T&E COMMITTEE #1
March 21, 2013

Discussion

MEMORANDUM

March 19, 2013

TO: Transportation, Infrastructure, Energy and Environment Committee

FROM: Keith Levchenko, Senior Legislative Analyst

SUBJECT: **Discussion:** Residential and Commercial Energy Efficiency Initiatives

The following persons are expected to participate in this discussion:

- David Gabrielson, Executive Director, PACENow
- Brian Toll, Founder and President, Ecobeco; and Founding Member, Efficiency First
- Reuven Walder, Founder and Vice President of Energy Auditing, Ecobeco

Department of Environmental Protection
- Robert Hoyt, Director
- Stan Edwards, Chief of Environmental Policy and Compliance
- Eric Coffman, Senior Energy Planner

Department of Finance
- Joseph Beach, Director
- Rob Hagedoorn, Chief, Treasury Division

Office of the County Attorney
- Scott Foncannon, Associate County Attorney

T&E Committee Chair Berliner requested that the Committee discuss the status of current residential and commercial energy efficiency initiatives, what these initiatives have achieved to date in the County in the context of the County's Climate Protection Plan, and what future initiatives may be worth consideration.

Climate Protection Plan Goals

In April 2008, the Council approved Bill 32-07 (Environmental Sustainability – Climate Protection Plan), which called for an 80% reduction in greenhouse gas (GHG) emissions by 2050 (from an FY05 baseline year), with interim goals of stopping the increase in emissions by 2010 and 10 percent reductions every 5 years through 2050. The County's Climate Protection Plan (January 2009)[1] was developed to identify the strategies the County should pursue (in conjunction with State and Federal initiatives) to achieve these goals. The plan includes 58 strategies across a number of subject areas, including transportation, forestry & agriculture, land-use planning, education & outreach, renewable energy, residential energy efficiency, and commercial/multi-family/public building energy efficiency.

The County's GHG emissions baseline of 2005 assumed that 55% of the County's emissions were from building energy usage (33% from residential buildings and 32% from commercial buildings). Therefore, renewable energy and energy efficiency recommendations are a key part of the plan. Those recommendations are attached on ©1-2.

In fact, the Plan calls for reductions in energy usage in commercial and multi-family buildings by 25% by 2020. DEP expects to utilize the soon-to-be-finalized "Commercial and Multi-Family Building Study" to guide its efforts to meet this goal.

On the residential side, the Plan sets a goal that 50% of County homeowners will take steps to reduce annual energy consumption in their homes by 25% by 2020.

DEP is expecting to update its GHG inventory later this year. This new inventory will help identify where the County stands now in terms of emissions and where the best overall opportunities are for future emissions reductions.

County Initiatives

The County has implemented a number of incentive programs intended to encourage energy efficiency (and clean energy) improvements for residential and commercial properties. These incentives are presented in the following table:

[1] The full text of the County's Climate Protection Plan can be downloaded at: http://www6.montgomerycountymd.gov/content/dep/downloads/air/2009mococlimprotplan.pdf.

Environmental Incentive Programs

	Program	Eligibility	Benefit Provided	Annual Cap	Issues
Montgomery County	Renewable Energy Property Tax Credits*	Owner Occupied Residential single-family homeowners	Geothermal/solar: The lower of 50% of eligilble costs or $5k for h/c system, $1.5k for hot water supply, $5k for device that generates electricity	400k per year	Waiting List. Program not accepting new applicants. Participants on the waiting list can receive a tax credit in future years.
			energy conservation devices: up to $250 credit per property	100k per year	
	Energy and Environmental Design Property Tax Credit	For new and renovated buildings that are certified LEED silver, gold, or platinum	3-5 year property tax credit varying from 10% to 75% of the total property tax for new and renovated buildings that meet LEED silver, gold, or platinum designations	$5 million cap per year in total, $1.5 million for LEED silver buildings, and $2.5 million for LEED gold	
	Home Energy Loan Program	Residential single-family homeowners	Low interest loan (no shorter than 15 years) tied to property tax bill to pay for the purchase of energy efficiency devices and renewable energy devices.	Would depend on how the revolving fund is established.	Program has not been implemented due to concerns raised at the Federal Level regarding the designation of loans under this program as primary liens.
	Commercial/Multi-Family Energy Efficiency Rebates	Commercial and Multi-Family Properties	Grants provided to offset the cost of energy efficiency improvements	Federal Grant Dollars (total = $1.9Million)	Program $$$ spent

In some cases, the County approved initiatives that were never implemented (Home Energy Loan Program) or were implemented but later closed or suspended (Clean Energy Rewards Program, Property Tax Credit for Renewable Energy Devices (solar/geothermal)).

The County took advantage of Federal dollars (Federal Energy Efficiency and Conservation Block Grant (EECBG)) to start a number of efforts that would otherwise have not been possible within existing resources. Within that total, DEP initiated a $1.9 million commercial and multi-family energy efficiency rebate program.

Also included within the EECBG grant was funding for a "Commercial and Multi-Family Building Study."[2] This study, which will be finalized in the next couple of weeks, will provide important information and guidance going forward as new energy efficiency initiatives are developed. An excerpt of the draft conclusions and recommendations is attached on ©3-5. DEP staff will be available to discuss the study at the T&E Committee discussion.

Additionally, there are numerous initiatives available to residential and commercial property owners offered by electric utilities, the State of Maryland, or the Federal Government. These programs include tax credits, subsidies, loan programs, rebates, and other initiatives, many of which change in terms of scope, eligibility, and benefit over time. Many of these are detailed on the DEP website at:

http://www6.montgomerycountymd.gov/dectmpl.asp?url=/Content/dep/energy/EnergyIncentives.asp.

[2] The full text of the Draft Commercial and Multi-Family Building Study is available at http://www6.montgomerycountymd.gov/dectmpl.asp?url=/content/dep/energy/Energystudy.asp.

Commercial PACE Programs

Committee Chair Berliner asked David Gabrielson, Executive Director of PACENow (an organization that advocates for PACE programs throughout the country and assists jurisdictions in setting up programs) to speak about the status of Commercial PACE (property assessed clean energy) programs nationwide and in our region. Some summary information about Commercial PACE programs is attached on ©6-7. Mr. Gabrielson's presentation is attached on ©20-31.

Commercial PACE loans tend to be quite large and, therefore, any sizable PACE program requires private funding with the governmental entity providing the collection process via the property tax bill. However, in the State of Maryland, counties and municipalities do not have the authority to use the property tax bill to collect private charges.

There is a bill in the current State legislative session (SB 1016, sponsored by Senator Brian Frosh) that would provide the necessary enabling authority. However, it is unclear what chance this bill has of passage.

Residential Energy Efficiency Incentives

Because of concerns raised by the Federal Housing Finance Agency (FHFA) regarding the mortgage implications of residential PACE programs such as HELP, the County's residential PACE program has not been implemented. However, there are a number of other residential initiatives that have been implemented and/or which could be implemented in the near future.

Brian Toll and Reuven Walder, co-founders of Ecobeco (a company that provides home energy audits and other energy efficiency solutions to residents) have been invited to speak to the status of current residential energy efficiency initiatives and some potential new programs they believe warrant consideration in the near future.

One program of interest is the Department of Energy's Home Energy Score program. This program utilizes a comprehensive energy audit of a property (similar to the Maryland Home Performance with ENERGY STAR® audit) to score a property. A sample score sheet is attached on ©8-12. This program could help provide a valuable marketing tool to energy efficient properties. Some slides provided by Mr. Toll regarding a potential pilot project for this program in Montgomery County are attached on ©13-19.

Attachments

KML:f:\levchenko\dep\energy issues\energy efficiency and pace\t&e discussion 3 21 13 residential and commercial energy efficiency initiatives.doc

Table ES-2 – Summary of Recommendations in the Climate Protection Plan

Renewable Energy

RE-1	Maintain the commitment of the County government and County agencies to purchase a percentage of annual electricity consumption from clean energy sources. Establish energy policy criteria recognizing the benefits and prioritizing the purchase of various clean energy options.
RE-2	Adopt building design guidelines applicable to all County government and agency buildings requiring the use of geoexchange, or the most effective system available, as the primary heating and cooling energy source.
RE-3	Support the installation of solar photovoltaic systems through the use of power purchase agreements in public facilities.
RE-4	Provide revolving and low-interest loans for on-site renewable energy installations.
RE-5	The County should facilitate customer aggregation of renewable energy, including voluntary purchases of electricity from renewable sources or renewable energy certificates, and renewable energy installations.
RE-6	Establish a public-private, non-profit entity to promote, facilitate, develop and invest in clean energy sources for the benefit of Montgomery County agencies, businesses and residents.
RE-7	Investigate the feasibility of adding sustainable energy biogas/combined heat & power (CHP) facilities to WSSC Seneca and Piscataway wastewater treatment sites.

Residential Building Energy Efficiency

EER-1	Develop promotional giveaways and buy-downs of low-cost energy efficient products.
EER-2	Develop energy efficiency programs, in coordination with State and utility-based programs, to assist low income households address their energy needs.
EER-3	Enhance consumer awareness of energy consumption by advocating for utility programs that provide home-energy consumption displays and develop other County programs to increase availability and affordability of in-home energy displays.
EER-4	Develop a low cost loan program to facilitate residential energy efficiency improvements.
EER-5	Create an effective residential energy education and outreach program with the goal that 50% of Montgomery County homeowners will take steps to reduce the annual consumption of energy in their homes by at least 25% by 2020.
EER-6	Promote the deployment of smart grid technologies by utilities serving Montgomery County.

Table ES-2 – Summary of Recommendations in the Climate Protection Plan (cont'd)

Commercial, Multi-family, and Public Building Energy Efficiency

EEC-1	Require ENERGY STAR appliances and equipment, and EPEAT registered IT equipment, in public facilities.
EEC-2	Improve the energy performance of public facilities through enhanced data acquisition and energy efficiency measures.
EEC-3	Establish specific energy performance requirements and timelines for the benchmarking, commissioning and improvement of new and existing commercial and multi-family buildings in order to reduce energy consumption by 25% by 2020. This will be achieved by a combination of education and outreach efforts, incentives, market forces and, if necessary, mandates.
EEC-4	Develop a process for adopting new energy efficiency standards for commercial and multi-family buildings.
EEC-5	Advocate for cost-effective utility-based energy efficiency and demand reduction programs, and form partnerships with local utilities to extend programs to businesses and residents.
EEC-6	Advocate for peak pricing and tiered electricity rate structures that encourage energy conservation by providing pricing signals for energy consumption during peak periods or by large users.
EEC-7	Develop and implement programs to support energy efficiency improvements by residents, managers and owners of multifamily properties, particularly affordable and low-income properties.
EEC-8	Use energy efficient lighting technologies when installing new streetlights or replacing existing streetlights.

Transportation

T-1	Conduct parking supply and pricing study to ensure parking policies and zoning requirements are consistent with transportation demand management goals.
T-2	Establish a car sharing program in Parking Lot District facilities
T-3	Support the Ridership Growth Initiative by 2020 by implementing bus rapid transit on Veirs Mill Road and Georgia Avenue, and study and implement where appropriate light rail transit and bus rapid transit systems in other corridors.
T-4	Conduct transportation planning studies during 2009 in order to better target transportation-related GHG reduction programs.

mcfa

Montgomery County, Maryland Commercial Building Energy Efficiency Policy Study

DRAFT

August 22, 2012

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Figure ES-7. Policies Grouped by Stakeholder Favorability and Potential Energy Savings

	Stakeholder Favorability	
Potential Energy Savings	Lower (*mean score ≤3.0; most respondents tend to view unfavorably*)	Higher (*mean score >3.0; most respondents tend to view favorably*)
Lower (*savings potential ≤3% of baseline usage*)		• Financing/incentives (policies 5, 6, 7, 8, 9) • Mandatory benchmarking • Community challenges
Higher (*savings potential >3% of baseline usage*)	• Mandatory RCx/audits • Mandatory lighting retrofits	• Mandatory energy codes for new buildings

Public Forum and Draft Report Comments TBD (Comments Due September 22, 2012)

Conclusions and Recommendations

Focusing the findings on the County's goal to identify the best policy and program solutions for achieving the 2009 Climate Protection Plan's 25% energy use reduction by 2025, ICF draws the following conclusions:

- **Reaching the energy savings goal will be difficult.** ICF's analysis shows that the technical potential exists to achieve the 25% goal in 10 years. However, this technical potential assumes a perfect world in which neither economics nor market barriers constrain investment; it assumes every energy-using device is instantly replaced with the most-efficient model available. Therefore, reaching the County's goal would require technical approaches that are not in general practice, as well as a very aggressive set of policies and programs.
- **Policies and program solutions can make substantial progress toward the goal.** While no one policy or program reviewed in this Study can meet the savings goal by itself, several showed the potential to attain significant energy savings. This is consistent with energy efficiency policy studies performed around the country, in which there is no one "silver bullet" solution, but a suite of "silver BBs" or "silver buckshot" policies.
- **Stakeholders favor voluntary approaches on balance.** While some mandatory policies, such as building energy codes, received favorable stakeholder ratings, the balance of stakeholder input supports voluntary over mandatory approaches. The County should seek to carefully balance these policy and program approaches in considering its options going forward.
- **EmPOWER Maryland programs offer significant leverage.** Utility ratepayer-funded programs available to the County's commercial and multifamily building owners align well with several of the policy and program options evaluated in this Study, including retro-commissioning, benchmarking, and financial incentives. Given the County's limited funding options in the post-ARRA environment and the current fiscal climate, utility-

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administered programs represent the largest single source of support for the County's efforts going forward.

These conclusions lead ICF to the following recommendations for the County:

- **Develop a suite of policies based on a "voluntary with backstop" approach.** Because utility programs currently offer retro-commissioning and benchmarking services as well as rebates for efficient technologies, the County could leverage these programs through a community challenge approach. The County could challenge larger building owners to commit to voluntary energy savings targets, including benchmarking their buildings, and set quantitative targets for participation and energy savings for a defined time period. If enough of the market participated voluntarily and reached these targets, the County could waive mandatory benchmarking and retro-commissioning regulations. If the targets were not met by the end of the defined time period, regulations would take effect on a pre-established date.

Within this overall recommendation, the following corollary recommendations apply:

- **Focus on larger buildings.** 50,000 square foot buildings or larger represent 75% of commercial floor space in the County. The County can reach 75% of the market while impacting only 1 in 6 buildings.
- **Focus carefully on multifamily buildings**. Although this is a difficult to reach segment because of the wide diversity of build types and ownership patterns, these buildings hold a great deal of the total energy savings potential. Multifamily markets require special emphasis, including tailoring program technologies, incentives, and outreach efforts to meet the specific needs of multifamily owners, managers, and tenants.
- **Focus on the most cost-effective avenues.** Policies and programs should be designed to target the most cost-effective opportunities in the commercial and multifamily markets, including time of construction, time of equipment replacement, time of refinancing or resale, or major renovation.
- **Leverage existing resources.** The current EmPOWER Maryland utility programs are the principal source of incentives and technical resources for helping commercial and multifamily buildings achieve the County's energy savings goals. The County Green Business Certification program is a framework in which the County should launch the community challenge approach. Energy services providers can also be sources of expertise that the County can leverage to help launch and sustain its policy and program initiatives.
- **Provide implementation support from County Staff.** This initiative will require momentum driven from the County and adequate staffing. While leveraging outside resources is important, experience in Washington, D.C. and other local governments makes it clear that some basic staffing is needed to ensure that new initiatives move forward and succeed. Even if only one significant policy is implemented, at least one full-time staff position would likely be needed to make the effort succeed; multiple policies and programs would likely increase total staffing and related resource needs.

Commercial PACE

Momentum is building across the U.S. for commercial PACE programs that drive energy efficiency, renewable energy, and in some cases, water conservation measures.

Commercial PACE is completely voluntary. Property owners can determine if they will benefit from making their buildings more efficient. Only participating properties are subject to a specific PACE assessment. PACE can make it easier for owners of commercial property to implement energy efficiency and renewable energy projects that can save them money, make their properties more valuable, and create local jobs.

Benefits of PACE for Commercial Real Estate Owners

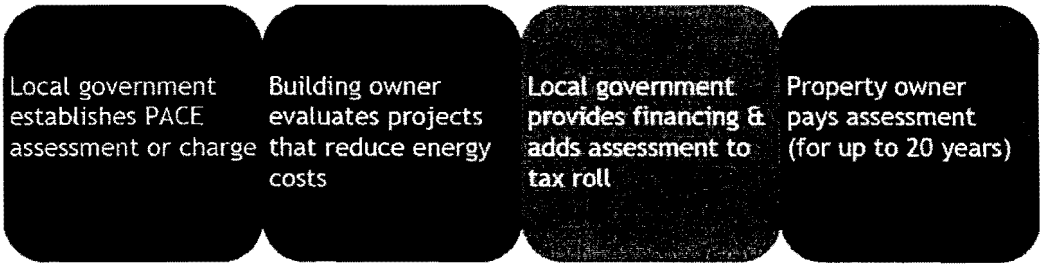
- No up-front costs & funds available for up to 20 years
- Immediate benefit to cash flow raises Net Operating Income
- Solves split incentives issue
- Increases building value & building efficiency
- Treated like other property taxes and assessments
- No additional debt load

Benefits of PACE for Commercial Mortgage Lenders

- Assessment mechanism is well understood
- Increased Net Operating Income improves mortgage coverage
- Increased value of collateral outweighs lien exposure
- PACE can finance needed capital improvements with no additional debt

How Commercial PACE Works?

Commercial PACE program could be put in place using the following simple steps:



Step 1: State and local governments establish, in law or public policy, a specific goal or objective: promoting energy efficiency as a means to promote jobs or better air quality, for example. A municipal government may establish a type of land or real property secured benefit district.
Step 2: Property owners within the district (or the municipality if a district is not required) can voluntarily choose to participate and an experienced contractor assesses the scope of desired improvements. This may involve a thorough energy audit for efficiency measures and their projected savings and costs, or cost estimates for renewable projects weighed similarly against projected energy savings.
Step 3: The municipality provides financing for the project, typically by selling bonds secured solely by payments made from participating property owners.
Step 4: Homeowners who receive a financing benefit from the municipality will agree to accept a property tax assessment or charge for up to 20 years, though shorter periods may be chosen or required by the municipality.

These 4 simple steps improving energy security for states and local communities by reducing their reliance on inter-state imports and strain on an already overloaded and outmoded grid system.

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PACE Programs by State

Commercial PACE programs were pioneered in Boulder County, Colorado and California (Sonoma County, Palm Desert, and Placer County). These programs have made a total of 71 PACE commercial financings, proving that PACE can be an attractive source of capital to non-residential property owners. A study published in 2011 by Lawrence Berkeley National Lab, the Clinton Climate Initiative, and Renewable Funding summarizes the results of these early programs.

Today, there is a number of commercial PACE programs across the country. Check out our **interactive map** to see if there is PACE near you or jump to the **list of programs** by state.

Commercial PACE Case Studies

There are several commercial PACE projects that deserve special attention. For instance, Simon Properties Group – the largest mall owner in the world – took advantage of PACE financing. The company has installed a "Cool Roof," a highly reflective and emissive roofing system that stays 50 to 60 degrees cooler than a typical roof, on its property in Santa Rosa, California. This state-of-the-art concept was made possible entirely through the Sonoma County Energy Independence PACE program. Check out a full story about Santa Rosa Plaza in California.

Another notable commercial PACE project was undertaken in Edina, Minnesota. A local business owner was looking for the most cost-effective way to put solar panels on his roof, while a local contractor was looking for a way to sell solar panels. PACE was a perfect solution for both parties. A low-cost commercial PACE program was set up in Edina and a project was financed this spring. The Edina model for PACE demonstrates how private demand for energy improvements, coupled with public resources, produces inspiring results. Read our feature story on **Edina PACE program**.

Commercial PACE Service Providers

A growing number of companies are providing a range of administrative and financing services to PACE programs nationwide. PACENow is keeping track of most **PACE service providers**. If you would like to list your business on our site, please contact us via e-mail: pace@pacenow.org.

Further Resources

Our **resources page** contains PACE webinars, newsletters, latest reports on energy efficiency, PACE marketing materials, videos on PACE, and other relevant information. Sing up for our free newsletter to receive industry updates.

There are other EE/RE financing models out there. Please check out our brief summary of other financing models.

Additionally, the U.S. Department of Energy released the following documents on commercial PACE:

Commercial PACE Primer. The U.S. Department of Energy. Power Point. 2010.

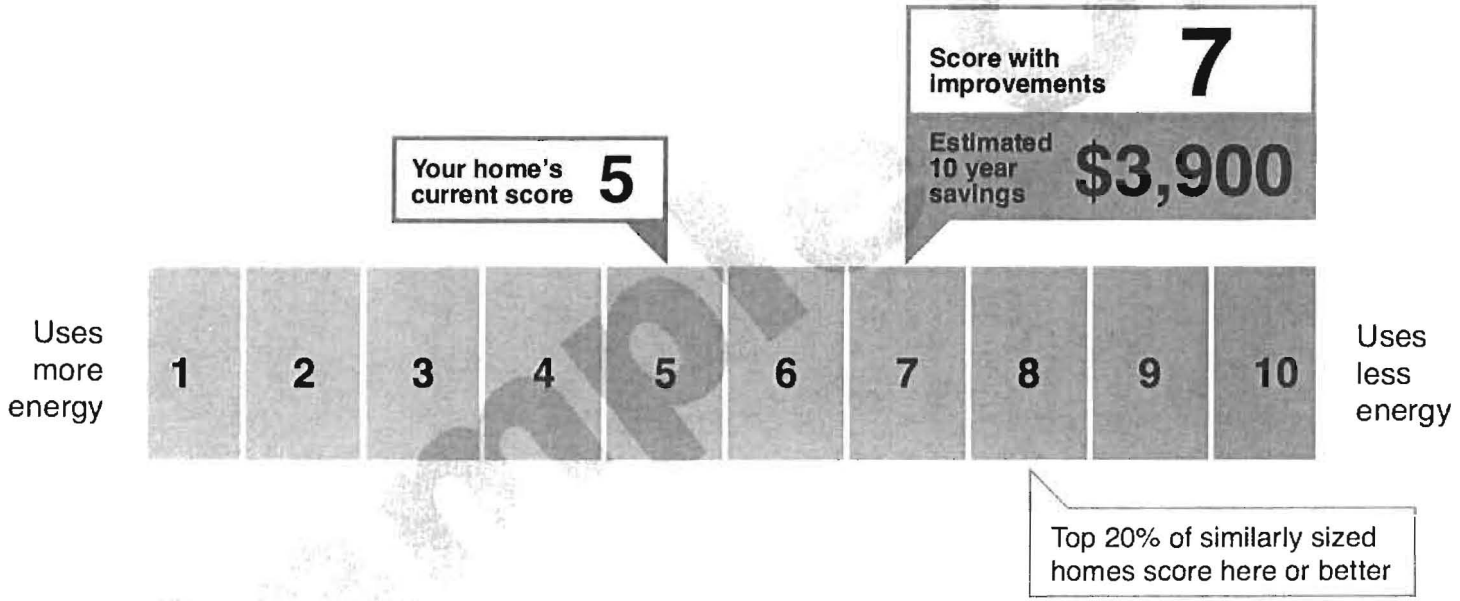
Commercial Property-Assessed Clean Energy (PACE) Financing. The U.S. Department of Energy. Power Point. 2010.

Home Energy Score

Score | Home Facts | Recommendations

Address: **12345 Honeysuckle Lane**
Smithville AR 72466

Home size: **2,800 square feet**
Year built: **1970**
Air conditioned: **Yes**



U.S. DEPARTMENT OF ENERGY

homeenergyscore.gov

The **Home Energy Score** is a national rating system developed by the U.S. Department of Energy. The **Score** reflects the energy efficiency of a home based on the home's structure and heating, cooling, and hot water systems. The **Home Facts** provide details about the current structure and systems. **Recommendations** show how to improve the energy efficiency of the home to achieve a higher score and save money.

Assessment date: **01/12/2012**
Scored in: **2012**
Score ID: **1913375**
Qualified assessor #: **101019**

Home Energy Score

Score | **Home Facts** | Recommendations

About this home

Assessment date	01/12/2012
Address	12345 Honeysuckle Lane
City, state, zip	Smithville AR 72466
Year built	1970
Number of bedrooms	4
Stories above ground level	2
Interior floor-to-ceiling height (feet)	8
Conditioned floor area (all stories combined, square feet)	2,800
Direction faced by front of house	North

Estimated energy use per year

Total energy (MBTUs)	228
Electricity (kWh)	8,430
Natural gas (therms)	1,210
Oil (gallons)	0
Propane (gallons)	0

Comments

Score ID: **123456789**
homeenergyscore.gov

Home Energy Score

Score | **Home Facts** | Recommendations

Air-tightness

Air leakage rate	3,800 CFM50

Roof, attic & foundation

Roof

Roof construction	Roof (standard roof) composition shingles or metal, R-0
Roof absorptance	0.8

Attic

Attic or ceiling type	Unconditioned attic
Attic floor insulation	R-19

Foundation

Foundation type	Vented crawlspace
Floor insulation above basement or crawl space	R-13
Foundation walls insulation level	R-0

Wall construction

Front (or all sides same)	Wood frame vinyl siding, R-11

Windows & skylights

Skylights

Does the house have skylights?	No

Windows

Window area front (square feet)	95
Window area right (square feet)	50
Window area back (square feet)	125
Window area left (square feet)	40
Are the window types the same on all sides?	Yes
Window type front (or all sides same)	Double-pane aluminum with thermal break clear

Score ID: **123456789**
homeenergyscore.gov

Home Energy Score

Score | **Home Facts** | Recommendations

Systems

Heating system

Type	Central gas furnace
Efficiency value	80.0 AFUE

Cooling system

Type	Central air conditioner
Efficiency value	12.0 SEER

Ducts

Duct location	Vented crawlspace
Are the ducts insulated?	Yes
Are the ducts sealed?	No/don't know

Hot water system

Fuel	Piped natural gas
Efficiency value	0.59 EF

For more information on calculation methods, technical terms and units of measure, please visit **homeenergyscore.gov**

Score ID: **123456789**
homeenergyscore.gov

Home Energy Score

Score | Home Facts | Recommendations

Address: **12345 Honeysuckle Lane**
Smithville AR 72466

Repair now: These improvements will save you money, conserve energy, and improve your comfort now

	Estimated utility bill savings ($/year)
Ducts: Have your ducts professionally sealed to reduce leakage	$140
Air tightness: Have a professional seal the gaps and cracks that leak	$110
Basement/crawlspace: Insulate the floor above unconditioned space to at least R-38	$50

Replace later: These improvements will help you save energy when it's time to replace or upgrade

	Estimated utility bill savings ($/year)
Water heater: Pick one with an ENERGY STAR label	$50
Furnace: Pick one with an ENERGY STAR label	$150

With these improvements reduce your home's carbon footprint by: 43%

Score ID: **123456789**
homeenergyscore.gov

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Home Energy Score Pilot in Montgomery County

Brian Toll, Ecobeco & Efficiency First

Reuven Walder, Ecobeco

March 20, 2013

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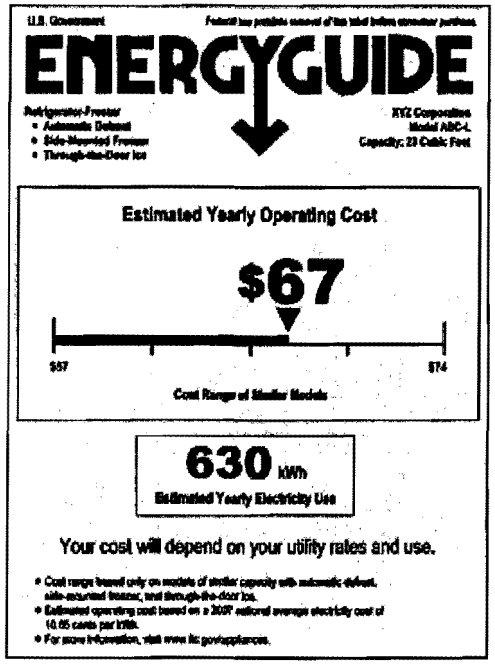
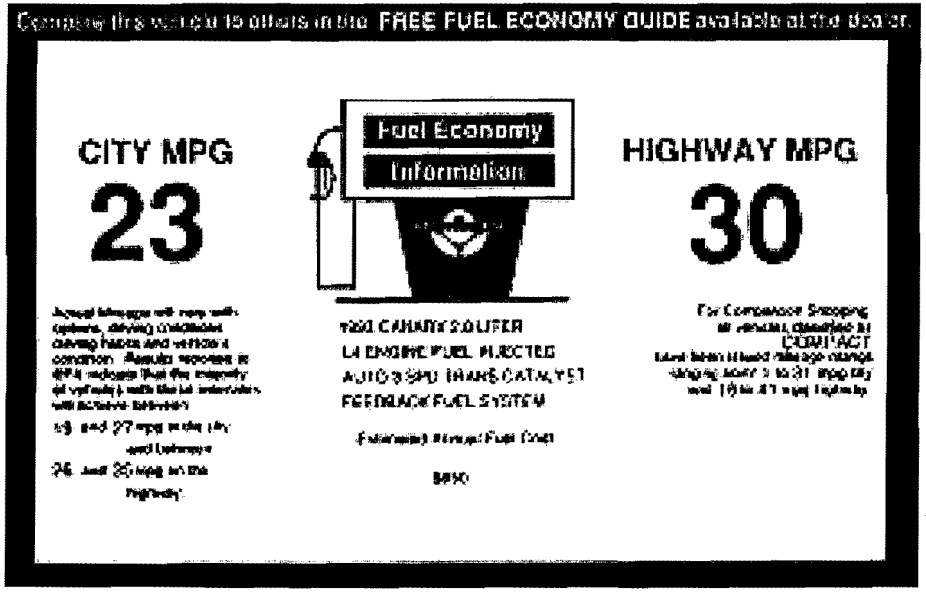
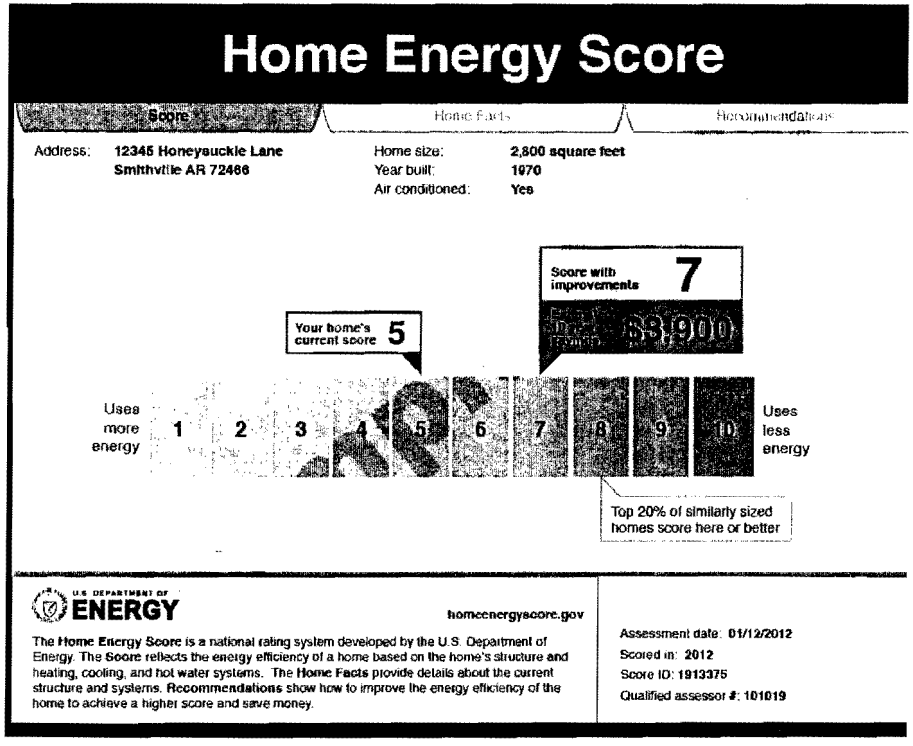
Extension of Existing Consumer Tools





What is the Home Energy Score?



- Developed and maintained by DOE
- Free to use, but requires a Sponsor organization
- Ignores occupants' behavior and looks only at the building and its mechanicals.
- Estimates energy use for an "average" family to provide an apples to apples comparison across homes.

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Why Do We Want Home Energy Score?

- It provides information to help consumers make better decisions about buying homes by introducing operating costs.
- Home Buyers will seek out homes with higher scores / lower operating costs. Research shows well-scoring homes sell faster and for more money.
- Home Sellers will compete with other sellers to enhance their scores. They will hire contractors to make improvements.
- Asset-based scores complements utility disclosure.
- Once scores are known, neighbors will compete with each other to achieve better scores. The Jones' effect.
- Tens of thousands of homes are sold each year in MoCo, and energy efficiency / operating costs should be part of the discussion on both sides of the transaction.
- HES provides education and plants the seed for taking action on energy efficiency / operating costs in the future.
- Scores will create green jobs in the Home Improvement industry.

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Implementation

- A voluntary Home Energy Score pilot for FY2014.
- The County would be the program sponsor. It needs funds to perform required quality assurance and supervise providers. There is no software cost.
- County will market generally to residents via existing channels, and we will use funds to perform deeper marketing tests.
- Contractors will use our own funds to market it to potential and existing customers.
- Realtors (GCAR) will obtain a grant from NAR to educate its members.
- Market sets the price. It is an easy add-on to Home Performance as part of an audit or test-out. Home Inspectors might add it to their existing services. Or could be sold as a stand-alone item.
- In the future, a fee per score could fund the County's responsibility, or perhaps the State takes it over as part of EmPower Maryland.
- FY2014 Budget ask: $35,000 - $50,000

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The Washington Post

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Study finds that energy-efficient homes often command higher prices

By Kenneth R. Harney, Published: July 19, 2012 | Updated: Friday, July 20, 6:55 AM

It has been a controversial question in the home real estate market for years: Is there extra green when you buy green? Do houses with lots of energy-saving and sustainability features sell for more than houses without them? If so, by how much?

Some studies have shown that consumers' willingness to pay more for Energy Star and other green-rated homes tends to diminish during tough economic times. Others have found that green-certified houses sell for at least a modest premium over similar but less-efficient homes.

But now a new study involving an unusually large sample of 1.6 million homes sold in California between 2007 and early 2012 has documented that, holding all other variables constant, a green certification label on a house adds an average of 9 percent to its selling value. Researchers also found something they dubbed the "Prius effect": Buyers in areas where consumer sentiment in support of conservation is relatively high — as measured by the percentage of hybrid-auto registrations in local Zip codes — are more willing to pay premiums for green-certified houses than buyers in areas where hybrid registrations are lower.

The study found no significant correlations between local utility rates — the varying charges per kilowatt-hour of electricity in different areas — and consumers' willingness to pay premium prices for green-labeled homes. But it did find that in warmer parts of California, especially in the Central Valley, buyers are willing to pay more for the cost savings on energy that come with a green-rated property.

The research was conducted by Matthew E. Kahn, an economics professor at UCLA, and Nils Kok of Maastricht University in the Netherlands, currently a visiting scholar at the University of California at Berkeley. From their study's 1.6 million home transactions, Kahn and Kok identified 4,321 dwellings that sold with Energy Star, LEED or GreenPoint Rated labels. They then ran analyses to determine how much green labeling contributed to the selling price, eliminating all other factors contained in the real estate records: locational effects, school districts, crime rates, time

(81)

period of sale, views and amenities such as swimming pools.

Energy Star is a rating system jointly sponsored by the Department of Energy and the Environmental Protection Agency that is widely used in new home construction. It rewards designs that sharply reduce operational costs in heating, cooling and water use, and that improve indoor air quality. The LEED certification, created by the private nonprofit U.S. Green Building Council, focuses on what it calls "sustainable building and development practices." Though more commonly seen in commercial development, it is also available as a rating for single-family homes. The GreenPoint Rated designation, created by a nonprofit group called Build It Green, is similar to LEED and can be used on newly constructed as well as existing homes.

The 9 percent average price premium for green-rated homes is roughly in line with studies conducted in Europe, where energy-efficiency labeling on news and resale houses is far more commonplace. Houses rated "A" under the European Union's system commanded a 10 percent average premium in one study, while dwellings with poor ratings sold at discount.

Labeling in the United States is a politically sensitive real estate issue. The National Association of Realtors has lobbied Congress and federal agencies to thwart adoption of any form of mandatory labeling of existing houses, arguing that an abrupt move to adopt such a system could have severely negative effects. A loss of value at resale because of labeling would be disastrous, the association has argued, particularly coming out of a housing downturn in which owners across the country have lost trillions of dollars of equity since 2006.

The National Association of Home Builders, on the other hand, has enthusiastically embraced labeling as a selling advantage for new houses. Buyers of such homes today are far more likely than purchasers of resale homes to find them rated as energy-efficient and environmentally friendly.

But there can be an environmental downside to new homes as well: Many are located in subdivisions on the periphery of metropolitan areas, leading to higher fuel expenditures — and more air pollution — because homeowners have longer commutes to work. Kahn and Kok make no secret about where they stand on labeling: More disclosure on the green characteristics of homes makes sense — and a lot of savings on energy consumption — for buyers and sellers.

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(17)

PACE
PROPERTY ASSESSED CLEAN ENERGY

Montgomery County, MD

Transportation, Infrastructure, Energy & Environment Committee

21 March 2013

PACENow

TOPICS

- The Opportunity
- PACE 101
- Commercial PACE
- Summary

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OPPORTUNITY & NEED ARE ENORMOUS

Impact	Residential	Commercial	Institutional	Total
Energy Savings	1,892	848	293	3,033
		Trillion Btu		
Total Investment	182	72	25	279
		$ Billions		
Job Years	2,152,000	857,000	296,000	3,305,000
		Full-time job		
Reduced GhG	382	175	59	616
		Million metric tons of CO_2 per year		

Source: Rockefeller Foundation, 2012. McKinsey, Unlocking Energy Efficiency in the U.S. Economy (2009); Center for American Progress, The Economic Benefits of Investing in Clean Energy (2009); Energy Information Administration Commercial Building Energy Consumption Survey 2003

Note: Analysis is based on an assumption of 30% energy savings in buildings built before 1980.

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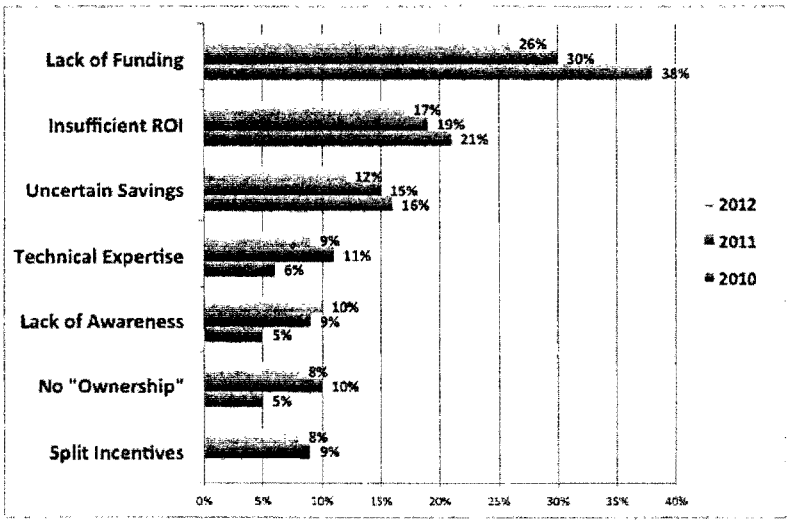
WHAT'S HOLDING US BACK?



Source: Institute for Building Efficiency: JCI/IFMA 2012 Energy Efficiency Indicator

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PACE 101

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OLD CONCEPT

PHILADELPHIA OPT-IN FIRE DISTRICT
7 DECEMBER 1736

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NEW APPLICATION

PROPERTY ASSESSED CLEAN ENERGY

✓Promotes Energy Efficiency

- Public policy EE/RE goals
- Local government nexus

✓Voluntary Financing

- Only projects that make sense
- Only participants paid

✓Repaid with Assessment

- Time tested – proven mechanism

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HOW PACE WORKS

Local government creates PACE benefit district

Building owners choose cost saving projects

Local government arranges financing – adds PACE assessment to property tax roll

Building owner pays PACE assessment with other property taxes

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COMMERCIAL PACE

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WHY PACE?

Barriers to EE Upgrades	PACE Solutions
1. No funds in capital budget	1. 100% external source
2. No lenders	2. Unlimited private capital
3. Poor ROI – Short term funding	3. Positive cash flow – Long term funding
4. Might sell property	4. Transfers to new owner
5. Split incentives	5. Tenants share cost & savings

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WHO & WHAT?

Who Can Use PACE?

- Large or small commercial
- Industrial
- Multi-family housing (5+)
- Agricultural
- Not-for-profits
- Government facilities

What Types of Projects?

- Projects that demonstrate savings
- Permanently affixed
  - ✓ Lighting fixtures & controls
  - ✓ HVAC upgrades
  - ✓ Roofing
  - ✓ Envelope upgrades
  - ✓ Elevator modernization
  - ✓ Solar PV or fuel cells
    - PACE PPA

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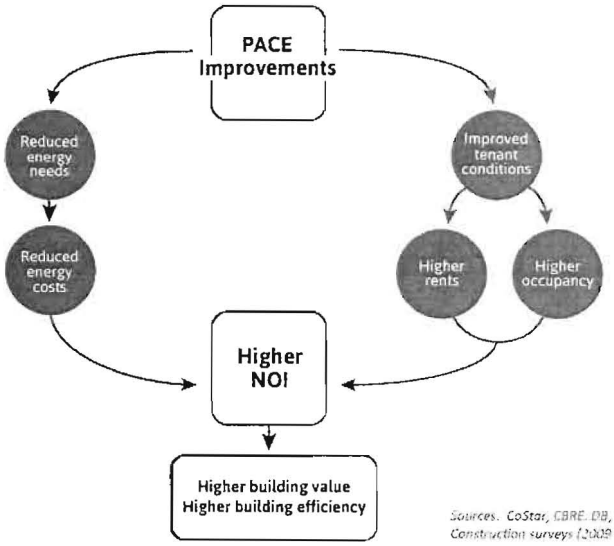
ENERGY EFFICIENCY MAKES SENSE



Sources: CoStar, CBRE, DB, McGraw Hill Construction surveys (2009 – 2012)

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PACE PROJECT EXAMPLE

$1,500,000 add to Building Value (8.9%)

30 Year Old, 200,000 ft² office building in Washington, D.C

2000 Main Street Property	Before PACE	After PACE
Revenue		
Rental Income	2,735,000	2,735,000
Expense Reimbursement (PACE)		50,000
Total Revenue	2,735,000	2,785,000
Expenses		
Property Taxes & Assessments	515,000	515,000
PACE Assessment		50,000
Energy Costs	330,000	225,000
Other Expenses	705,000	705,000
Total Expenses	1,550,000	1,495,000
Net Operating Income (NOI)	1,185,000	1,240,000
Building Value (7% Cap Rate)	16,930,000	18,430,000

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COMMERCIAL PACE PROGRAMS

States with PACE enabling legislation

States with PACE enabling legislation and commercial PACE programs

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SIMON PROPERTY GROUP

Simon used PACE to finance a $463 thousand cool roof project at its Santa Rosa Plaza Mall in Sonoma County, CA

"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 Energy and Procurement at Simon Property Group

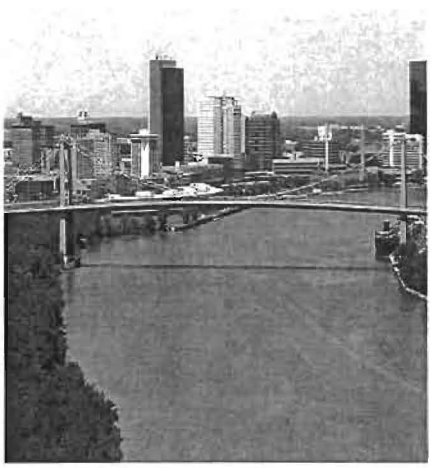
PROLOGIS, INC.

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

TOLEDO – LUCAS COUNTY PORT AUTHORITY



PACE has financed $12 million in energy efficiency upgrades to over 50 buildings in Toledo in just the last 6 months through a program managed by the Port Authority. Project mix includes buildings owned by:

- City of Toledo
- Port Authority
- Private Commercial

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SONOMA MOUNTAIN VILLAGE

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%

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KEY ISSUES: PROGRAM DESIGN & ADMINISTRATION

A Range of Models

1. Government / 3rd Party Administration – hybrid
2. Statewide
   - ✓ Connecticut Model – State Authority
   - ✓ 3rd Party Administered Consortiums
   - ✓ California Model - Hybrid
3. Sole Municipality
   - ✓ Edina (MN) vs San Francisco

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KEY ISSUES: FUNDING PROJECTS

Assessment makes PACE a strong credit

1. Funding sources to date:

•Government reserves (Sonoma)

•Bond issues (Toledo, Ann Arbor)

•Private investment pools (Sonoma, SF)

2. Interest rates thus far - $100 million market:

•4% (w subsidies) to 7% (lack of liquidity)

- ✓ 4.75% 10 year bond in Ann Arbor

3. PACE financing at scale:

•3.5 to 5.5% - AA / AAA rated bonds

•REMIC / CMBS solutions

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KEY ISSUES: EXISTING MORTGAGE LENDERS

Record of support for PACE from CRE lenders

1. Broad view that support is necessary
2. PACENow's Lender Support Study
   - ✓ No blanket opposition to PACE
   - ✓ General lack of familiarity with PACE
   - ✓ Skeptical about projected savings
   - ✓ Familiarity with other assessments creates an existing methodology for review
   - ✓ Willingness to find solutions

SUMMARY

FOR LOCAL GOVERNMENT

A Win, Win, Win, Win, Win Proposition

- Constituents save money – build property value
- Only participants pay assessments
- Creates local jobs
- Safeguards environment
- Can be implemented at very low cost and programs can be self supporting

PACE*NOW*

- Non-profit corporation w 501c3 status
  - ✓ Board members:
    - George Caraghiaur, SVP, Energy at Simon Property Group
    - Cisco DeVries, CEO, Renewable Funding
    - Beau Engman, VP, Johnson Controls
    - David Gabrielson, ED, PACE*Now*
    - Ashok Gupta, Economist, Natural Resources Defense Council
    - Angela Sung Pinsky, VP, Real Estate Board of NY
    - Jigar Shah, former CEO, Carbon War Room
    - Jeff Tannenbaum, President, Fir Tree Partners
- National, impartial, fact based advocate for PACE (and EE)
- Foundation supported
  - Energy Foundation, Rockefeller Brothers Fund, Kresge Foundation, Tilia Fund
- Provide information, resources, networking services and solutions to challenges
- Staff backgrounds in government, municipal finance, corporate lending, public policy