

*Welcome to:*

# Commercial PACE: Raising Confidence in Savings to Ramp Investment & Demand

CLEAN:FUND



# Environmental Defense Fund's Investor Confidence Project

*Delivering Investment Quality Energy Efficiency to Market*



# Investor Confidence Project

- **Our Mission** is to enable a market for investment in quality energy efficiency projects by reducing transaction costs and engineering overhead, while increasing the reliability and consistency of savings.
- **History**
  - EDF focus on barriers to capital participation in energy efficiency
  - Three year foundation funded consensus effort
  - Broad participation from investors, engineers, programs, energy service companies, and building owners
- **Key Goals**
  - Increase Deal Flow
  - Manage Performance Risk
  - Create Actionable Data

# Near-Term: Not Enough Deal-Flow

- High Transaction Costs
- Lack of Viable Origination Channels
- Highly Variable Performance
- Complex Custom Projects



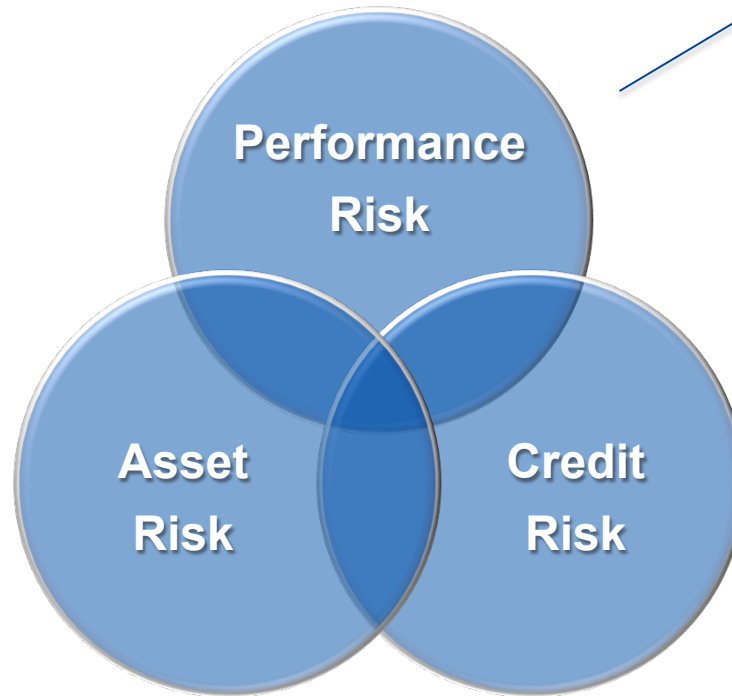


# Long-Term: High Cost of Capital

- More equity than debt
- Not enough volume to securitize
- Insufficient actuarial data
- Performance risk not acceptable to capital markets



# Project Risk Factors



- Benchmarking
- Asset Labeling
- Disclosure

- On-Bill Repayment
- Commercial PACE
- Green Banks

# Performance Risk Barriers



- **Savings Uncertainty**

- Lots of winners and losers (variance)
- Many approaches to savings estimation, installation, commissioning
- Averages penalize performing projects, and incentivize low quality

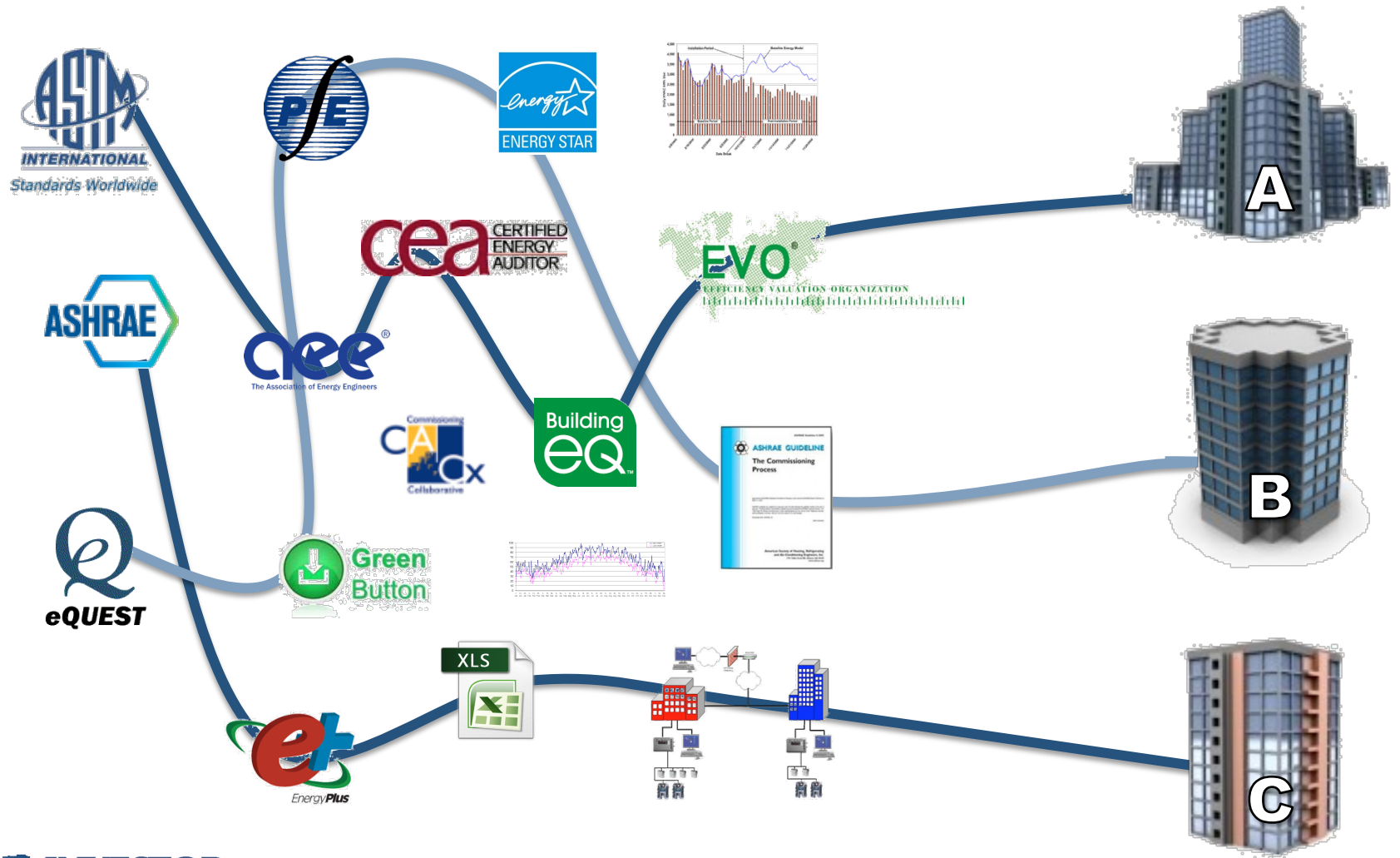
- **Project Origination Costs**

- Lack of standards puts engineering overhead on each firm
- Inability to compare and evaluate projects
- Channels are limited
- Lack of transparency has created market inefficiencies

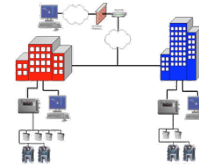
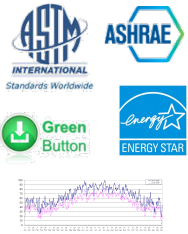
- **Actuarial Data**

- Lack of quality and quantity of data results in a high degree of uncertainty
- Getting data from industry, finance, and the energy sector is challenging
- Data does not describe all factors that impact performance

# What Is An Energy Efficiency Project?



# Energy Performance Protocols



**BASELINING**

- Existing Building
- Drawings
- Weather File
- Energy Usage
- Energy Rates
- Occupancy

**SAVINGS**

- Model File
- Calibration Data
- Bid Packages
- Certifications

**COMMISSION**

- Cx Plan
- Cx Authority
- Test Procedures
- Facilities Req.

**OPERATIONS**

- BMS Points
- Fault Plan
- Maintenance Plan

**MEASUREME**

- M&V Model
- Regression Model
- Adjustments
- Impact
- Baseline Adjustments

# Quality Assurance Certification

- Standardized QA Protocols
- Certification Checklists
- Third-Party Confidence and Technical Underwriting
- Qualified QA Providers
  - Independent Engineering Firms
  - Programs
  - Investors



## ICP Qualified Provider Certificate

I hereby certify that the processes and systems for the designated company conforms both in quality and content to the elements described in the Investor Confidence Project Energy Performance Protocols. The following required elements, procedures and supporting documents were reviewed as a part of this quality assurance effort.

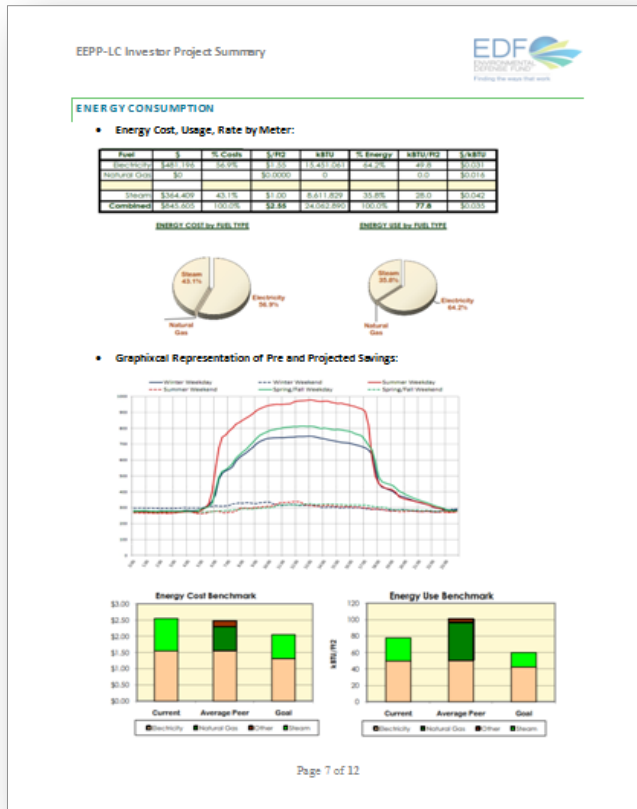
Company Name: \_\_\_\_\_

Use Description: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### Quality Assurance Elements

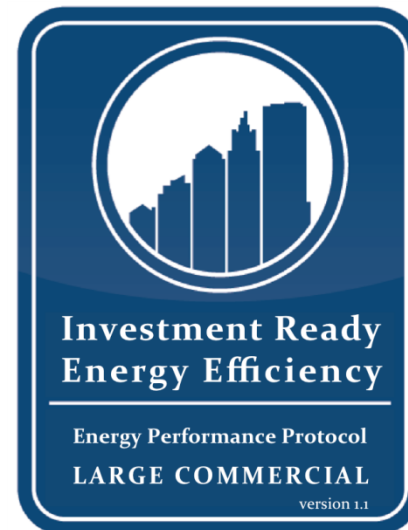
Initials	Item	Required Elements / Details
<b>Baseline</b>		
	Baseline supporting information	14-36 <del>month</del> raw utility data; utility rate structure; copy of at least one bill for each utility
	Normalized baseline	12 <del>month</del> period start/stop dates; reason for selection; corresponding weather data; non-routine variables (occupancy schedules; space types/uses; vacancy rates; building size); $R^2 > 0.75$ ; $CV(RSME) < 0.2$
	Building asset data	Envelope; HVAC; lighting; controls; schedules; building drawings; field survey results
	Annual load profiles	Monthly energy consumption and peak demand
<b>Savings Calculations</b>		
	Modeler credentials	ASHRAE BEMP, AEE BESA, PE, 5 years exp
	Energy model and supporting data	ASHRAE Standard 140 model; model input files; weather file; model supporting data (equipment part load profiles, operating conditions, efficiencies, schedules)
	Model calibration	Model output files, calibrated +/-15% monthly to baseline; calibration adjustment descriptions
	Model process description	Non-ideal operation; malfunctioning systems; large multi-story interior spaces; stack effect for tall buildings; shading effects from surrounding buildings; known microclimate effects
	Model key metric benchmarks	Match BEM Office Benchmarks; end-use energy usage; validate fundamental operating assumptions
	ECM calculations and supporting data	ECM model variables and sources / reasoning
	Cost estimates and economic performance	Breakdown of cost details and incentives, investment criteria (SPB, ROI, IRR, SIR), packaged ECM results (interactive effects), ECM % savings of total energy use

# Investment Ready Energy Efficiency



Projects that are developed following the ICP Protocols, that have been verified by a qualified third party can carry the designation

Investors and underwrites can have confidence in the data they need to make an investment decision:



# Investor Confidence Project Roadmap

- **Large Commercial**

- Larger Project (over \$1MM), Whole-building retrofits
- Large Commercial Update v1.1 Released June '13.

- **Standard Commercial**

- Smaller projects (under \$1MM), Lighter engineering requirements
- V1 Released September 2013

- **Targeted Commercial**

- Single Measure or Non-Interactive Retrofits
- Released January 2014

- **Multifamily**

- Release Q1 2014

- **Quality Assurance Protocol**

- Currently in BETA



# Stakeholder Value of Standardization

<p><u>Building Owners</u></p> <p>Greater confidence in savings Access competitive financing</p>	<p><u>Financial Markets</u></p> <p>Ensure performance risk is managed Create large pools of conforming projects</p>
<p><u>Project Developers</u></p> <p>Connect projects to capital Manage performance risk</p>	<p><u>Insurance Industry</u></p> <p>Underwrite performance risk Reduce transaction time and costs</p>
<p><u>Energy Service Companies</u></p> <p>Increase deal flow by accessing channels Reduce engineering transaction costs Manage performance risk</p>	<p><u>Technology Providers</u></p> <p>Common project taxonomy that crosses platforms Help your customers connect projects to investors</p>
<p><u>Utilities / Capacity Markets</u></p> <p>Meet capacity and regulatory requirements Manage EM&amp;V risk</p>	<p><u>Programs and NGOs</u></p> <p>Link efforts to a marketplace of investors Develop a national market with common standards</p>

# ICP Ally Marketplace



# Creating One Big Market for Investors



# Investor Confidence Project

[www.EEperformance.org](http://www.EEperformance.org)

For More Information:

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Environmental Defense Fund

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SIMON | PROPERTY GROUP



# Investor Confidence Project

20 January 2014

## INVESTOR CONFIDENCE PROJECT

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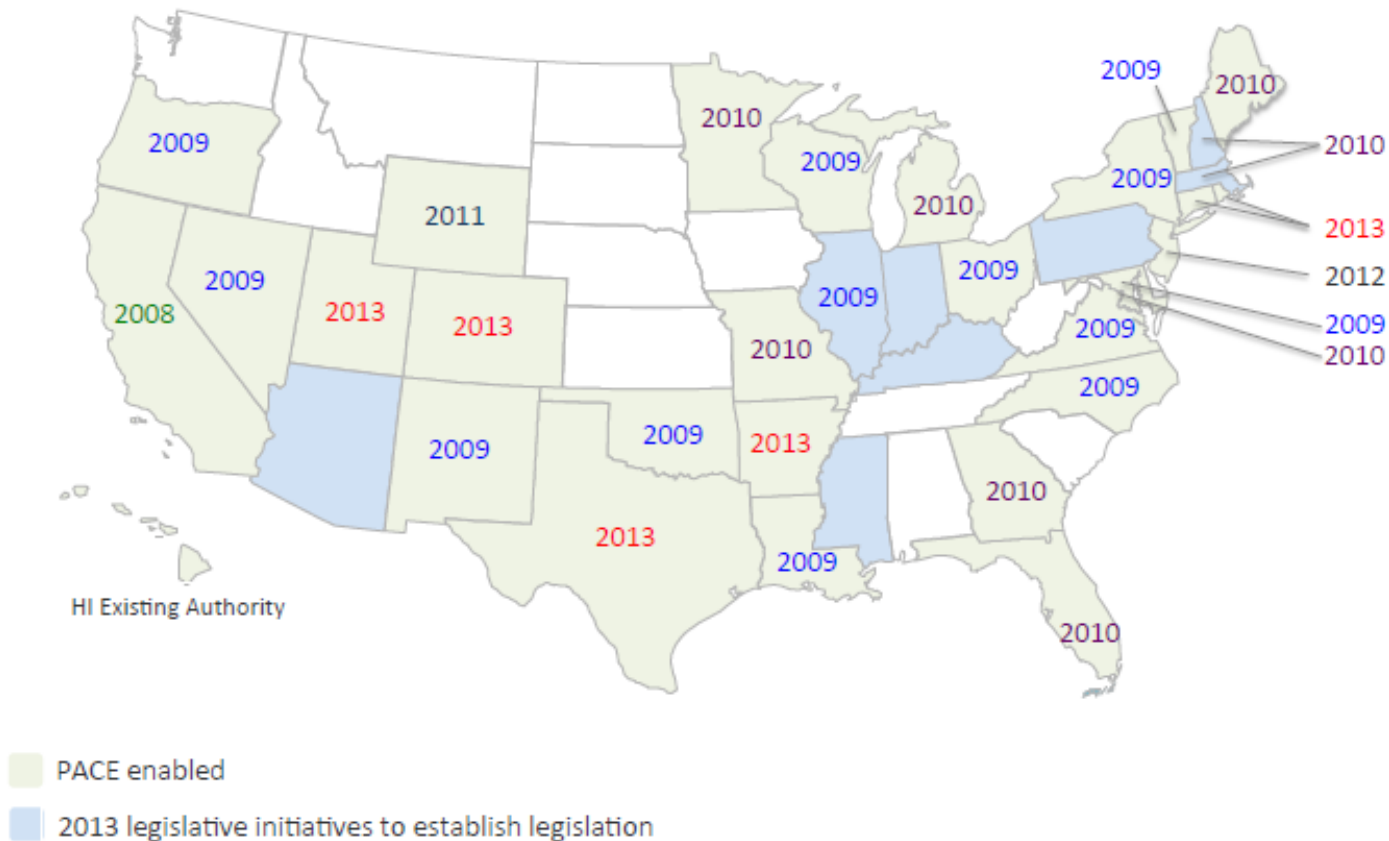
### PACENow is an ICP Ally

Standard methods for benchmarking buildings, audits to identify EE/RE upgrades, and measurement and verification of outcomes builds critically needed **CONFIDENCE** among:

- ✓ Building Owners
- ✓ Project Funders
- ✓ Existing Mortgage Lenders
- ✓ Government Decision Makers

# PACE LEGISLATIVE HISTORY

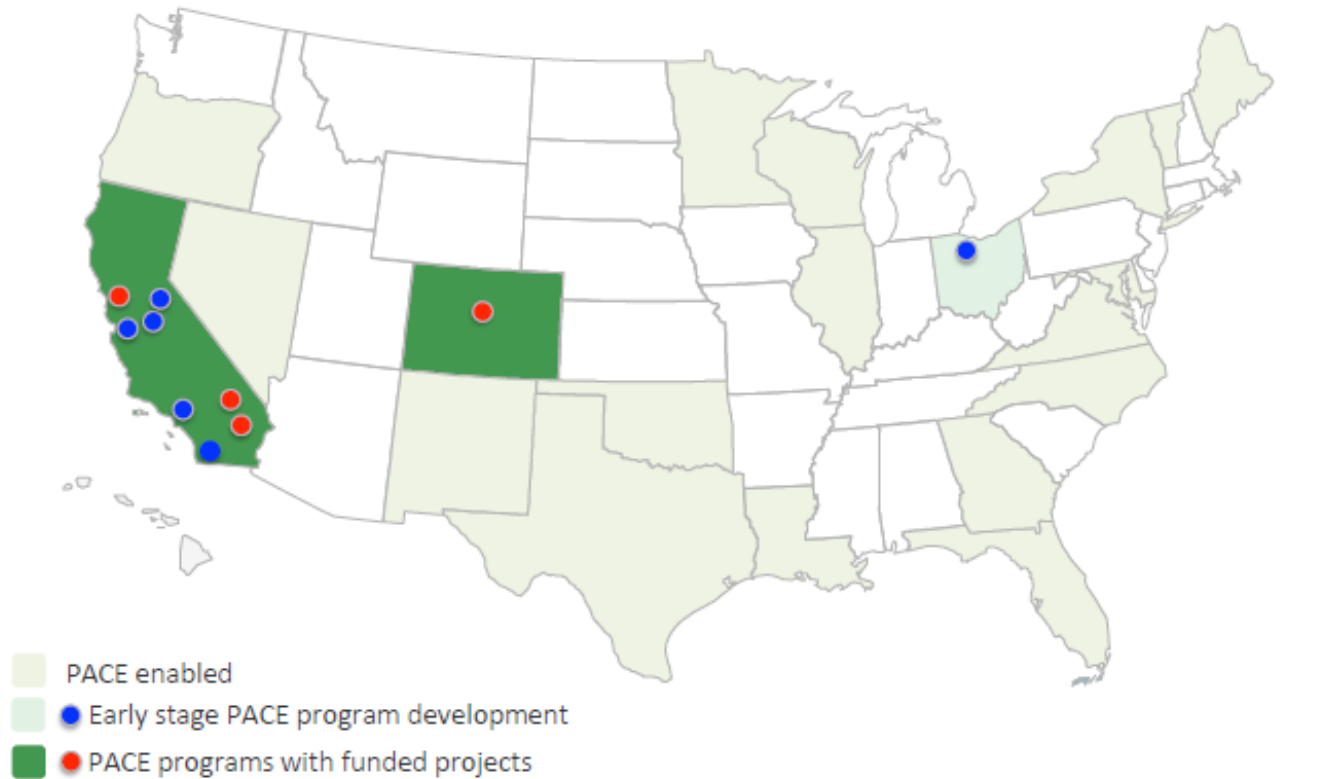
Today – 31 states and DC account for 80% of US population



## JUNE 2010

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27 Projects completed - \$5 million

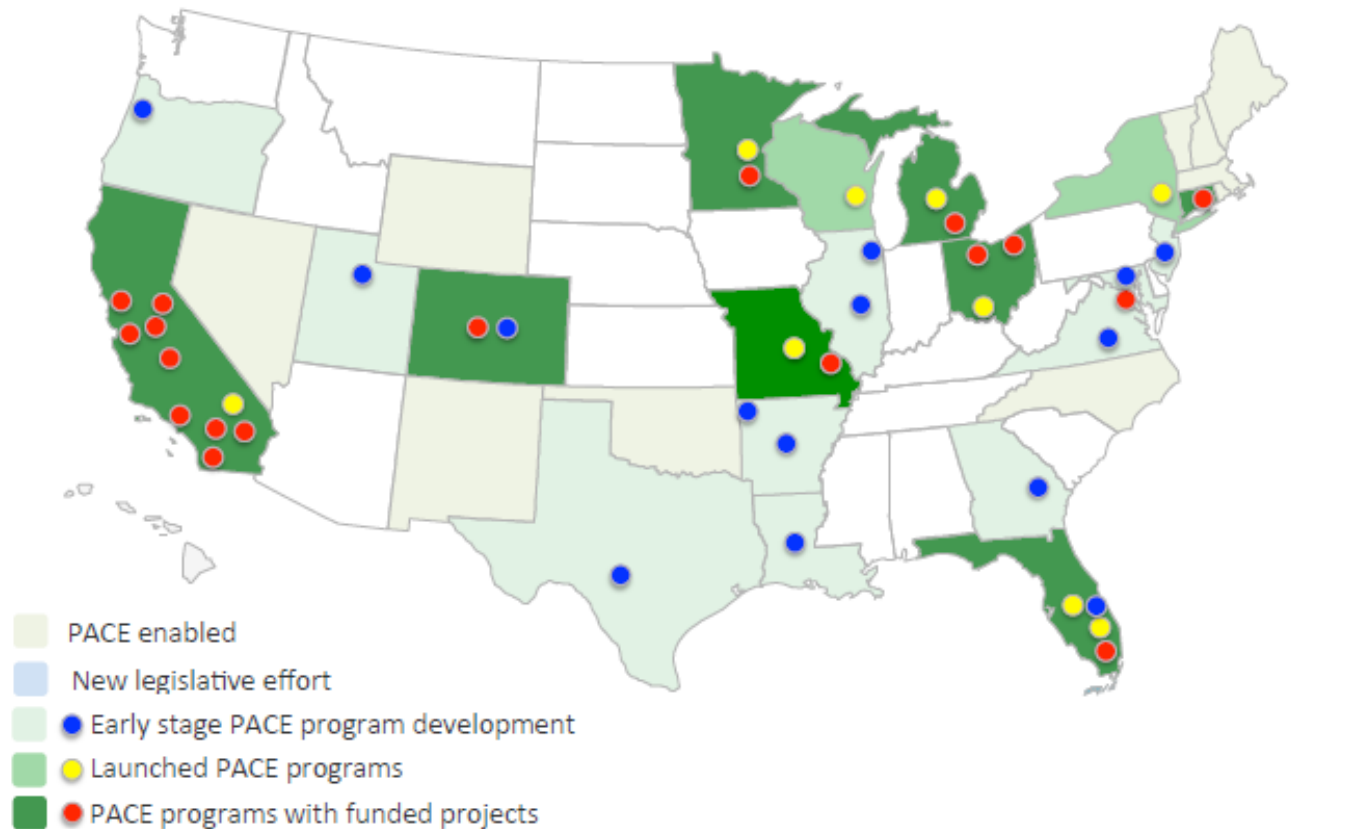




# PACE PROGRAMS TODAY

208 Projects completed - \$63 million

Pipeline Projects - \$220+ million



## PROGRAM ADMINISTRATION

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### Decentralized Concept – Spectrum of Models

- PACE Platform – Municipality as “Loan Servicer”
- Sole municipality
  - ✓ Edina (MN), San Francisco (CA), Ann Arbor (MI), Sacramento (CA)
- Multiple municipalities – Economies of scale
  - ✓ Consortiums
    - i. California (CaliforniaFIRST, Figtree, LA County)
    - ii. Florida (Florida Green Energy Works, Ygrene)
    - iii. Michigan (MI Lean & Green)
    - iv. New York (Energize New York)
- Statewide – Uniformity and Scale
  - ✓ Connecticut

## SIMON PROPERTY GROUP – LAKE COUNTY, OH

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Simon used PACE for a \$3.4 million multi-project energy efficiency upgrade to its Great Lakes Mall near Cleveland

“It is our hope that we will serve as pioneers in this arena, encouraging others to explore the many ways to reduce energy use now, rather than delaying sound financial and environmental decisions.”

*George Caraghiaur, SVP for Sustainability at Simon Property Group*

## HILTON LOS ANGELES/UNIVERSAL CITY, CA

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The Hilton Los Angeles/Universal City used PACE financing to fund \$7 million worth of sustainable upgrades, making it the largest commercial PACE project in the country.

“PACE is the only funding mechanism that is credible in providing verifiable information to our investors, and therefore is the ideal tool for us to move forward in becoming the gold standard in sustainable hotels.”

*Mark Davis, Hilton Los Angeles/Universal City General Manager.*



## PROLOGIS, INC. – SAN FRANCISCO, CA

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Prologis used PACE to finance a \$1.4 million energy efficiency and solar energy project at its San Francisco headquarters

“Prologis is optimistic about the future of PACE. There are a number of opportunities over a long term in other property sectors too.”

*Aaron Binkley, Director of Sustainability Programs*





## C-PACE CONNECTICUT - NORWALK CENTER

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Norwalk mall owner found PACE was ideal to finance energy efficiency and renewable energy improvements. The project resulted in 158,000 lb in avoided greenhouse gas emissions and estimated annual savings of \$17,500.



### **Project Economics**

Amount - \$285,000

Term – 13 years

Rate – 4.5% fixed

Building Value - \$25 MM

## TOLEDO – LUCAS COUNTY PORT AUTHORITY, OH

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PACE has financed over \$16 million in energy efficiency upgrades to 59 buildings in Toledo in the past year with bonds placed by the Port Authority. Project mix includes buildings owned by:

- City of Toledo
- Port Authority
- Private Commercial

## MOUNTAIN VILLAGE – SONOMA COUNTY, CA

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Sonoma Mountain Village used PACE to finance a 1 MW solar electric system in Rohnert Park (CA) that combined with an older system allowed SMV to cover 100% of its electric needs from on-site renewable power.

### ***Project Economics***

Amount - \$1,600,000

Term – 20 years

Rate – 7% fixed

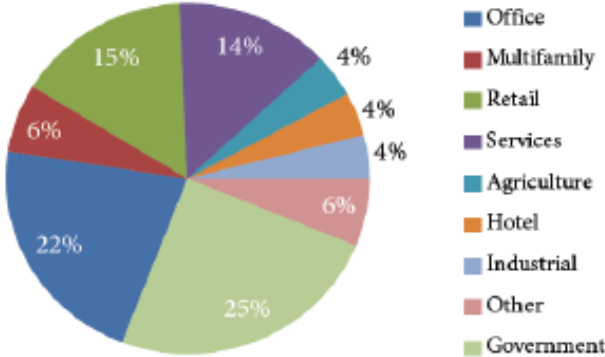
Building Value - \$50,000,000

PACE Assessment to Value – 3.2%



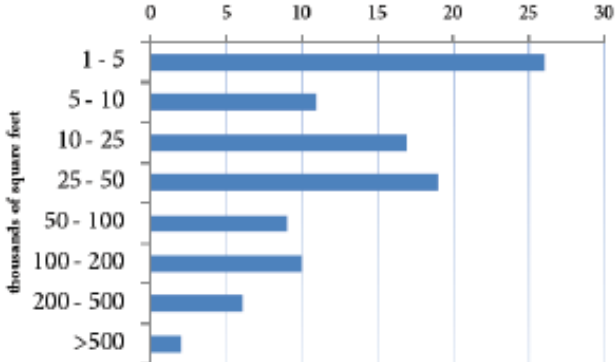
# PACE MARKET DATA

Projects by Building Type



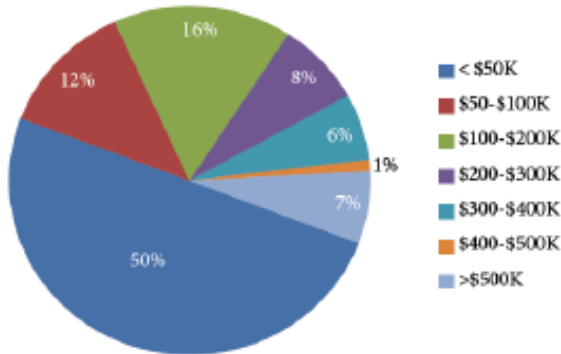
Note: Chart based on 176 projects.

Number of Projects by Building Size

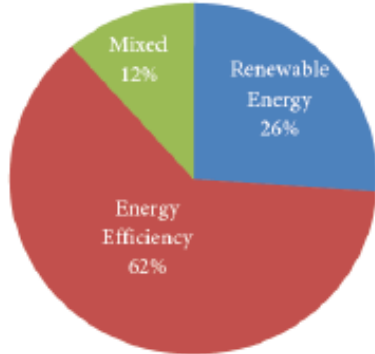


Note: Graph based on 100 projects.

Projects by Size



Projects by Type of Improvement



# PANEL DISCUSSION



# DAVID GABRIELSON

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David Gabrielson is PACENow’s Executive Director. He was introduced to PACE while helping develop Energize Bedford, an energy efficiency financing program for homes in Bedford, New York, where he has served as an elected Councilman since 2008. Before his careers in energy and politics, David spent over 20 years as an investment banker to state and local governments, financing a wide range of capital facilities and programs at national firms including Credit Suisse First Boston and J.P. Morgan. David earned a bachelors degree in Economics at the University of California at Berkeley and holds a Masters Degree in Public and Private Management from Yale University.

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**Brian J. McCarter**  
CEO  
Sustainable Real Estate Solutions



SRS's cloud-based energy finance and technical underwriting software platform enables a streamlined, transparent and technically sound methodology (*consistent with ICP protocols*) for PACE program stakeholders to underwrite EE & RE projects that yield compelling investment returns. SRS clients include:

- Connecticut's Clean Energy Finance and Investment Authority (CEFIA), C-PACE Program Administrator



- Energy Improvement Corp., Energize NY™, New York PACE Program Administrator



- Los Angeles Better Building Challenge & LA County PACE Programs

Contact:

[bmccarter@srmnetwork.com](mailto:bmccarter@srmnetwork.com)



# Charlene Heydinger

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Charlene Heydinger is the executive director of Keeping PACE in Texas, a trade association created to promote PACE financing throughout the state. PACE legislation, SB 385, was signed into law in June 2013. Charlene leads a broad coalition of stakeholders in preparing a tool kit called “PACE in a Box” to help local communities across Texas promote economic development and conserve water and power through local PACE programs. The effort, named 2013 Statewide Collaborative of the Year by the Texas Renewable Energy Industry Association, has embarked on a statewide campaign to help communities throughout Texas adopt uniform, user friendly, sustainable, and scalable PACE programs.

Contact:

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512.469.6184

Full Bio: <http://www.tklaw.com/charlene-heydinger>



# John Kinney

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John has been the CEO of three INC 500 companies. He was the CEO of Greenline Industries in 2007 and installed 15 biodiesel plants around the world. John sold his interest in Greenline in 2008 and became the Managing Director of Imperial Capital responsible for clean energy companies. He is currently the CEO of Clean Fund, a cleantech specialty finance firm with a specific focus on commercial energy efficiency. John is active in environmental education on the board of NatureBridge, and with the YPO Environmental Network.

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# Panel

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