The Aventine, La Jolla, Calif.

PACE financing

A primer for real estate investment management professionals

by Robert Johnson Jr.

Property assessed clean energy, or PACE, is a new financing mechanism that works like a special assessment district bond, but one that benefits only a specific property. Using PACE, cities and counties promote on-site renewable-energy projects, energy-efficiency upgrades and, in some places, water-efficiency upgrades. PACE is rapidly expanding across the United States. PACE financing is a promising, arguably off–balance sheet financing option that deserves a place in the capital stack for building retrofits and for new construction.

PACE bonds can be issued by authorized government agencies (and, in some cases, private finance entities) and can finance up to approximately 15–20 percent of a property's value for renewable-energy, energy-efficiency or water-efficiency upgrades. The financing creates a special assessment lien on the property that is repaid in semi-annual property tax installments over the term.

A common requirement with PACE financing is a project generates utility savings that are measurably greater than the annual PACE assessment. Therefore, PACE allows property owners to redirect money spent on energy and water into building improvements that increase NOI and value.

Why PACE?

PACE can finance deep energy retrofits — defined as delivering a minimum of 30 percent to more than 50 percent reductions in energy — on a positive cash flow basis. Huge value is to be gained from retrofitting existing commercial buildings. The Rocky Mountain Institute's Commercial Building RetroFit Initiative reports retrofitting existing commercial buildings for energy efficiency is one of the greatest opportunities facing the building industry. More than a trillion dollars currently is flowing out of these buildings in the form of wasted energy. At this scale, this represents an investment opportunity of at least $280 billion and potentially $560 billion during the next 10 years (and this is only from effi-

PACE highlights	
100 percent funding Fully fund investments in renewable energy, energy efficiency and water efficiency for all types of property; includes closing costs, fees, energy measurement, audit and benchmarking, project design, and all materials, labor and warranties.	**Simple approvals** Underwriting centers on the property. No corporate financials or personal guarantees required. Improvements must be permanently affixed to a given property and demonstrate accretive benefits to the owner.
Owner keeps all benefits Energy savings, tax incentives and/or rebates remain with the property owner. This is not the case with solar power purchase agreements or some other forms of energy-efficiency financing.	**Fund budgeted, large property repairs** PACE can fund some large capital improvements or repairs and maintenance expenditures, such as a new roof or HVAC system, which removes these items from the capital budget.
Cash flow positive in year one Green building-retrofit projects funded with PACE routinely produce significant cash flow in year one, which is further enhanced by tax incentives and/or rebates. Most PACE programs require or encourage a formal energy audit by a qualified engineering firm as well as measurement, benchmarking and design to ensure the decrease in total utility cost is materially greater than the annual debt service to fully amortize the PACE debt.	**Off balance sheet** PACE payments arguably do not affect the borrowing capacity of the owner, as property tax payments and obligations are not capitalized, and the PACE lien, like other property taxes, does not accelerate upon foreclosure and is not due upon sale (unlike a mortgage or any other term debt). Only the unpaid tax installments form a senior claim on property, not bond principal.
Deep retrofits Owners can invest in deep retrofits (from $200,000 to more than $10 million and up to 15–20 percent of value) to achieve LEED Gold/Platinum EB and Energy Star certification; these retrofits will decrease energy/water costs by 30 percent to more than 70 percent, materially increasing NOI and value.	**Increase NOI and building value** Data from the BOMA *2013 Experience Exchange Report* demonstrates utility expenses run about 25 percent of total operating expenses for the average U.S. office building. Decreasing utilities by 30 percent (or from 25 percent to 19 percent) will yield a 7.5 percent increase in NOI and corresponding value.

ciency investments — before solar or onsite generation). PACE unlocks the floodgate for deep retrofit project adoption in the United States. The financing solves many structural impediments to rapid adoption of renewable-energy, energy-efficiency and water-efficiency property improvements that have persisted until now.

PACE financing is superior to other alternatives. PACE should be compared to equity, not traditional debt. In many situations, such as where a property owner already has mortgage financing at or approaching maximum loan to value, it is exceedingly difficult to secure debt financing to fund any significant green building retrofit project. And if one can secure such financing, PACE will have a lower overall cost because a traditional loan will have a material equity co-investment requirement and a term that rarely exceeds seven years. So, assuming a 30 percent co-investment, 15 percent cost of equity, and a 4 percent, seven-year term loan, this translates into a 7.3 percent weighted average cost of capital, which exceeds the upper range (5.5 percent to 7.0 percent) of PACE coupons. But traditional debt forces the building owner to use investment horizons of at most seven to 10 years, which unfairly punishes major energy-efficiency projects with unrealistically low returns on investments. Most major energy-efficiency retrofits and renewable-energy improvements, such as solar, have estimated useful lives of 15 years to, in some cases, more than 20 years. But when one has a seven- to 10-year investment horizon, one must focus on short-term analyses.

PACE renders ROI and short-term investment horizons for major green retrofits obsolete. And PACE assessment payments are routinely treated as off–balance sheet, which is never the case with a mortgage or other traditional loan. PACE finances 100 percent of project costs; the funding amortizes to term and never accelerates, not even in foreclosure or sale; automatically passes to future building owners; and has terms that match the estimated useful life of the financed property improvements. Because of these features, owners cannot use traditional ROI analysis. Instead, metrics such as cash flow or discounted cash flow analysis are used. As such, investment analyses using PACE really come down to ensuring quality energy engineering and project design, so one incorporates credible estimates of utility savings compared with the increase in property taxes from the PACE assessment lien.

Compared with energy-efficiency financing alternatives, PACE allows the owner to keep all financial benefits (energy savings, tax credits and rebates), requires no corporate financial statement underwriting nor owner guarantees and, unlike a power purchase agreement, or PPA, upon sale a new owner does not have to qualify for the financing.

Think of PACE as an off–balance sheet energy-improvement district for a property owner. PACE changes the capital stack for both retrofit projects and new construction. Building owners can invest in solar or other onsite renewable-energy improvements — on top of energy-efficient retrofits — and fund 100 percent of the cost with PACE.

The history of PACE

PACE was first proposed and created by the City of Berkeley in 2007. Led by Cisco DeVries, then

chief of staff to the mayor, Berkeley established an Energy Efficiency and Renewable Energy Financing District concept. In 2008, California Gov. Arnold Schwarzenegger signed the state's (and nation's) first PACE legislation, Assembly Bill 811. Since then, multiple states have created their own PACE programs.

PACE programs operate like traditional assessment district financing, which usually funds public improvements through compulsory charges via a superior tax lien to all property owners deriving benefit for those improvements. PACE programs preserve the superior priority lien, although they finance improvements to private property made through a consensual arrangement. As a result, before a government entity can establish a PACE program, specific legislation must be adopted enabling governments to finance improvements on private property with the consent of the property owner and to secure that financing with a superior lien on the property.

PACENow reports exponential growth in volume for commercial PACE bond issuance and adoption across the United States. Funded volume has grown from $10 million in 2011 to more than $110 million today — with a pending transactions pipeline of more than $300 million. A total of 31 states have passed PACE-enabling legislation, and 12 states and Washington, D.C., currently have active commercial PACE programs. The list is growing rapidly because of heightened awareness brought on by active support from the U.S. Department of Energy; the Environmental Protection Agency; numerous nonprofit organizations; and real estate–related trade groups such as the Building Owners and Managers Association, ULI and many more.

Why should institutional real estate advisers and investors care about PACE?

This is no small matter; deep building retrofits produce significant increases in value and can be 100 percent financed with PACE.

In 2008, Glenborough LLC, a leader in portfolio-wide sustainability achievements, took an office building built in 1990 and completed major retrofits while the property was 100 percent occupied. The total project cost was $801,500, and net costs were $626,500 after a $175,000 rebate. The retrofits dropped energy use at The Aventine by 63 percent and reduced energy and operating expenses by $116,000 per year (or $0.46 per square foot). This retrofit earned the building a LEED Platinum certification for Existing Building, and the building now has a perfect Energy Star score of 100.

This project was funded entirely with cash, as it preceded PACE availability, but this is an example of how even a core, class A office building can benefit tremendously from a deep retrofit and is a prime candidate for 100 percent PACE financing. Andrew Batinovich, president and CEO of Glenborough, is intrigued by the prospects of employing PACE financing going forward. A simple DCF analysis — using a 20-year term, $116,000 annual savings and 15 percent discount rate and presuming a 6.5 percent PACE coupon — reveals the PACE option would have generated a net present value nearly four times that of the all-equity option.

The new reality is that investors, tenants and regulators increasingly are requiring energy-efficient buildings. PwC reports institutional investors want to better understand environmental, social and governance practices and performance of their real estate investments. The institutional investors most actively engaged in sustainability include a growing mix of U.S. and European pension funds, such as APG Asset Management, the California Public Employees' Retirement System and the California State Teachers' Retirement System.

In response to such growing investor demands, real estate fund managers increasingly are participating in voluntary sustainability-reporting forums, such as the Global Real Estate Sustainability Benchmark and the United Nations' Principles for Responsible Investment, and building-performance initiatives such as the U.S. EPA's Energy Star Portfolio Manager, the U.S. Green Building Council's LEED program, the ULI Greenprint Center for Building Performance, and the U.S. DOE's Better Buildings Challenge.

On the regulatory front, a growing number of state and municipal laws are requiring property owners to disclose and benchmark building energy performance via the EPA's Energy Star Portfolio Manager. This includes California, Washington and Maine, and major cities such as Austin, Boston, Chicago, Minneapolis, New York City, Philadelphia and Washington, D.C. Some of the municipal building ordinances even require full ASHRAE level II energy audits every five or 10 years. Clearly, a regulatory trend is pushing adoption of major energy efficiency.

Finally, a well-regarded study, *The Economics of Green Building,* found Energy Star or LEED-certified buildings command effective rental-rate premiums of 8 percent (net of concessions) and sales-price premiums of 13 percent. Commercial tenants are increasingly demanding, and willing to pay for, green building features.

PACE creates a $200 billion–plus new investment opportunity. According to a 2012 market-sizing study conducted by Deutsche Bank, the U.S. energy-retrofit market comprises an investment opportunity of approximately $280 billion over the next 10 years across the residential, commercial and institutional property markets. The size of the market could more than double — to $560 billion — if a deep-retrofit scenario is considered (defined as energy

savings of more than 50 percent) and includes the buildings built since 1980 that also present significant energy challenges. And this estimate does not include residential- or commercial-building solar installations. The potential for PACE to finance solar installations is best viewed by looking at residential PACE, which began in 2012 in a few California cities. To date, $626 million in residential PACE transactions have been funded, nearly half by Renovate America's Home Energy Renovation Opportunity program in California. PACENow estimates at least 25 percent of this closed volume was directly attributable to solar installations, and others suggest solar has a higher overall share.

With PACE coupons ranging from 5 percent to about 7 percent (unlevered), a senior tax lien position and up to 20-year terms, PACE fits extremely well within a real estate and fixed-income allocation for pension funds, insurance companies and other institutional investors.

Investors are getting in on the action already. Bank of America recently closed a $75 million commitment to purchase bonds issued in a semi-open market structure with Energize NY. Wells Fargo and Co. and Deutsche Bank, among others, have active programs in place to fund PACE bond financings. The top private PACE originators have or are in the process of securing equity investment. Renewable Funding raised $20 million in March 2014, with Apollo Investment Group among five investors; Renovate America raised $50 million in July 2014, with Macquarie Capital Funds and Rockport Capital among four total investors; and Figtree Financing is in the process of raising a $20 million equity round.

Investment strategies using PACE financing

Even a relatively modern, class A, core portfolio can benefit materially from PACE-funded building improvements. PACE allows property owners to look beyond simple seven- to 10-year ROI analysis when making building investment decisions. As such, improvements designed to earn properties LEED Gold or Platinum certifications are now financially feasible with PACE. The following are a few PACE-funded retrofit strategies that can be added into value-add or opportunistic investment themes to materially increase NOI and values.

Use PACE funding to position properties for sale. One could design an entire business plan around acquiring older properties and/or properties with substantial vacancy that need major renovations using PACE financing. Many of a building's largest capital expenditures are components that can be financed with PACE, such as a new SPF or cool roof, HVAC and energy management systems, onsite energy storage, LED lighting, and high-efficiency windows. These and other improvements can produce utility cost decreases in these older buildings from 30 percent to more than 50 percent — before the impact of adding solar, where appropriate.

New construction or major older building renovation. One could use PACE financing to fund all long-term, energy, water-efficiency and renewable-energy components of a new construction project, such as those just mentioned, along with solar panels. This would remove large components from the construction loan. A PACE facility generally can fund up to 20 percent of LTV, making it well-suited to be part of the construction project capital stack to boost overall returns.

Fund solar to generate approximately 50 percent to 100 percent of total electrical demand. Property owners can take advantage of the 30 percent federal investment tax credit, which

How PACE solves green building retrofit adoption obstacles

Barriers	Solutions
Lack of funds Mortgages limited to LTV restrictions; SBA funds also limited and require guarantees, etc.	**100 percent external funding** PACE allows owners to do it right; includes cost of energy engineering, benchmarking and program design to achieve LEED Gold/Platinum EB or Energy Star certifications.
No lenders Long-term financing does not exist other than equity.	**Unlimited private capital** PACE open-market structures allow a new asset class to form around senior lien notes yielding 5.5 percent to 7.0 percent.
Poor ROI Existing debt financing, if available, has a maximum term of seven years; this unfairly punishes energy-efficient projects in ROI calculations.	**Positive cash flow for up to 20-year term** Many deep retrofit and renewable-energy projects have useful lives of 20 years or more. PACE appropriately allows better matching of liability to asset life, creating positive cash flow.
Owner might sell property Why invest in renewable energy or energy efficiency if the owner doesn't retain property?	**PACE lien transfers to new owner** The PACE lien follows the building, not the owner.
Split incentives Why make improvements if tenants benefit from energy savings and owner can't pass through the cost?	**Tenants share cost and savings** PACE assessment payments are repaid via property taxes, which automatically pass through, even on strict NNN leases.

drops to 10 percent beginning January 2017. PACE is an extremely compelling financing solution for onsite solar generation. Any properties that have fairly large roof areas relative to total building size are prime candidates for a robust solar photovoltaic array. These include flex/R&D, industrial, retail, and some suburban office and multifamily properties. According to Rob Lamkin, CEO of Cool Earth Solar, buildings with 10,000 square feet or roof area or larger are prime candidates. Optimally, any PACE-funded retrofit should incorporate a solar photovoltaic system, where appropriate, which can be downsized according to the gains from energy-efficiency improvements.

The end result: higher rents, less turnover, and higher NOI and valuations

For any strategy, property owners can use the generally required energy engineering to help them achieve LEED Gold/Platinum or similar certification, thus positioning the buildings to achieve higher rents and experience less turnover relative to competing properties that are not similarly retrofitted. They also position the building to attract a more institutional-grade buyer, as many fund managers are now following sustainability initiatives that require such heightened building performance.

PACE generally can fund all conceivable energy/water-efficiency and renewable-energy building improvements, including HVAC, controls, building envelope, hot water, solar power, water conservation, lighting and even measures not typically associated with energy efficiency such as windows (digital glass), roof (SPF and cool roof), and insulated roll-up doors in industrial facilities. All these building systems directly affect the quality of the building environment. Generally, all non–publicly owned commercial, industrial or multifamily properties that can receive a property tax bill are eligible.

Though PACE programs vary slightly by region, the property owner must be the legal owner of record, current on property taxes and mortgage debt within the past three years, must not be insolvent or have filed for bankruptcy within the past 10 years, and any mortgage lender must either consent to or acknowledge the PACE lien. ❖

Robert Johnson Jr. is president of **Johnson Independent Advisors** and a managing director with **PACE Equity.**

PACE models in practice

Across the United States, PACE program design and administration vary widely. All programs involve a public-private partnership. The level of private-entity participation can range from being solely a source that purchases issued bonds to marketing, originating, underwriting, and issuing and purchasing the bonds, with the government entity solely responsible for administering the PACE property tax assessment. PACE programs generally are hybrids of the following basic program models:

Public program, government administration: In this model, governmental agencies fulfill essentially all functions. Key functions include: qualifying projects, underwriting, providing warehouse funds, bond issuance (funding), recording PACE assessment liens, servicing PACE bond assessment payments, verifying lender consent and program marketing. California's Sonoma County Energy Independence Program is an example of a mostly public program.

Public program, contractor administration: In this model, governmental agencies provide capabilities such as servicing PACE bond assessment payments and bond issuance (funding), but retain third-party firms to share other responsibilities. Connecticut's C-PACE, Los Angeles' LA PACE, New York's Energize NY and San Francisco's GreenFinanceSF are programs that use third-party experts to perform various functions.

These programs tend to be open-market platforms in that they allow private investors to purchase bond issues or even to fund large warehouse lines. Many also allow a property owner to select its own private capital source up front to fund a specific project. There is an increasing trend toward scaling down the public program role for these programs to drive down associated fees. Texas, Wisconsin and Missouri have programs featuring a more streamlined public platform role.

Private program, private administration: This model has minimal government involvement. A private company establishes program guidelines in consultation with a public entity partner, which typically includes a statewide bonding authority sponsor. In this setup, the entire PACE program is designed, marketed, administered and funded by the private company as a turnkey solution for all participating cities and counties that join the program. These private-party platforms conform to the same general PACE program guidelines employed nationwide, with some exceptions. While most PACE programs specifically require an energy audit or third-party appraisal, for instance, Figtree Financing (based in San Diego) does not have these requirements.

Private PACE program administrators manage essentially all functions, including: enrolling municipalities, who need to "opt-in" to the private party platform, supporting and training contractors, marketing to building owners and contractors, underwriting, securing necessary mortgage lender consent or authorization, securing private warehouse capital, funding projects, and securitizing pools of originated bonds.

Figtree Financing, CaliforniaFirst and Ygrene are private-sector firms that run essentially turnkey financing programs. Figtree retains its own financing source and is a closed-market platform. CaliforniaFirst is rolling out its own financing source but is also an open-market platform. Additionally, PACE Equity functions as a private project developer, bundling energy engineering, project management and financing.

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