy Efficiency Has to Fit Into Distributed Energy Resource Markets



What's the
Weights and
Measures for
Energy
Efficiency?



Why is Measuring Energy Efficiency Complicated?



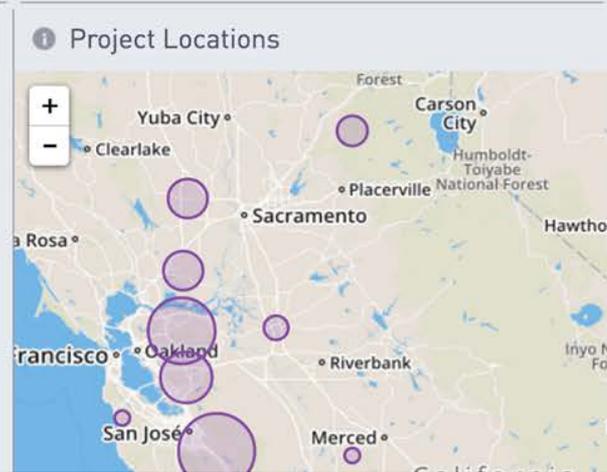
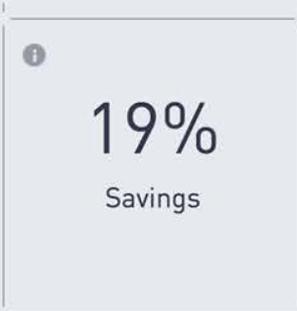
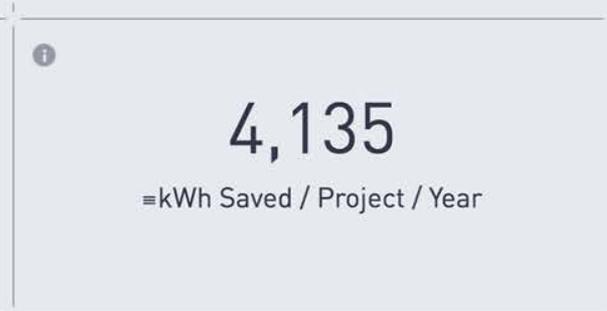
CalTRACK Open Dashboard



FILTERS: > 10000 kWh HVAC system improvement roof insulation improvement

● Editable by everyone | Go Full Screen | Tags | More | ★ | ⓘ

NEW SQL CHART

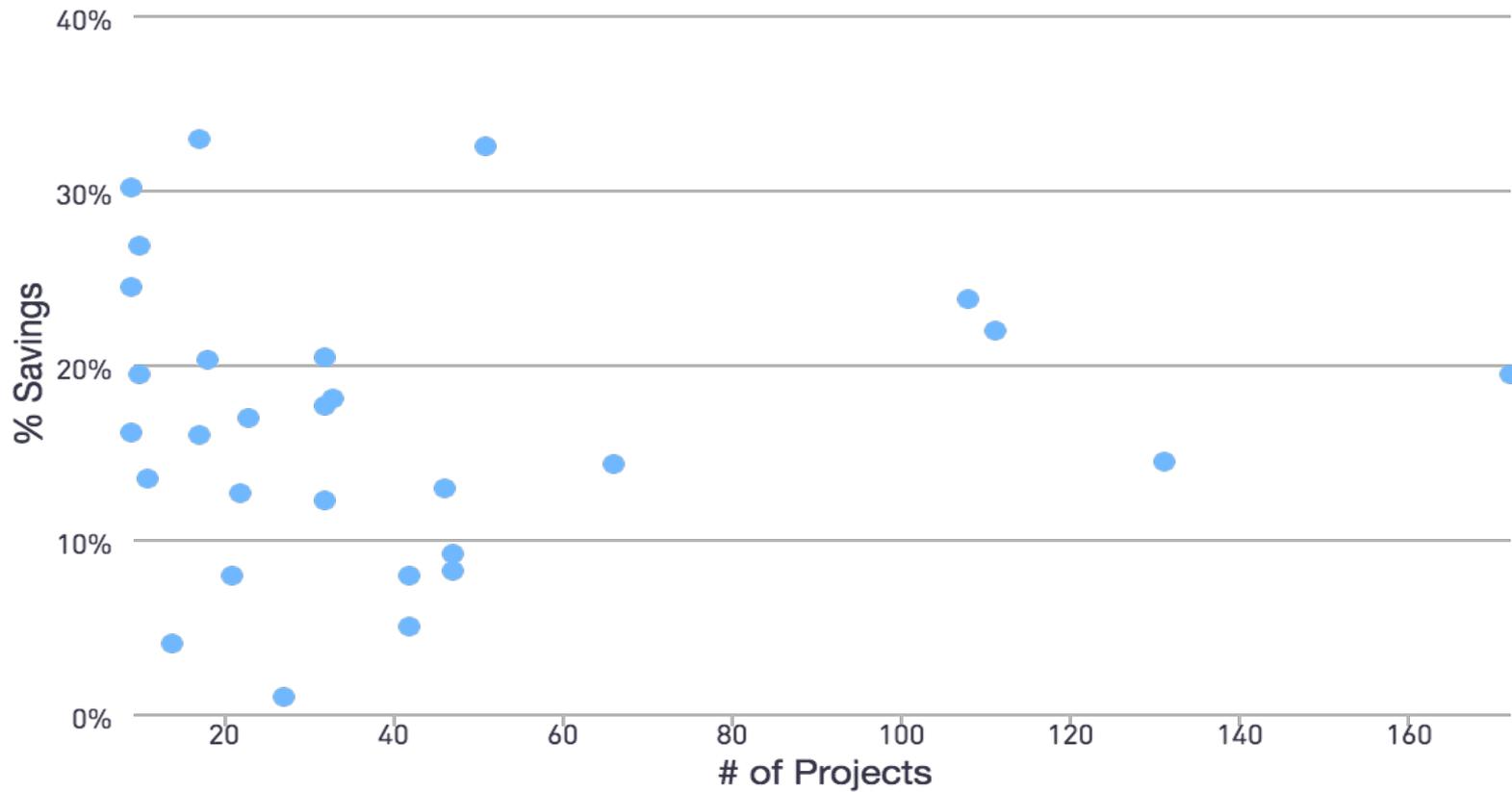


Project Attributes

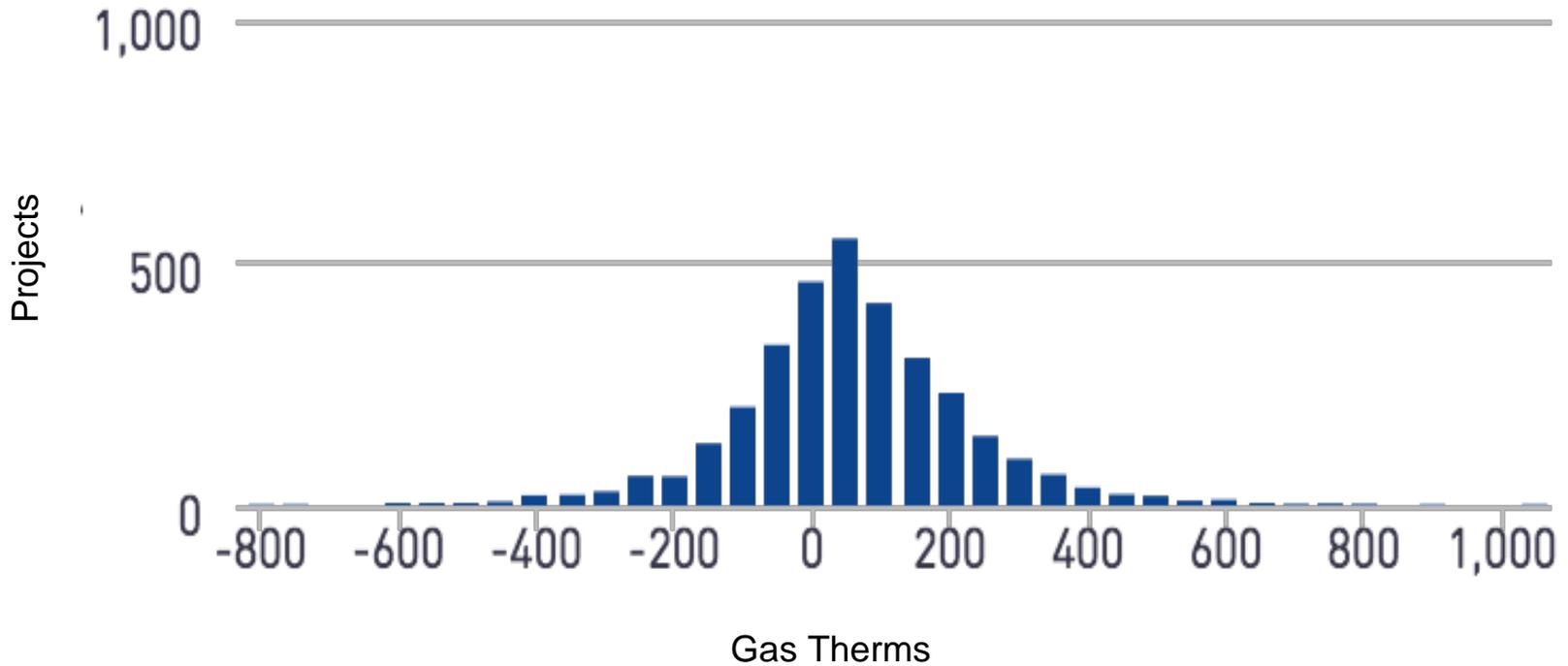
BLOCK ATTRIBUTES	RESULTS
Number of Buildings	465
Number of Contractors	50
Average Building Age	49 years
Average Square Footage	1945
Average Number of Measures	5
Number of projects with electric savings	465
Number of projects with gas savings	437



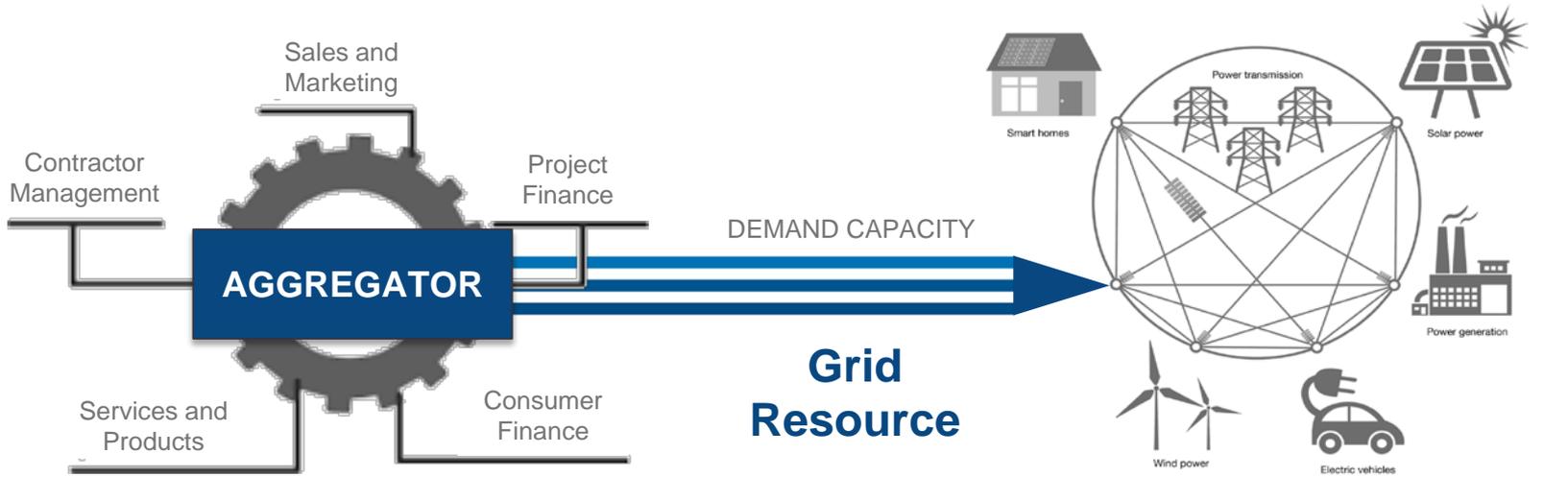
How Do Contractors Perform?



Efficiency is Manageable as a Portfolio



Align Incentives with Pay-for-Performance



Savings Comfort Health



Project Finance: The long-term financing of projects based upon projected cash flows rather than the balance sheets of its sponsors.



The Case for Energy Efficiency as a Distributed Energy Resource



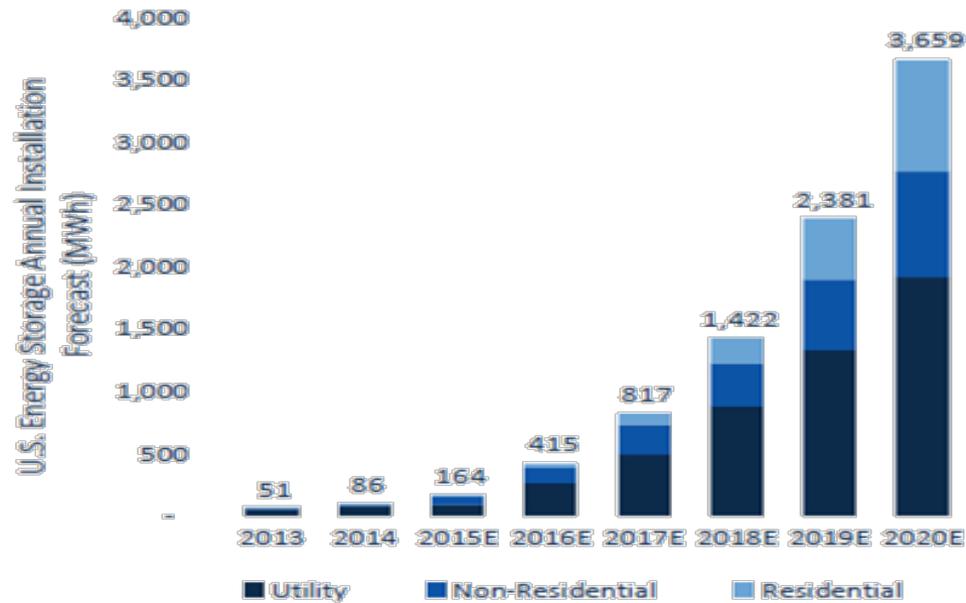


Diablo Canyon Nuclear Power Plant Closure

Procurement of
2,000 gWh of EE
by 2025



US Storage Capacity by 2020: 8.5 gWh



Source: GTM Research/ESA U.S. Energy Storage Monitor

Day-Ahead

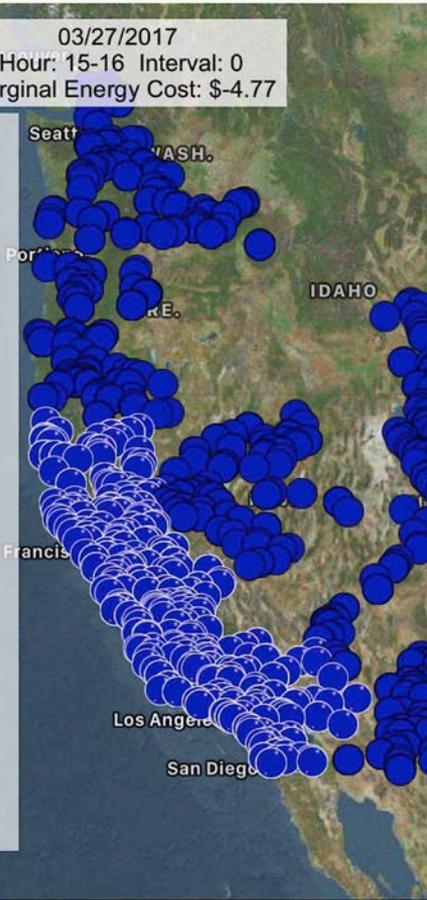
ISO



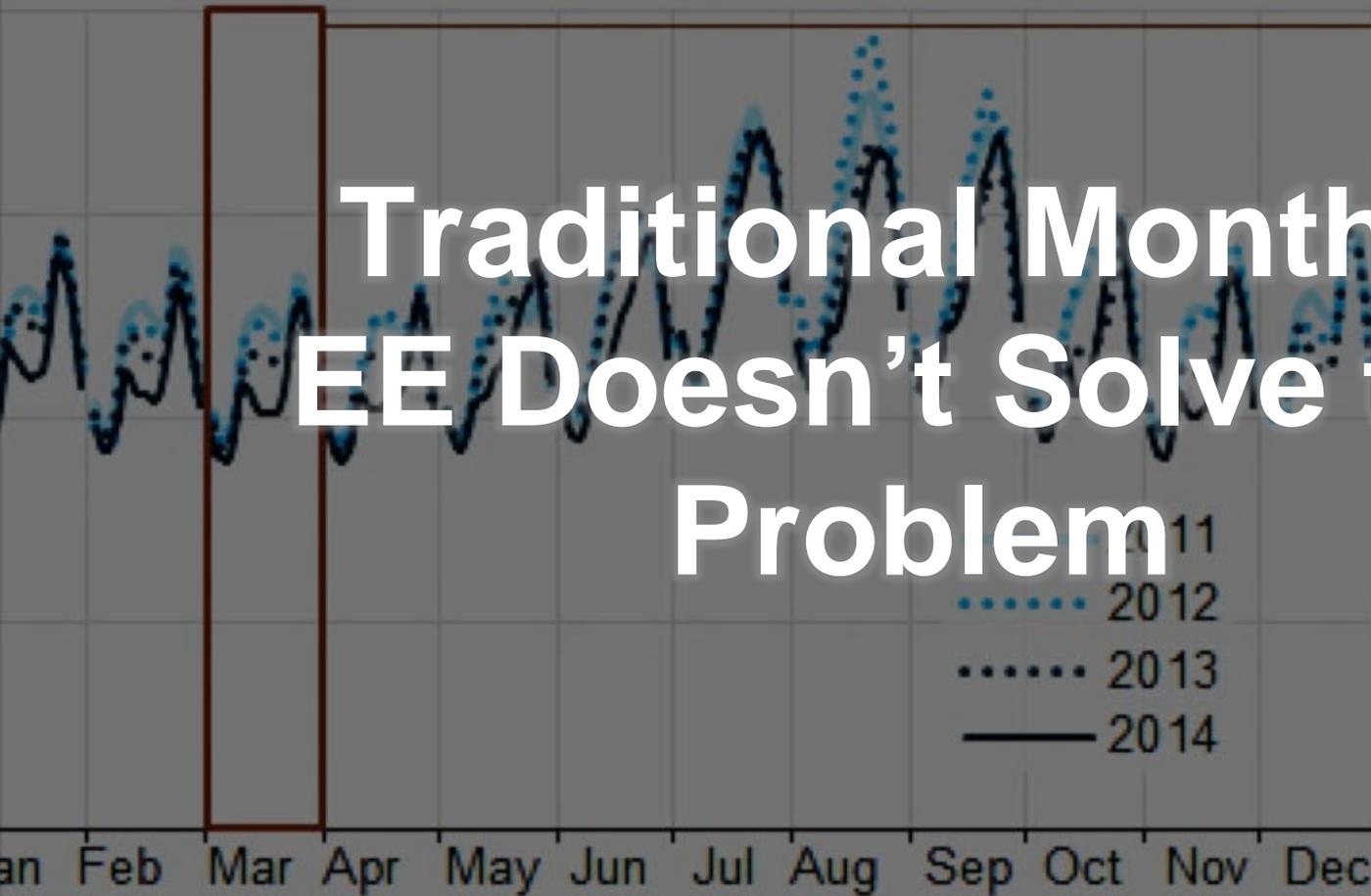
03/27/2017
 Hour: 15-16 Interval: 0
 Marginal Energy Cost: \$-4.77

Legend

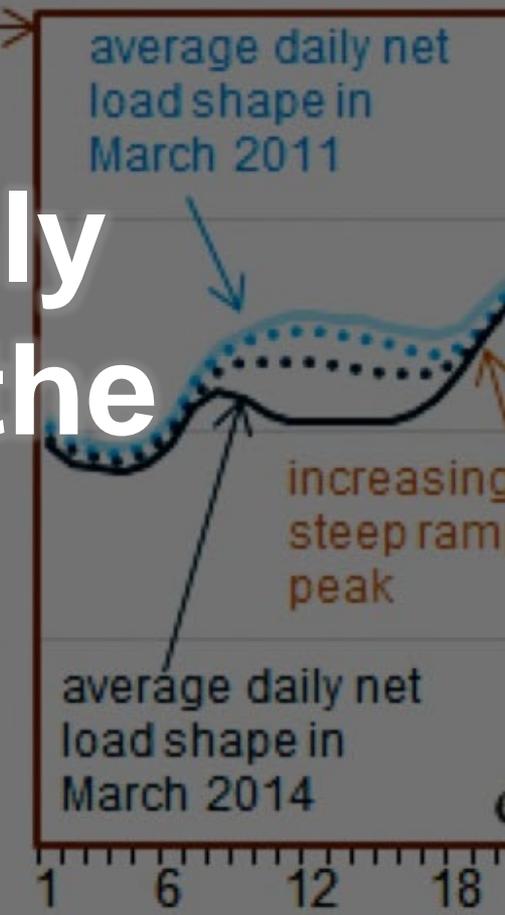
- Under -\$50
- -\$50 to \$0
- \$0 to \$50
- \$50 to \$55
- \$55 to \$60
- \$60 to \$65
- \$65 to \$70
- \$70 to \$75
- \$75 to \$80
- \$80 to \$85
- \$85 to \$90
- \$90 to \$95
- \$95 to \$100
- \$100 to \$125
- \$125 to \$150



CAISO average daily net load by month (2011-14)
GWh



CAISO average daily net load (March)



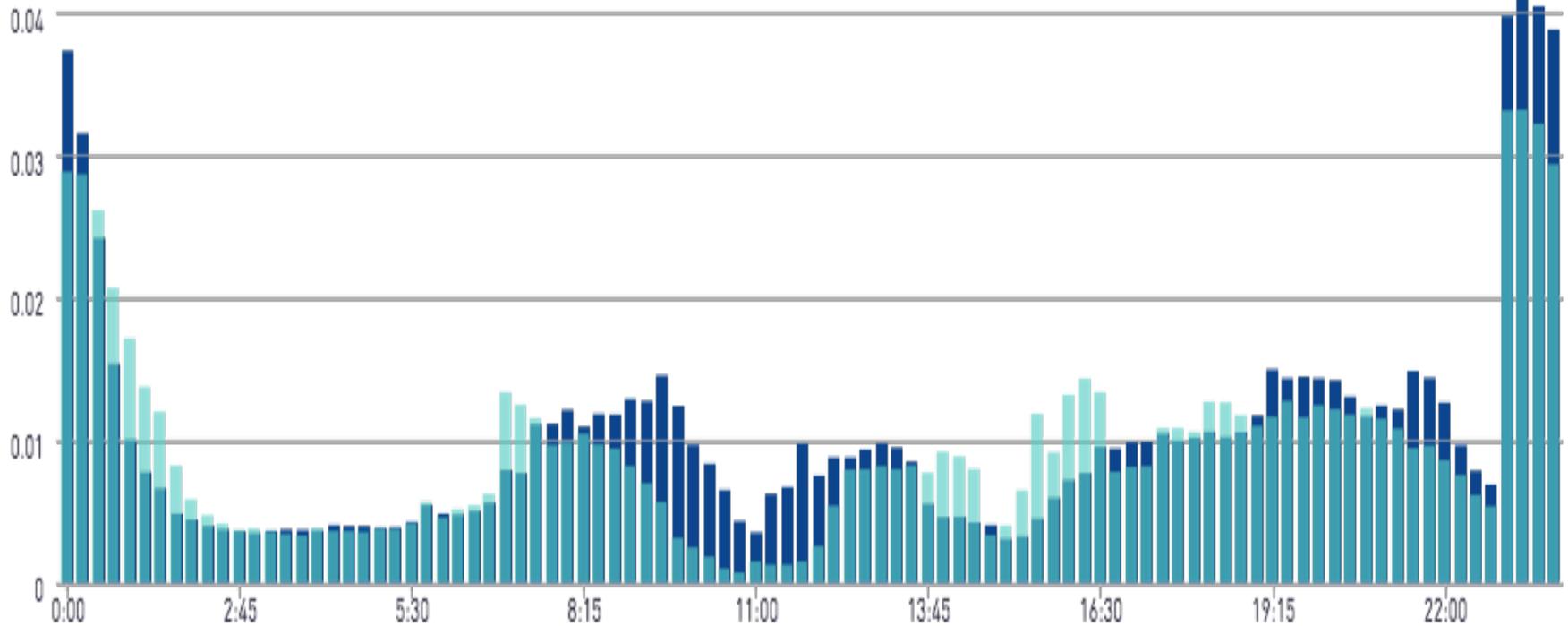
Traditional Monthly
EE Doesn't Solve the
Problem

Metering the Resource Curve



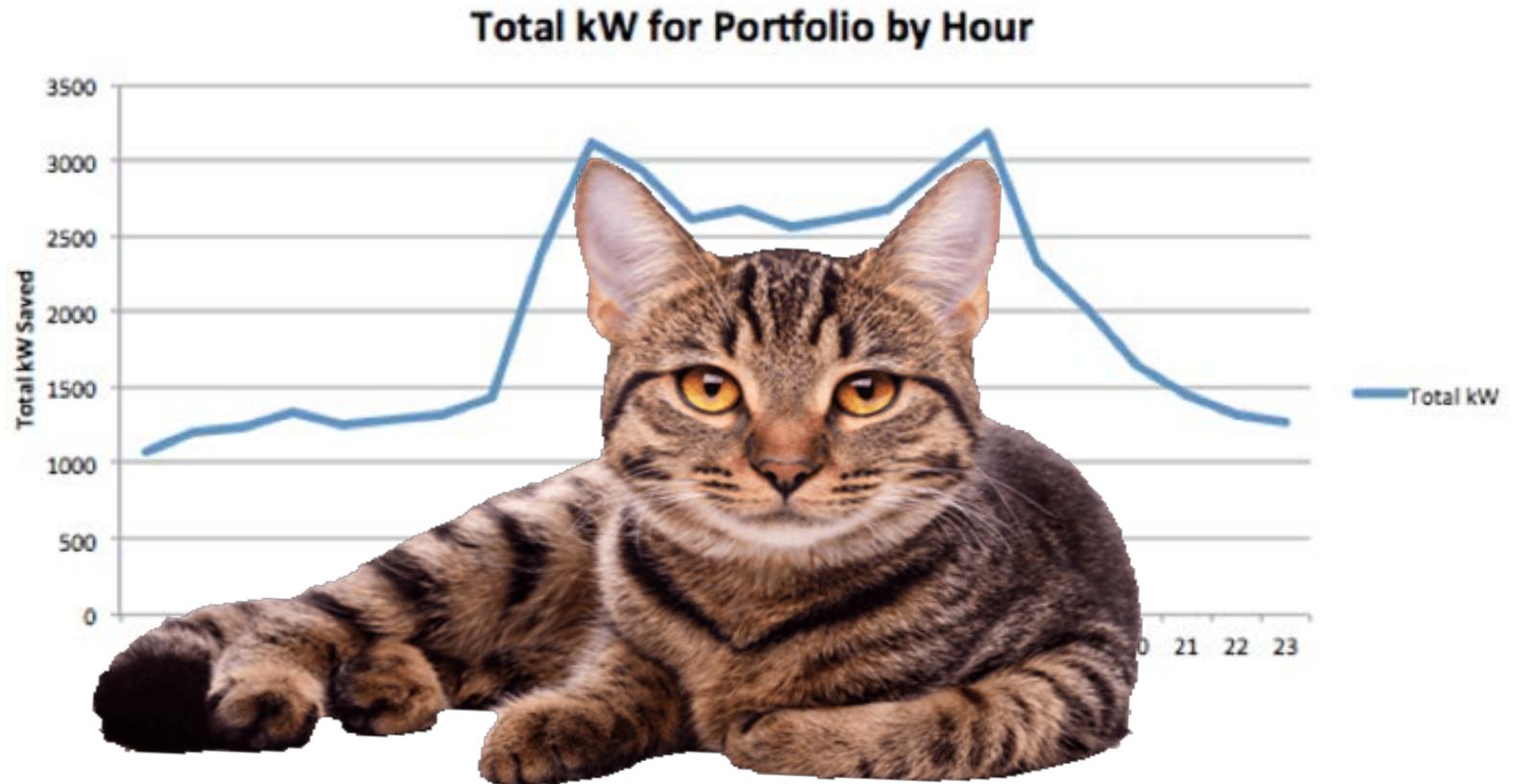
≡ RESOURCE CURVE

Time Based Savings



≡ RESOURCE CURVE

Portfolio Level Grid Impacts



Procurement of Demand Capacity



How
Might
One of
These
Procurements
Work?

Resource Procurement

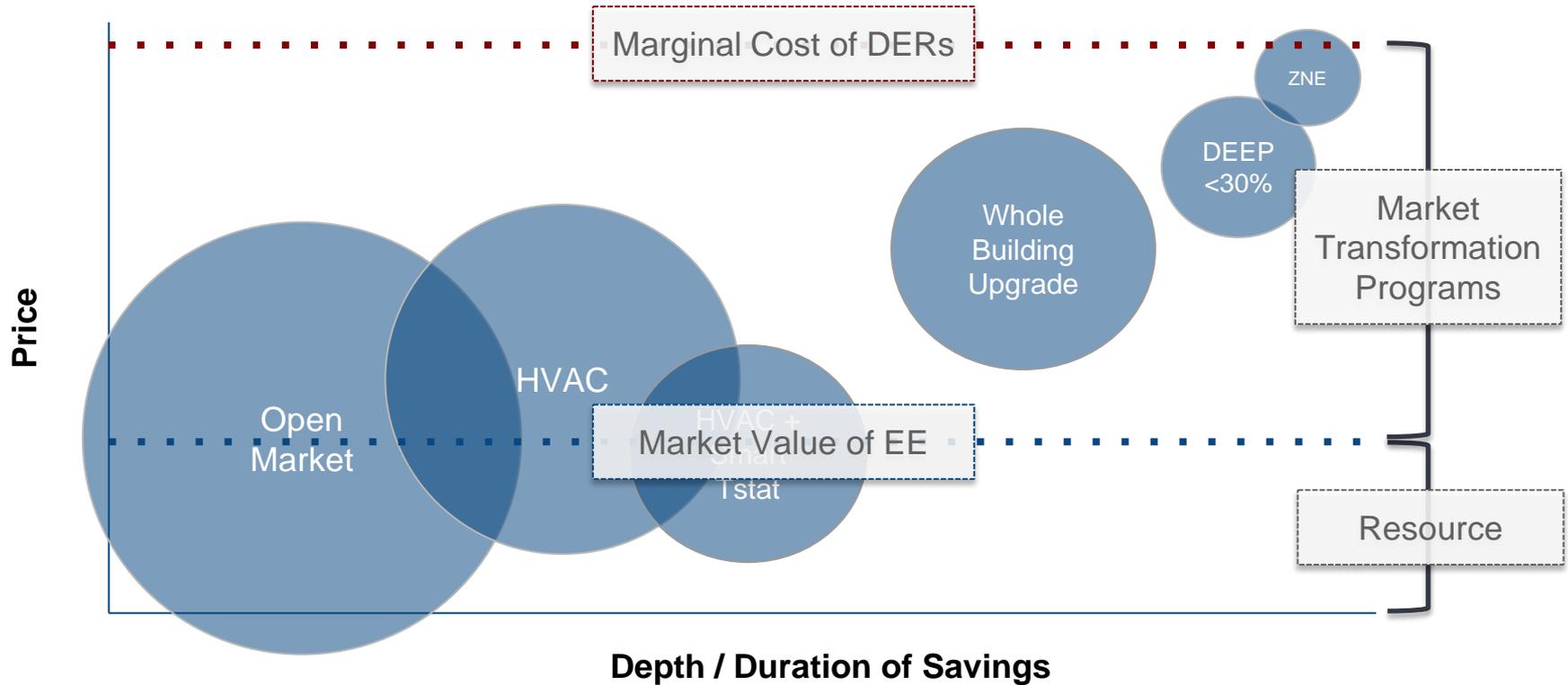
Aggregators Bid
Resource Curve

Reverse Auction

Savings Purchase
Agreement (SPA)



Program Design → Market Design



Roadmap To EE as a Distributed Energy Resource

EEMeter Your Savings

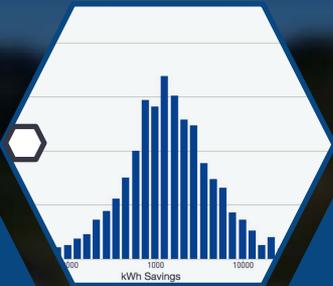
Programmatic P4P

Market P4P with Aggregators

Resource Curve

EE Procurement

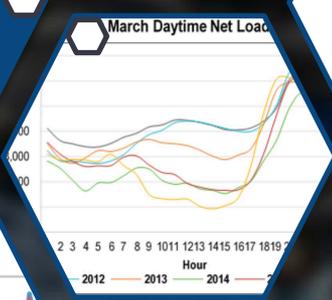




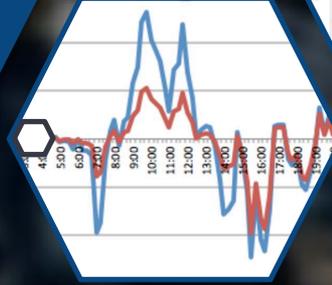
Procurement



Demand Capacity

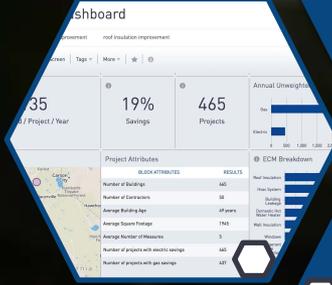


Resource Curve



Pay for Performance

EEMeter



Matt Golden, CEO
mattgolden@openee.io

Bruce Schlein

Citi

Questions?

Thank You

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