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Financing Retrofits in Large Commercial Buildings through PACE Loans



Implications for Building Owners

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The following memorandum describes an emerging development in the area of energy efficiency in large commercial buildings. It specifically involves the application of municipally-enforced property assessments for the purpose of financing energy efficiency in privately-owned commercial properties, principally office buildings, hotels and retail space. Using this type of financing for the purpose of funding energy efficiency retrofits is in the early stage of development. Referred to as “tax lien financing”, or property-assessed clean energy (“PACE”) financing, it is being reviewed for potential implementation in a variety of large property taxing jurisdictions across the country. The purpose of this memorandum is to describe the nature of these programs and the benefits they promise to create in the context of their impact on both owners and mortgagees.

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Introduction

Across the country, owners of large commercial property are interested in making their buildings more energy efficient. They understand the financial benefits of energy efficiency improvements - lower operating costs, increased cash flow, potentially higher occupancy and increased valuation, etc. However, these owners are faced with making a large up-front investment and realizing the returns through energy savings over time. Owners seeking to finance these investments are often unable to because commercial investment properties generally:

- Are owned by unrated, limited liability “shell” entities
- Are fully pledged under a mortgage and potentially mezzanine investment
- Disallow 3rd party liens on real property improvements (e.g. new chiller)
- Subordinate 3rd party interests to existing lienholders

The combined effect of these impediments leave prospective retrofit lenders with little to no security in projects they would otherwise like to finance and owners unable to secure financing. We further believe that “tax lien financing”, also known as property-assessed clean energy or “**PACE**” financing, the use of municipally-enforced special assessments to amortize project costs over time, would quickly overcome these barriers and catalyze a robust market for energy efficiency investment in the large commercial building space. It could also provide municipalities with a scalable financing program for achieving their energy efficiency goals while creating jobs, stimulating commercial lending and generating additional tax revenue.

The Impact of Energy Efficiency in Large Buildings in NYC

In NYC, large buildings (defined by PlaNYC as buildings greater than 50,000 gross square feet) account for roughly \$6.75 billion per year in energy costs and 36% of the city’s GHG footprint. In a typical large commercial building, an energy services company would be able to reduce overall energy consumption by approximately 25% on average. Assuming financing was available to these building owners, we ask the following question - what would be the citywide impact if half of NYC’s large buildings were to undertake energy efficiency retrofits? The city could:

- save almost \$850 million per year in energy costs¹
- create 113,000 direct, indirect and induced jobs²
- reduce citywide GHG emissions by 5.6%³; and
- generate almost \$5.7 billion in capital investment opportunity⁴

Notes:

¹ Assumes that half of NYC’s large buildings reduce their energy consumption by 25%.

² Based on a 20-to-1 multiplier per \$1mm of EE investment, using the Regional Input-Output modeling system (RIMS) from the Bureau of Economic Analysis, a bureau of the U.S. Dept. of Commerce.

³ Per PlaNYC, a reduction in energy costs by \$750 million leads to a reduction in citywide GHG emissions by 5%. Given projected annual energy savings of ~\$850 million, we assume a 5.63% reduction in GHG emissions.

⁴ Represents \$850 million in annual energy savings, applied as a payment under a financing term of 10 years, discounted at 8%.

As the projected benefits of a tax lien program in NYC illustrate, municipalities and counties across the country stand to benefit greatly from such a program. There are currently a number

of large cities actively considering the implementation of PACE financing for the purpose of facilitating energy efficiency retrofits in the commercial building sector. As these programs are adopted, we will see a growing number of owners seeking to improve the energy efficiency of their buildings through the use of PACE financing. The market potential is enormous. We estimate the opportunity in financing energy efficiency retrofits in large commercial properties to be between \$88 and \$113 billion¹.

Adoption of PACE financing for the purpose of retrofitting large commercial buildings is completely dependent upon the owner's ability to secure consent from the mortgagee. By and large, mortgage agreements for commercial investment property include covenants prohibiting owner's from further encumbering themselves or the building, unless the mortgagee consents. While a properly levied assessment would create a valid tax lien against the property, it would also place the owner in default under the mortgage since the owner would have willfully initiated the lien process, unless of course the mortgagee provided consent. Under a consent request, the mortgagee would be asked to permit the placement of a senior lien on the property and thus be subordinated to the rights of the beneficiary of the tax lien, presumably a commercial lender which financed the retrofit. While mortgagees are understandably resistant to any diminution in their position as the senior secured creditor to the property, we would argue that PACE financing:

- represents the most promising means of securing retrofit financing² on a mortgaged property;
- would facilitate a comprehensive energy retrofit which would create value well in excess of the amount of the lien; and
- would create a lien that is i) de minimus to the overall value of the property and ii) foreclosable only in extreme circumstances.

The purpose of this memo is to present a PACE financing structure for large commercial buildings³ that maximizes and assures value creation for the owner without materially diluting the interests or security of the existing mortgagee. By presenting the combined and synergistic potential of energy efficiency and PACE financing in its proper context, we hope both owners and mortgagees will be better equipped to evaluate, and favorably disposed to approve, its use on their properties.

¹ There are roughly 81,000 commercial buildings greater than 100,000 square feet in the U.S., according to the Energy Information Agency. Based on an average building size of 261,000 square feet, an average cost of utilities per square foot of \$2.50, and projected savings potential of 25%, we estimate that most projects will range between \$1.09M and \$1.41M per building.

² Other financing structures that have been attempted are on-bill utility financing, managed utility service contracts, traditional leases, and synthetic security arrangements.

³ Defined herein as buildings larger than 100,000 square feet.

The Benefits of Energy Efficiency in Commercial Property

Beyond the obvious contribution to greenhouse gas (GHG) emissions reduction and environmental stewardship, we believe that with a set of prudent and strictly-applied best practices, as described herein, energy efficiency retrofits can increase the owner's net cash flow as well as improve the property's appeal to both existing and prospective tenants. Otherwise said, properly-performed energy efficiency projects represent a sound investment for the owner and would create a better performing financial asset for the mortgagee.

Net Increase in Cash Flow and Additional Benefits

While many of the anticipated benefits of energy efficiency are subject to conjecture and based on either anecdotal experience or general market observations, increase in net cash flow is not. By employing best practices, including the use of performance contracting, guaranteed savings and an investment-grade energy services contractor, the owner can arrange to retain a substantial portion (e.g., 10-25%) of the resulting savings over time. For example, a property owner with an annual energy expense of \$2M may be able to reduce overall energy costs by 25%, or \$500,000 annually. If this owner were to utilize 80% of these savings (\$400,000) to amortize the cost of the project and retain the remaining 20%, there would be a **net increase in cash flow** of \$100,000 annually (20% of \$500,000). Therefore, by performing an energy retrofit on this basis, the owner would enjoy the following immediate benefits:

- \$3M-\$3.5M in newly-installed building systems installed at no cost⁴
- \$100,000 in increased cash flow per year
- 25% reduction in overall energy consumption
- ENERGY STAR label and improved marketability of the property⁵
- Increased reliability in terms of maintaining tenant comfort⁶
- Healthier environment for tenants and employees
- Enhanced sufficiency of existing maintenance reserve funds

These benefits, on their own, suggest that prudently-performed energy efficiency retrofits represent good business practice for the owner. While the amount and level of benefit will vary by property and by project, many are highly predictable and can be assured through proper contracting. ***It should be noted that these benefits are attainable without upfront cost, with ongoing payments fully offset by guaranteed savings, and with the principal risks of performance and contractor credit shifted to third parties.***⁷ In addition to these relatively predictable benefits, the owner will have better positioned the property to attract and retain sustainability-minded tenants. While there is certainly anecdotal evidence to support this connection, there have also been several recent empirical studies that have compared the

⁴ Assumes the owner applies \$400,000 in an annual payment under a 15-year energy efficiency contract.

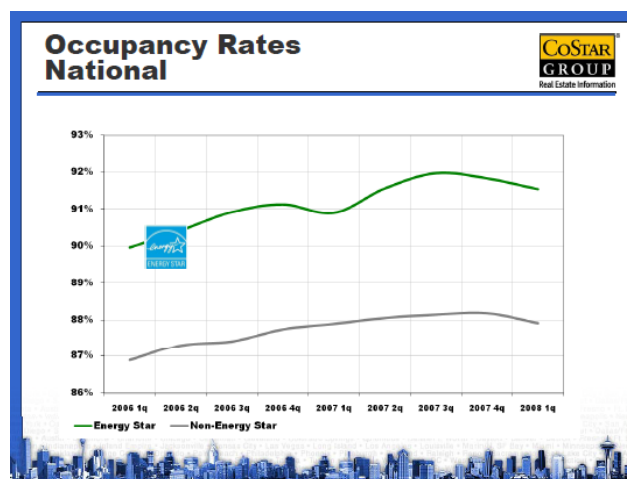
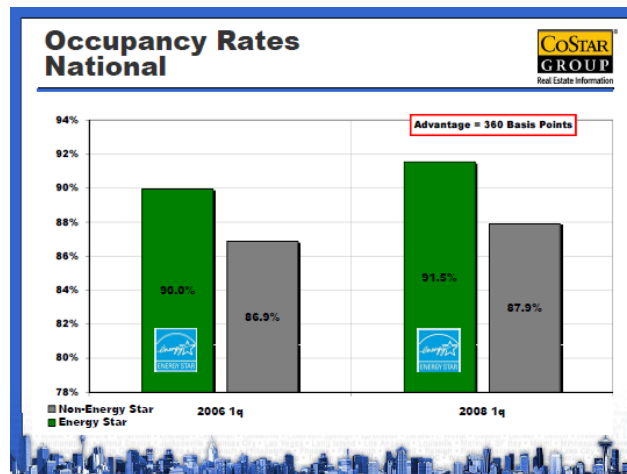
⁵ ENERGY STAR is a designation provided by the EPA for buildings that score in the top quartile of similar buildings with respect to relative energy intensity.

⁶ A recent study titled "Green Buildings and Productivity" (August 2009), co-authored by the Burnham-Moores Center for Real Estate at the University of San Diego and CB Richard Ellis, focused on the healthier environment and increased productivity stemming from improved energy efficiency.

⁷ This is described in more detail on pp. 13-14 of this memorandum.

occupancy rates of ENERGY STAR-labeled buildings to those without a label over time. Each of these early studies, which are independent of one another, strongly suggest that energy efficient buildings generally enjoy **higher occupancy rates** of roughly 3.5%, on average.

ENERGY STAR & Higher Occupancy Rates



National average comparison of occupancy rates of ENERGY STAR-labeled buildings vs. non-labeled buildings over a two-year period. Source: Co-Star Group.

The ENERGY STAR label represents the best currently-available proxy for relative efficiency in existing buildings⁸ and the most visible and conspicuous marketing tool for the owner. The implication of these results is obvious. If true, the higher occupancy represents increased operating income for the owner. In fact, the increases in operating income from higher

⁸ ENERGY STAR measures building energy intensity and uses data from the EIA's Commercial Building Energy Consumption Survey database and attempts to segment comparable buildings into peer groups, normalizing for location, cost of power, weather, size, etc. Based on a total range of 0-100, buildings which score a 50 are average for their peer group. Buildings that score 75 or above, i.e. top quartile, earn an ENERGY STAR label for that year.

occupancy are potentially much greater than the retained savings. Following the example from above, a building with a \$2M annual utility bill would be roughly 800,000 square feet, assuming an average of \$2.50 in utility expense per square foot. In such a building, a 3.5% increase in occupancy would generate roughly \$1.152M per year in additional revenue, assuming a rent rate of \$41.15⁹. Assuming a gross operating margin of 70%, the \$1.152M increase would generate \$806,000 in additional operating income per year.

While these empirical studies suggest a correlation between an ENERGY STAR label and higher occupancy, it must be acknowledged that there are a variety of other factors that may explain these results. No owner should base the decision to retrofit a property strictly on the assumption that occupancy will increase. That said, and as major leasing agents and property managers will attest, it is certainly true that building energy efficiency is increasingly a major criterion in the lease evaluation of prospective tenants, particularly large corporate and institutional clients. For example, the General Services Administration, the single largest lessee of commercial office space in the nation, has been mandated under the *Energy Independence Act of 2007* to lease space only in ENERGY STAR-labeled buildings beginning in 2010¹⁰.

While the experience of a single owner or results of a single study may be speculative, it's not hard to appreciate the general trend and market forces that are driving the national averages reported by Co-Star and others¹¹. Similar results have been reported in studies recently published by Maastricht University¹², the University of Arizona and Indiana University¹³, the Henley Business School, UK¹⁴ and the University of California¹⁵. Otherwise said, the rationale behind their assertions is easy to qualify. The desire of tenants, all things being equal, to occupy energy efficient space is real and growing. Owners may choose to ignore these emerging trends in tenant preference, or view it as a form of market risk to be mitigated and/or behavior to be exploited.

Prior to ENERGY STAR, the relative energy efficiency of a building was somewhat opaque to the prospective tenant, perhaps only surmised by comparing projected expense calculations for utilities. However, one can imagine the impact on prospective absorption of a downtown Class A property that chooses to not upgrade, only to see its neighboring peer properties become ENERGY STAR labeled, and perhaps LEED-EB certified¹⁶. With occupancy rates in decline and lessees negotiating from an increasing position of strength, it would certainly place the building at a disadvantage. From this perspective, securing an ENERGY STAR rating may be viewed as a form of **market risk mitigation**. This would be particularly applicable in a locale that mandates building labeling and disclosure. For example, in Washington, D.C., the *Clean and Affordable Energy Act of 2008* mandates that all commercial buildings larger than 50,000 square feet must calculate their ENERGY STAR efficiency "score" using EPA's online software

⁹ Average rental rate in mid-year 2009 for downtown, Class A office space, according to Colliers International.

¹⁰ PL 110-140, Section 435

¹¹ Similar results were recently reported in a study titled "Doing Well by Doing Good: Green Office Buildings", published by the Center for the Study of Energy Markets at the University of California Energy Institute (August 2009).

¹² Kok, Nils, Maastricht University, PRI Workshop, January 2009

¹³ *Investment Returns from Responsible Property Investments: Energy Efficient, Transit-Oriented and Urban Regeneration Office Properties*, Professor Gary Pivo, University of Arizona & Professor Jeffrey Fischer, Indiana University, October 2008

¹⁴ Franz Fuerst and Patrick McAllister, "Green Noise or Green Value? Measuring the Price Effects of Environmental Certification in Commercial Buildings," School of Real Estate and Planning, Henley Business School, University of Reading, UK.

¹⁵ "Doing Well by Doing Good: Green Office Buildings", published by the Center for the Study of Energy Markets at the University of California Energy Institute (August 2009).

¹⁶ Leadership in Energy & Environmental Design (LEED) for Existing Buildings

“Portfolio Manager”) and make the score publically available upon request¹⁷. The bill is designed to create transparency in the commercial building sector, empowering buyers, lessees and renters to make informed decisions based on a property’s relative energy efficiency.

In such a market, if the Class A property mentioned above has an ENERGY STAR efficiency score of 30 (out of a possible 100) and its neighboring peer group, which have recently retrofitted, average in the 80s, it would clearly place the property at a competitive disadvantage with respect to sustainability-minded tenants – particularly as these scores are made publically available. Mandated labeling and disclosure is a form of market risk that property owners in Washington, D.C. and New York City will soon be facing as the mandate takes effect over the next couple of years. There are a number of other large cities, including San Francisco and Los Angeles, which are currently attempting or considering the adoption of similar mandates.

Increase in Estimated Property Value

Because properly executed energy efficiency retrofits increase cash flow and therefore projected NOI, it may impact the estimated value of the property. All things being equal, increased NOI divided by the capitalization rate (cap rate) suggests an ***increase in estimated property value***. While a seller may not realize the estimated property value on a dollar-for-dollar basis, at the very least it would improve the property’s financial pro forma and potentially impact the sales price.

Energy Savings, Cash Flow and Valuation

Whereas there is a direct and obvious linkage between energy savings and improved cash flow, the linkage between energy savings and potential increases in estimated property value can only be inferred from the standard capitalization (cap) rate formula, where cap rate equals annual net operating income (NOI) divided by property value – e.g. $10\% = 100,000 / 1,000,000$. Algebraically, rearranging terms suggests that property value equals annual NOI divided by the cap rate – e.g., $1,000,000 = 100,000 / 10\%$. In this scheme, direct increases to the NOI numerator should also create the potential for an increase in estimated property value, all things being equal. However, owners may use a variety of methods for determining property value. Whichever method is used, it is clear that any potential increases in property value stemming from energy efficiency retrofits will likely not be based on the upfront cost of the equipment, but rather the net impact on cash flow resulting ***from actual and enduring energy savings over time***.

It is also clear that the ability of a retrofit project to reliably increase a building’s cash flow will be the key to improving the financial position of the owner and creating value for the mortgagee. Substantive increases in estimated property value and prospective sale price stemming from energy efficiency, while possible, is still speculative and largely dependent upon the owner’s ability to increase occupancy by attracting environmentally-minded tenants. That said, it is certainly true that the owner would not have that opportunity if not for the energy efficiency retrofit.

¹⁷ DC Law 17-492, Section 501 (b)

In the example above, it's not unreasonable to assume that the owner may in fact realize some increase in occupancy, in addition to the \$100,000 in increased cash flow from retained savings. While increasing property value is as yet uncertain, we can estimate the potential impact of increased cash flow from retained savings and various increases in occupancy. In this analysis, we continue to use the example of the 800,000 square foot building which leases space at blended average of \$41.15 and has a 70% gross operating margin.

Projected Increase in Net Operating Income

Increase in Occupancy (%)	Increase in Occupancy (sf)	Increase in Op Income (\$) ¹⁸	Retained Savings (\$)	Increase in NOI (\$)
1.0%	8,000	230,440	100,000	330,440
2.0%	16,000	460,880	100,000	560,880
3.0%	24,000	691,320	100,000	791,320
4.0%	32,000	921,760	100,000	1,021,760

Chart depicts the estimated annual increase in projected NOI based on step increases in occupancy combined with the retained savings benefit of the efficiency retrofit.

The chart below shows the estimated increase in projected NOI as occupancy increases in increments of 1%, up to 4%. Combined with the \$100,000 in retained savings, this provides a reasonable range of potential increases in projected NOI resulting from an energy efficiency retrofit.

How might this range -- \$330k to \$1.021M -- impact a property appraisal? One analytical approach might involve dividing the range of increases by a series of cap rates, thereby creating a table of possible interpretations. For example, one might assume a 2.0% increase in occupancy (roughly half the national average of 3.5%) and a relatively high cap rate of 9.0%, and project an increase in perceived value of **\$6.2 million** (see below).

¹⁸ Increase in operating income from increased occupancy estimated as 800,000 x 1.0% x \$41.15 x 70%.

Property Valuation Table

Increase in Occupancy	Increase in NOI	Capitalization Rate				
		7.0%	8.0%	9.0%	10.0%	11.0%
1.0%	330,440	4,720,571	4,130,500	3,671,556	3,304,400	3,004,000
2.0%	560,880	8,012,571	7,011,000	6,232,000	5,608,800	5,098,909
3.0%	791,320	11,304,571	9,891,500	8,792,444	7,913,200	7,193,818
4.0%	1,021,760	14,596,571	12,772,000	11,352,889	10,217,600	9,288,727

Chart illustrates potential increases in estimated property value based on the range of prospective increases in NOI and a range of cap rates.

While these estimated increases may be a fraction of the overall property value, less than 5%¹⁹, they are more properly compared to their implementation or marginal cost to the owner. These are net (after cost) contributions to the property value. The increases in NOI illustrated above are derived from guaranteed savings retention, after deducting the cost of the energy efficiency retrofit, and additional lease revenues. They represent pure upside potential and largely stem from positioning the property as an energy efficient and environmentally-friendly space -- benefits that would otherwise be unavailable to the owner.

The most significant motives for retrofitting are energy cost reduction, client demand and a desire to create a superior product, according to a 2008 McGraw-Hill study.

Energy Efficiency Credits (EECs)

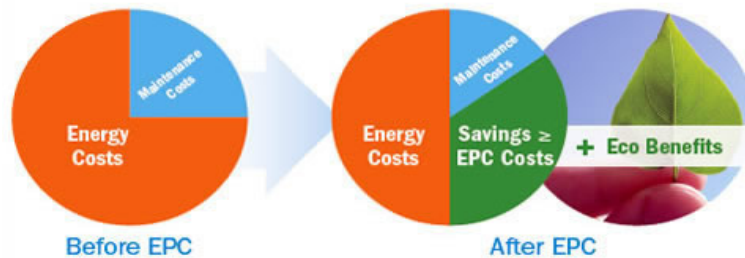
Most industry experts believe that the US will adopt some form of carbon regime (e.g., cap and trade) in the near future. Under such a system, owners of commercial real estate that retrofit their space and can validate lasting reductions in energy consumption will accrue credits. One credit is equal to the demonstrable offset of one ton of CO₂²⁰. Currently, the market for offsets in the U.S., as measured by the trading **value of energy efficiency credits (EECs)**, is voluntary. As such, trading volumes are relatively light and the values are fairly low – roughly \$2.00 per ton of CO₂. In the European Union, which operates under a mandatory system which

¹⁹ Assuming the cap rate valuation model is applied to an 800,000sf building that is 85% occupied and rents at an average of \$41.15, these estimated increases in value range from 1.7% to 5.2% of the overall property value.

²⁰ According to the EIA, large commercial buildings consume an average of 79.8 kBtUs psf, or 79.8 mBTUs per 1,000 sf. 1.0 mBTU creates roughly 0.1 tons of CO₂, assuming principally coal-based electricity. Therefore, large buildings generate 7.98 tons of CO₂ per 1,000 sf, or 6,384 tons of CO₂ per year for an 800,000 sf building. Each avoided ton would equal one credit.

has had about three years to mature, trading volumes are much higher and values have stabilized in the \$20-\$25 range per ton.

Overview of a typical EPC project



In the case of an energy efficiency retrofit of a building, the value of the EECs would be impacted by the predictability and assurance of the emissions reductions. In this regard, performance contracts would be a very good tool since they incorporate guaranteed and verified savings over time. And since the owner of the building would own the credits, the monetized value of the EECs would be paid to the owner, creating an additional source of revenue stemming from the retrofit. While the value of the EECs are unlikely to motivate an individual building owner, those with multiple buildings or portfolios (e.g., REITs) may realize substantial gains, subject obviously to the market value of the credits. In the example above, an 800,000 square foot building may produce a saleable credit worth roughly \$267,000²¹, under the following assumptions:

- US is operating under a mandatory carbon regime
- Trading values reflect \$25.00 per ton of CO₂
- Owner is able to reduce energy consumption by 25%
- Owner is able to monetize future year's offsets

Since the credits are based on offsetting carbon emissions, buildings in coal-reliant regions of the country would generate more credits than those in areas that rely on cleaner fuels, e.g. natural gas, hydro, nuclear, etc.. Again, this would be pure upside potential for the owner. For large institutional owners of commercial real estate, retrofitting on a portfolio-wide basis under a mature carbon regime could generate substantial additional gains. An owner of a portfolio of large properties might anticipate the following:

²¹ Assumes building energy consumption is reduced by 25%, therefore offsetting 1,596 tons of CO₂ (25% x 6,384) with each ton worth \$25 per year. The total value is estimated as the present value of these credits.

Portfolio Value of Energy Efficiency Credits

No of Buildings	1	10	25	50	100	250
Estimate Value	267,000	2,677,000	6,693,000	13,386,000	26,773,000	66,993,000

Chart illustrates the estimated potential monetized value of energy efficiency credits in connection with property portfolios of various sizes.

In summary, our hypothetical owner of the 800,000 square foot commercial office building, by virtue of having retrofitted the property, stands to benefit in the following principal ways:

- \$3M-\$3.5M in newly-installed building systems at no upfront cost
- Contract payments fully offset by guaranteed savings
- 25% reduction in building energy consumption
- \$100,000 in increased cash flow per year
- ENERGY STAR label and plaque for the property
- More reliable property in terms of maintaining tenant comfort
- Healthier environment for tenants and employees
- Enhanced sufficiency of existing maintenance reserve funds
- Potentially higher occupancy rate
- Potential increase in estimated property value
- Potential sale value of energy efficiency credits

Energy Savings Performance Contracting (“ESPC”)

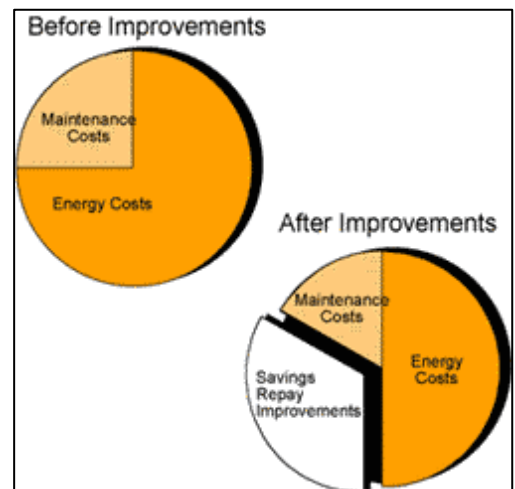
We believe that most owners, by and large, will engage a reputable, investment-grade energy service company (“ESCO”) to perform the efficiency retrofit. This will provide assurance that the project will be completed on time, within budget and the retrofits will perform properly over time. Having an investment-grade entity bear the performance obligations will also permit the owner to shift those risks while still raising competitive financing for the project. ESCOs generally utilize a form of agreement known as an energy savings performance contract (“ESPC”). This section discusses the key features and benefits of ESPCs, the principal attribute of which is its ability to secure financing while shifting various risks from the owner to the ESCO.

WHAT IS ENERGY SAVINGS PERFORMANCE CONTRACTING?

Here’s how it works:

The building owner enters into an agreement with an ESCO, who identifies and evaluates energy-saving opportunities and then recommends a package of improvements that “self-amortize” via the resulting savings. The ESCO guarantees that savings will meet or exceed annual payments to cover all project costs over the contract term - usually 7 to 15 years – subject to certain stipulations. To ensure savings are generated, the ESCO provides long-term operations and preventive maintenance services. To validate savings, the ESCO performs a regular measurement & verification process consistent with accepted industry standards. If savings don’t materialize, the owner is immediately reimbursed the shortfall amount by the ESCO.

In short, the owner pays nothing upfront, and is repaid immediately for any savings shortfalls that may occur. Many types of building technologies can be funded by harvesting budgeted savings in this manner — lighting, boilers and chillers, energy management controls, solar-thermal systems, HVAC renovations, etc.



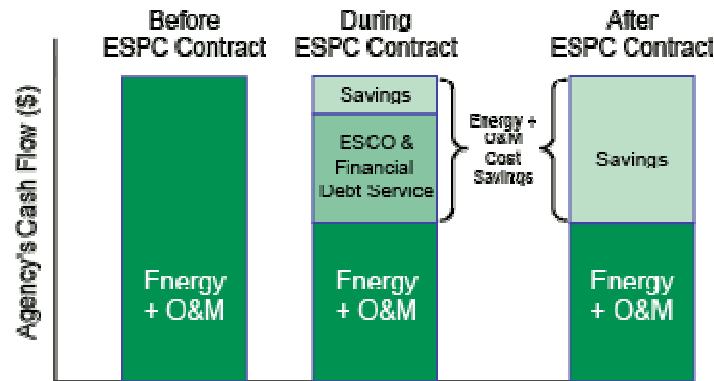
The first key aspect of ESPCs is that the resulting guaranteed savings fully amortize the cost of the project and, in fact, may actually increase overall net cash flow to the owner. Under an ESPC, the ESCO guarantees the technical performance of the retrofits such that the resulting savings fully amortize the upfront cost of the project, as well as cover ongoing operations and maintenance (O&M) and measurement and verification²² (M&V) costs. While the ESCO guarantees performance of the specific retrofits, the parties stipulate certain variables that are out of the ESCO’s control, principally cost of energy and baseline hours of operation²³. In a typical commercial building, an experienced ESCO would be able to reduce overall energy costs by roughly 25%, on average, thus substantially improving the operating cash flow of the property. In such a case, the owner and ESCO may utilize 20% to amortize the cost of the

²² Process whereby the ESCO periodically, typically annually, measures actual reductions in energy consumption and compares them to the contract’s projected savings. In the event actual savings are less than projected, there is a shortfall.

²³ Increases in either the cost of energy or occupancy would cause the retrofits to generate greater savings relative to the existing baseline. Since the ESCO receives a fixed payment amount, these excess savings would be retained by the owner.

project, thereby permitting the owner to retain 5% in the form of increased cash flow from operations.

Cash Flow Implications of an ESPC Contract



The second key aspect of ESPCs is that the upfront cost is borne by a commercial lender, and repayment is supported by the performance guarantee of the ESCO. There is an existing multi-billion dollar market in ESPC financing under programs managed by the US federal government, states and municipalities, public school systems and universities. These public-sector programs are dominated by large, investment-grade ESCOs, since they are best able to guarantee performance and secure attractive financing terms. None of these programs have the same barriers to raising retrofit financing as the commercial sector (e.g., unrated ownership, mortgage encumbrance, holding period horizon, etc.) and are therefore able to secure upfront funding for their ESPC projects. In fact, if not for their ability to secure financing and shift risk (described below), very few retrofit projects would be undertaken at the public-sector or institutional level. It is precisely their ability to raise attractive financing, and shift performance risk, under ESPCs that leads public agencies to embrace energy efficiency retrofitting. We believe the same will be true in the commercial building sector under tax lien financing; that the ability to raise financing and shift risk will be a key enabler for building owners.

The third key aspect of ESPCs is the transfer of risk by owner, specifically performance risk to the ESCO. Under an ESPC, once the project is complete, the owner is immediately made whole to the extent its payment to the lender is not fully offset by measured and verified savings. Industry experts acknowledge that a critical aspect to the long-term efficacy of energy efficiency projects is proper O&M over time, which some property owners are not well-suited to perform. Therefore, an important element of the performance contracting model is the provision of long-term O&M services, as well as M&V. This continuing role enables the ESCO to guarantee the provision of savings over time. The contractual mechanism that enforces the guarantee and affects the transfer of energy performance risk from the owner to the ESCO is the obligation of the ESCO to immediately reimburse the owner – dollar for dollar -- the amount of any shortfall in validated savings. This mechanism ensures that the owner never pays more than validated savings, since the any shortfall amount will be made up by the ESCO.

ESPCs are designed to ensure that energy efficiency projects cost the owner nothing upfront, and create enduring value in a manner that places the performance risk on the ESCO. They

also efficiently capture both the energy retrofit work and financing in a single bundled contract²⁴. The following best practices derive from the industry's experience in the public and institutional sectors:

- All projects must be fully paid from savings. That is, the investments must be self-amortizing over the contract term.
- Savings must be guaranteed by the ESCO, who bears the risk that the M&V process reveals savings shortfalls, not the owner. Owners will have a fixed payment obligation to the lender and will be reimbursed directly by the ESCO in the event of a shortfall in savings. Therefore, owners should require that these savings guarantees are meaningful and supported by investment-grade contractors.
- Savings must be measured and verified on a routine basis, at least annually, with the contractor covering any dollar savings shortfall per the terms of the performance contract. The M&V protocol should be consistent with the International Performance Measurement and Verification Protocol, "IPMVP", or similar accepted process²⁵.
- The engineering team representing the owner should make sure they fully understand the M&V calculations and protocol. Among the key considerations are that retrofit performance risk is properly placed with the ESCO, and any excess savings from increased cost of power or gross building demand are fully captured by owner.
- The maximum amount of the project approved under the program should be capped at 5.0% of the value of the property, unless in unusual circumstances.²⁶ Capping the amount of the retrofit, in combination with limiting its application to energy efficiency equipment that pays for itself through guaranteed savings, may provide comfort to existing creditors.
- In order to immediately improve free cash flow, owners structure financings so that 10%-25% of guaranteed annual energy savings are retained as increased cash flow.
- Projects should be undertaken by credible and experienced energy service contractors. The National Association of Energy Service Companies ("NAESCO") manages an accreditation program for the nation's leading providers of such services. Owners should be encouraged to engage a NAESCO accredited firm from this list. The current list of companies and a description of the accreditation process is available at www.naesco.org/accreditation.
- Owners seeking to implement a project should facilitate the contracting process by using an industry-vetted form of ESPC. The Building Owners and Managers Association ("BOMA") has developed a model contract (the "BOMA Energy Performance Contracting Model") with the participation of leading commercial property owners, ESCOs and

²⁴ We believe the most efficient form of contract involves the owner, ESCO and lender in a single, three-party agreement.

²⁵ Most ESPC programs at the federal, state, local and institution levels have adopted protocols based on IPMVP.

²⁶ This is not a feature of the existing ESPC market, but a recommendation specifically for the large commercial market.

finance firms. This model contract is available on the BOMA website (www.boma.org/resources/bepec) and may be readily modified to suit specific projects.

While we believe that most owners may be best served by using an ESPC, it is certainly not required. Owners with sufficient internal engineering resources and experience may choose to self-perform many of the ESCO's traditional responsibilities, or simply choose to use a traditional installation contract without the performance provisions. The obvious difference would be the lack of guaranteed savings, and a resulting fixed, "hell-or-high-water" payment obligation between the owner and lender that is not subject to offset for unrealized savings. Under this arrangement, the owner would lose the assurance of guaranteed savings and the continued involvement of a dedicated service provider. While PACE financing can accommodate virtually any form of installation contract, we believe the guaranteed savings model provides the most value and comfort to both owners and mortgagees.

PACE Financing in Large Commercial Properties

Wide-scale adoption of energy efficiency projects in commercial real estate through PACE financing would clearly be beneficial for the local municipality. As the NYC illustration suggests, cities would potentially realize thousands of new jobs²⁷, stimulate commercial lending in local infrastructure, increase tax revenues back to the city, and dramatically reduce GHG emissions – all without encumbering their budget or credit. From a public policy perspective, it could possibly be the best legislative vehicle possible to address climate protection at the municipal level. And as a completely voluntary program, it could be highly impactful without being coercive. Given the initial enthusiasm of early adopters (e.g., San Francisco, CA, Palm Desert, CA, Boulder, CO, Babylon, NY, etc.²⁸) and the list of large cities currently pondering adoption, including New York, Washington, D.C. and Los Angeles, it's fair to assume that this mechanism will be increasingly available to owners in following years.

In addition to being beneficial to the city, performing a comprehensive energy retrofit would be beneficial to individual owners of large commercial buildings. As discussed above, the benefits of retrofitting, both assured and projected, appear overwhelming in relation to the upfront cost, particularly if the retrofit is performed under an ESPC. It makes tremendous sense as a purely capital budgeting exercise, and exceptional sense when considering the future marketability of the property and its ability to attract and retain a growing population of tenants who are sustainability-minded. And to the point above regarding trends in public policy, it not hard to imagine that most cities will, at some point, mandate some level of building labeling and disclosure, thereby creating competitive pressure to address building efficiency.

For investors with extensive real estate holdings, energy efficient buildings can provide a buffer against financial losses in a contracting economy and create competitive advantage.

-- Ceres

Behind these emerging trends and market pressures, the discussion is increasingly coalescing around PACE financing because it represents the best known solution to the inability of commercial building owners to raise third-party financing for energy retrofits. Generally speaking, the benefits of PACE financing would be as follows:

- Provides lenders with sufficient repayment security through the priority of the tax lien on the property—not the credit of the ownership entity.

²⁷ Energy efficiency is estimated to generate 5 direct, 5 indirect and 10 induced jobs for every \$1M in project cost. Source: Clinton Climate Initiative

²⁸ Additional jurisdictions include Sonoma County, CA, Berkeley, CA, and Annapolis, MD.

- Removes the “*first cost*” barrier by empowering owners to arrange financing by leveraging the property through the municipal tax system.
- Removes the “*holding period*”²⁹ bias against longer term projects since owners with a shorter hold have a means of passing along the unamortized balance to future owners. The assessment stays with the property, not the owner.
- Minimizes the “*split incentive*”³⁰ barrier of non-occupying owners who utilize net lease agreements, since property taxes and assessments generally qualify as “pass-through” expenses, subject to certain conditions.
- Leverages capital markets for financing energy efficiency investment in commercial real estate in a way that is both sustainable and scalable.
- Complements municipal public policy goals around building energy efficiency by giving individual owners a mechanism through which to finance their retrofits.
- Stimulate economic activity and create jobs.
- Requires no direct use of city funds³¹.
- Requires no explicit extension of city credit or guarantees.

As property taxing jurisdictions, cities and counties are in a unique position to overcome the existing market barriers to energy efficiency investment in commercial real estate. By allowing owners to use their properties as security for financing via the tax lien process, owners will be newly empowered to engage commercial lenders for the purpose of financing retrofit projects.

We believe there is acute awareness on the part of owners of the potential benefits of energy efficiency and growing risks of maintaining the status quo. We further believe there is growing interest on the part of these owners to consider retrofitting their properties, given the right contractual vehicle and funding program. For example, the owner of the Empire State Building recently announced their plan for a comprehensive retrofit program under an ESPC with Johnson Controls. While the Empire State Building is able to secure financing on the basis of its historic and prominent status as a national landmark, most buildings cannot. The energy efficiency program undertaken by the Empire State Building’s owner is precisely the type of activity that PACE financing seeks to enable.

²⁹ Reflects the tendency of buildings owners to limit capital improvement investments to payback periods within their assumed holding period. In energy efficiency, this suggests only quick payback projects may be approved.

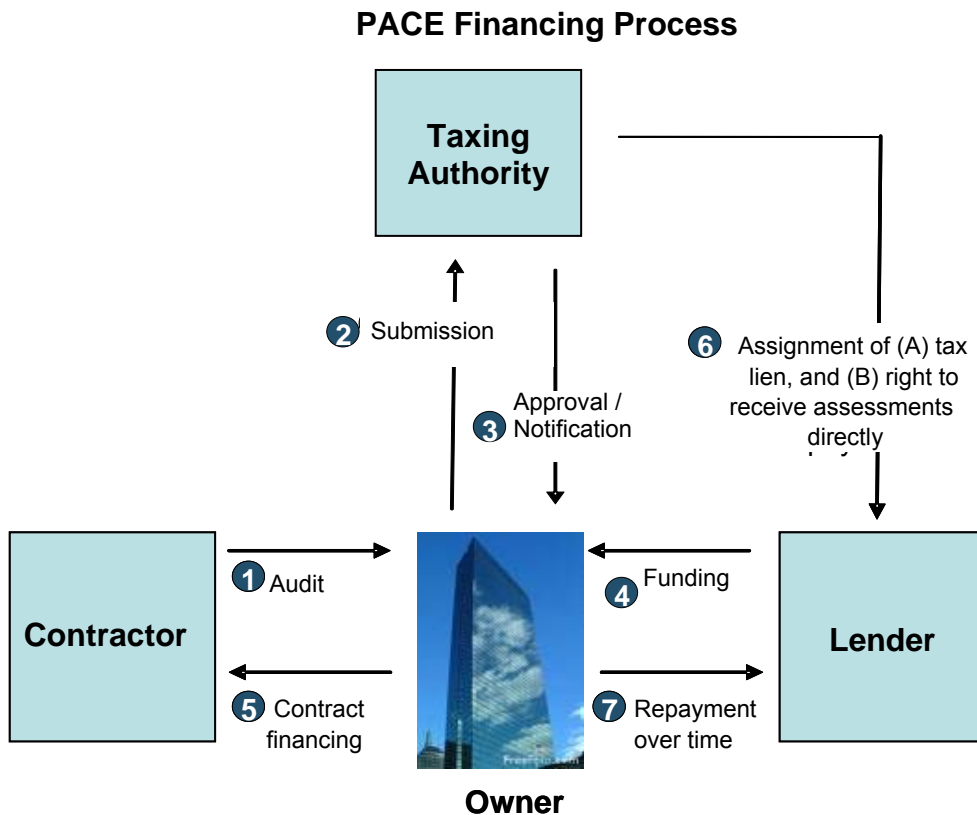
³⁰ Reflects the disincentive of non-occupying owners to bear the cost of the retrofits only to pass through the savings benefits to tenants. Under a tax lien model, owners would not bear the costs, but pass them through as property assessments.

³¹ While the City would not directly fund the projects, it would bear the costs of establishing and administering the program. However, these costs may be fully recoverable by the City as a project surcharge.

How a PACE Financing Program Could Work

The City Council authorizes its Department of Finance (or equivalent) to issue a special assessment on commercial building owners who voluntarily apply and qualify for the energy efficiency tax lien program. Qualification standards would be established by the city administration, or designated third-party, and be designed to facilitate the financing of energy efficiency retrofits that meet certain basic criteria. Assessments would be levied following the completion of an energy efficiency retrofit and, by statute, create a tax lien in the amount of any outstanding and unpaid assessment. The taxing authority would record and levy assessments over a multiyear period equal to the term of, and in the exact amounts required under, the retrofit contract (e.g., ESPC or other form of agreement).

Owners would undertake a process in accordance with the following steps:



- 1) Owner engages a qualified contractor to perform building energy audit and develop a paid-from-savings retrofit plan.
- 2) Owner submits retrofit plan to City for approval. Owners who wish to self-finance, or cannot secure lien-holder consent, will not utilize the tax lien program.
- 3) City approves the retrofit plan and notifies owner. The taxing authority is also notified and prepares to record assessments against the property, subject to project completion.
- 4) Owner uses notification of the tax lien to compete and arrange financing from commercial lenders on advantageous terms.
- 5) Owner provides project financing to contractor, typically as construction milestone payments, as work progresses
- 6) City assigns its 1) right to receive assessments directly to lender, and 2) rights as the lien-holder in the event of a default by the owner.
- 7) Upon completion and as savings are generated, owner remits assessments to lender. The assessments amortize the loan over time.

For example, if the City approved a \$2.0 million project that required \$300,000 per year to amortize and cover service costs over 10 years, the taxing authority would record a special assessment in the amount of \$300,000 per year against that property. Since property assessments are generally semi-annual, the owner would receive assessments twice a year in the amount of \$150,000. Each year, the current owner of the property would be obligated to pay these assessments to the City. While the cost of the project is \$2.0 million, which amortizes ratably over the 10-year period in accordance with an agreement between the owner, ESCO and a commercial lender, the amount of the actual tax lien on the property at any given time is limited to the outstanding and unpaid assessment, or \$150,000.

While existing creditors may be subordinated to the tax lien, the foreclosable amount of the lien is limited to a single assessment and is only foreclosable under an extended³² and uncured payment default. For example, if property assessments are due on July 1, and the City records the owner's payment on July 5, the mortgagee will have suffered no "foreclosable lien" on the property. Technically speaking, while there is a lien recorded by the City for the timely collection of future assessments, it is virtually meaningless unless the owner a) defaults on its property tax obligation and b) permits the default to remain uncured for an extended period, typically at least 12 months. Only in this extreme case does the lien become foreclosable by the lender, and even then the recoverable amount under the lien is limited to the delinquent amount.

In order to make sure these projects truly address GHG emissions reductions, the City will need assurance that the energy savings are realistically derived and will endure. In order to qualify for the assessment, the City may require that the energy savings are 1) measured and verified, and 2) guaranteed by an experienced, reputable and creditworthy energy services contractor. Requiring guaranteed savings will assure the City that prudent engineering and conservative calculations are rendered up-front, that the buildings will actually reduce GHG emissions, and that owners will continue to derive value over time. Owners planning to retrofit their buildings would notify the City and submit certain information, including project summary, list of measures, project cost, guaranteed savings by year, project amortization schedule, measurement and verification (M&V) plan, energy services contractor, and the proposed lender.

The City would also verify that the owner is current on all property taxes and assessments. Upon approving the project, the Department of Finance would record the amounts required under the retrofit contract in the tax system. These amounts would be reflected as a line item in the property tax assessment for the building. By statute, unpaid assessments are automatically secured by a senior tax lien on the property in favor of the City. At any given time, the amount of the tax lien would equal the unpaid assessment for the current period, not the entire project balance. If permissible, the taxing authority may assign both the lien and the right to receive the assessments to the lender of record. As the assignee and beneficiary, the lender would stand in the shoes of the City with respect to all rights and remedies under the tax lien. The lender would also abide the same statutory requirements for foreclosure, including the mandated grace period³³.

³² By statute, property liens may not be foreclosed on unless there is a delinquency that has remained uncured for a stated period of time – typically at least 12-months.

³³ Typically 12-months or greater.

Prior to commencing construction, owners will notify the City of their intent to retrofit their building and submit the proper information. Acknowledgement by the City that the retrofit, as proposed, qualifies for an assessment will empower the owner to compete and negotiate the finance transaction with various commercial lenders. Whereas owners were previously unable to secure energy efficiency financing at any price, now owners will be able to offer lenders the following investment opportunity:

- Payment obligation in the form of special assessments levied by the City
- Payment obligation secured by super-priority tax lien on property
- Payment obligation which stays with property, not owner, until fully paid
- Assignment of assessments and right to receive payments directly from owner
- Tax certificate issued by City citing lender as the beneficiary of the tax lien
- Guaranteed savings contract with a qualified energy services contractor

These elements create a compelling security package for potential lenders. Owners will be able to vigorously compete multiple lenders for advantageous terms and pricing for such projects. The larger point being that PACE financing will be the key enabler to the wide-scale development of this market.

Guidelines to Program Implementation

The principal concern regarding the implementation of a PACE financing program is that voluntary participation by individual owners will violate the covenants in their existing mortgages against further encumbrance of the property. Taken alone, this would obviously preclude their participation, regardless of the benefits (e.g., increased cash flow, potential increase in property value, improved tenant retention, etc.) of the proposed retrofit. Owners will therefore need to secure consent from the first mortgagee and other lienholders (e.g. mezzanine investors) prior to engaging in a retrofit.

With lienholder consent and approval by the City, the assessment would qualify as a property tax under the municipal tax code and thereby create an enforceable tax lien that is senior to all existing lienholders. This super-priority lien creates the basis for securing attractive financing terms for the retrofit project. Clearly, the challenge to the industry is in structuring the retrofit project in such a manner that existing lienholders agree to provide their consent to the tax lien.

First and foremost, PACE financing would be an option to owners only after they have secured consent from their existing lienholders. Lienholders who reject the insertion of the super-priority lien, but embrace energy efficiency, would have the option of providing the owner with retrofit funding directly. Owners who can self-fund their projects, internally or from existing lienholders, would clearly have no need for PACE financing. Despite the merits of energy efficiency, most lienholders will clearly react poorly to the notion of a super-priority tax lien, unless they can be assured that the

- I. **Impact of the lien can be minimized, and**
- II. **The Project will create value in excess of the encumbrance**

With this in mind, we recommend that performance contracting and its associated best practices be applied to the development and financing of projects, ensuring that value is created for both the owner and mortgagee. Chief among these best practices is that long-term creation and preservation of value is best ensured through a program of guaranteed savings, subject to routine measurement and verification and backed by an investment-grade contractor. Energy savings performance contracting is a vehicle that includes all of these features.

I. Minimizing the Impact of the Lien

Described below is a payment arrangement that seeks to balance the lender's need for security and the mortgagee's need to maintain its preferred position and claim on the property, in a manner that minimizes or even avoids the creation of a "foreclosable lien"³⁴. Generally speaking, property assessments under a tax lien finance model would reflect the following characteristics:

- Assessments are issued semi-annually by the City.
- Assessments would not commence until the retrofit is complete.

³⁴ Notwithstanding the lender's position as priority lienholder, it has no ability to foreclose until the mandated grace period has elapsed. By statute, property liens may not be foreclosed on unless there is a delinquency that has remained uncured for a stated period of time. In many jurisdictions, this time period is 12-months.

- If permissible, the City may assign the right to receive payment to the lender. If assigned, the assessment would identify the assignee (lender of record).
- Under an assignment, the owner pays the lender directly and the lender applies these payments against the amortizing project loan. Lender then notifies the City that the assessment has been fully paid.
- Enrollment in the program will automatically, by operation of law, create a tax lien against the property. At any given time, however, the total foreclosable amount (and recoverable by the lender) under the lien is the delinquent obligation to the City, not the value of future assessments. While future assessments have been recorded by the City and will be secured under the lien, the obligor of those payments will be the future owner(s) of the property. Unlike a commercial debt facility against the property, the owner will never face an acceleration and foreclosure for the balance. The City, or its assignee under the lien, will never enforce collection for more than the delinquent balance.
- The City, or its assignee, may not move to foreclose on the lien unless the delinquency has remained uncured for a stated period of time, typically 12-months.

So, if the mortgagee provides consent, it would suffer subordination to the tax lien for the period of time the assessment is outstanding -- from the due date of the assessment to the date payment is received and recorded by the City. Therefore, by minimizing or even avoiding an outstanding assessment, we minimize the impact of the tax lien on the mortgagee -- no outstanding assessment, no foreclosable lien.

With this in mind, we would propose that the lender's payments are structured so that they are due prior to, and not coincident with, the City's assessments, which are typically due and payable on a fixed semi-annually cycle (e.g., Jan 1 - Jul 1, or Apr 1 - Oct 1, etc.). This would allow ample time for 1) the owner to remit payment to the lender³⁵; 2) the lender to notify the City that payment has been received, and 3) the City to record the receipt of payment. What would this accomplish? On "tax day" (e.g., Jan 1), having had recorded that the assessment has already been received, the City would issue a tax receipt to the owner -- rather than an assessment to be paid -- thus avoiding an outstanding assessment altogether. For example, a ninety (90) day payment lag would provide for the issuance of two (2) late payment notices to be sent by the lender, each at thirty (30) day intervals. Late payment notices would be copied to other related parties, including the property manager, loan servicer (if appropriate), mortgagee and other creditors behind the first mortgagee. We would argue that with ninety (90) days and two (2) late payment notices, the likelihood of an outstanding assessment should be negligible.

Under this arrangement, so long as the owner remits timely payment, no outstanding assessment is ever created against the property and the mortgagee suffers no true subordination to a foreclosable tax lien. From the lender's position however, the same security essentially exists in the transaction. In the event that payment is not made and remains uncured for ninety (90) days, the assessment is outstanding and secured by the tax lien. If the assessment remains delinquent for more than 12-months, the lien becomes foreclosable.

³⁵ Assumes the city can assign the right to receive payments to a third-party.

This also assumes that the ESCO performs M&V of the energy savings on a semi-annual basis, and just prior to the lender’s payment dates³⁶. This provides the owner with assurance that the payment being made has been offset, in whole or in part, by energy cost reductions. In the event of a shortfall, the ESCO is obligated to immediately remit the amount of the shortfall to the owner. This allows the owner to make a whole payment to the lender, comprised of 100% verified savings, or a combination of verified savings and a direct payment from the ESCO³⁷.

The Payment Process



In this illustration, so long as the City receives timely notice from the lender that the assessment has been paid, it issues a tax receipt to the owner – rather than a property assessment to be paid. Therefore, by remitting timely payment, the owner has the ability avoid the creation of a foreclosable tax lien. In the event of a delinquency, the mortgagee or any other creditor can the step-in and remit payment.

In summary, this proposed arrangement would enable retrofit financing in commercial buildings, leveraging both the value of the property and the taxing authority of the City for the benefit of the lender, in a manner that may never create a foreclosable lien against the property. In fact, under this arrangement, creation of such a lien is an extremely remote possibility, requiring that a) the owner defaults on its payment obligation notwithstanding validated savings fully offsetting the amount, and b) existing creditors of the building, including the mortgagee, ignore late payment notices and permit the assessment to remain delinquent for over 12-months. Notwithstanding that a foreclosable tax lien may never be created, the fact that this structure

³⁶ Frequency of the M&V process is up to the owner, but should be no less than annual.

³⁷ This underscores the importance of selecting an investment-grade ESCO under an ESPC.

will automatically create one in the event of an extended and uncured delinquency, will provide security to the commercial lender, thereby facilitating financing for the retrofit.

II. Value Creation in Excess of the Encumbrance

We believe that with a set of prudent and strictly-applied best practices, energy retrofits can reliably enhance the value of mortgage loan portfolios, notwithstanding the possibility of a senior tax lien. Our contention is that not only does the retrofit pay for itself, but the size of the actual lien is de minimus to both the value of the property and the upside potential created by the retrofit. For the purposes of illustration, we have assumed the owner of a large 800k square foot commercial property performs the following energy efficiency project:

Illustrative Project Profile

Square feet	800,000
Utility cost (psf) ³⁸	\$2.50
Utility cost per yr	\$2,000,000
<u>Gross Guaranteed Savings (%)</u>	<u>25%</u>
Gross Guaranteed Savings (\$)	\$500,000
<u>Savings Applied to Project (%)</u>	<u>20%</u>
Savings Applied to Project (\$)	\$400,000
<u>Savings Retained by Owner (%)</u>	<u>5%</u>
Savings Retained by Owner (\$)	\$100,000
<u>Project Parameters:</u>	
Cost ³⁹	\$3,321,695
Term (yrs)	15
Annual Payment ⁴⁰	\$400,000
Rate	8.50%

Assuming baseline energy consumption of \$2 million and guaranteed savings of 25%, this project would generate \$500,000 annually in gross cash flow through the reduction of utility expenses. In this example, we assume the owner engages an ESCO to perform a \$3.3 million project under an ESPC and applies 80% of the savings, or \$400,000 per year, to amortize the project cost over 15 years. The owner retains the remaining 20% of the savings, or \$100,000, in savings, thereby improving net cash flow. Under the guaranteed savings mechanism in the ESPC, the ESCO would be obligated to reimburse the owner any shortfall in measured and verified savings. For example, if only \$450,000 in savings were verified in a given year, the owner would remit \$400,000 in payment to the lender, retain \$50,000, and receive \$50,000 directly from the ESCO. Under this arrangement, the value of the guarantee is directly related to the credit-worthiness of the ESCO. As described in this memo, the owner would owe semi-

³⁸ Estimated composite average for large cities.

³⁹ Reflects a project where the owner pays \$400,000 annually over 15-years at 8.50%.

⁴⁰ May actually be paid in semi-annual payments of \$200,000.

annual property assessments to the City -- each in the amount of \$200,000. Therefore, under the ESPC, the ESCO would be verifying \$250,000 in semi-annual savings.

While normally the City would be the beneficiary of the lien, via the tax lien program the City will assign its rights to the lender who provided the ESPC financing. Under an assignment, the lender would stand in the shoes of the City with respect to all rights and interest in any property tax lien resulting from an uncured delinquency. If the delinquency extends beyond a certain period (typically 12-months, but variable by jurisdiction), the lender may foreclose on the lien as a first priority, senior secured creditor to the property. However unlikely this may seem, the property could be forced into a tax sale by the order of a court of competent jurisdiction, in which case the amount of the delinquent assessment(s) (\$200,000 each) would be considered an expense of the sale. To be clear, there would be no acceleration of future payments. The lender's remedies would be limited to the collection of delinquent payments only. In this context, failing to cure the default for over a year and permitting the property to be forced into a tax sale would only make rational sense if the delinquent assessment(s) exceeded the value of the property.

This powerful collateral position and collection mechanism is precisely what stakeholders of the energy efficiency industry are hoping opens up a robust market in commercial retrofit financing - a market that is currently closed for lack of such a mechanism. But it only works to the extent existing mortgagees provide their consent. The **costs** are very straightforward, principally the possible subordination to the lender (of a minor amount for a brief period of time) and an additional payment requirement placed on the owner (which is completely offset by guaranteed cost avoidance) – in both cases by the amount of the outstanding assessment. The **benefits** are both greater and more complicated, as discussed herein, but principally include –

- Updated building systems at no upfront cost,
- Guaranteed savings from which to pay the assessments,
- Increased net cash flow,
- ENERGY STAR label,
- More reliably-maintained tenant environment and comfort,
- Improved adequacy of existing reserves,
- Compliance with local environmental mandates,
- Upside potential of increased occupancy,
- Potentially increased property valuation, and
- Monetization of energy efficiency credits.

The previous section, “*Benefits of Energy Efficiency in Commercial Property*”, discussed these benefits and provided some estimates of their potential value, scaled for an 800,000 square foot building. Where appropriate, we tried to convey a range of estimates covering a variety of scenarios, e.g., step increases in occupancy, various cap rate environments, impact on large portfolios, etc. While the estimates and their assumptions can be modified to reflect a specific project or market, the larger point of the analysis is that building energy efficiency creates upside potential for owner⁴¹ that would otherwise not be available. In certain cases, the gains could be quite large. While the sources of this upside potential vary, the largest potential stems

⁴¹ Upside potential that not only makes intuitive sense and confirmed anecdotally, but has been empirically observed by Co-Star and others.

from the building's repositioning as a high-performance, energy efficient property and the possibility of increased occupancy.

In our illustrative case, while the project would lead to an increase in net cash flow of \$100,000 per year, an increase in occupancy equal to the national average of 3.5% for ENERGY STAR buildings would increase net operating income by \$806,000⁴² and estimated property value by over \$10 million⁴³. Energy efficiency projects, at a minimum, pay for themselves and generally improve building operations while helping the environment. They represent sound capital improvement decisions on these modest grounds alone. At the same time, they also create the potential for outsized returns and value creation for both the owner and mortgagee.

In order to assess the impact on the mortgagee, we have attempted to consider the obvious costs of the project in contrast with the various benefits. It may also be helpful to consider certain risk factors that have been recently raised in the context of residential PACE financing. Recently, the Federal Housing Finance Agency (FHFA), which regulates Fannie Mae, Freddie Mac and the 12 Federal Home Loan Banks, highlighted certain areas of concern in a letter specifically directed at the emerging PACE financing programs in the residential sector⁴⁴. Cited as "unintended consequences", the concerns are expressed from the perspective of the mortgage provider and generally reflect unease regarding subordination of the mortgagee and additional burden placed on the owner, particularly in an environment of declining asset values.

The principal areas of concern are as follows:

- I. Diminution of the Mortgagee's Position**
- II. Further Encumbrance of the Owner**
- III. Impairment of the Marketability of the Asset**

Each of these concerns is readily addressable. In fact, through the adoption of best practices, the exact opposite of these conditions will be created. Otherwise said, the exact opposite of these concerns represent premeditated intended consequences of the tax lien program. That is, the mortgagee's position may be enhanced, the owner's ability to service its liabilities will be increased, and the asset will be more marketable. In this respect, each of these concerns represents a certain misunderstanding of the value proposition represented by the nexus between energy efficiency and PACE financing.

I. Concern #1 -- Diminution of the Mortgagee's Position

While it's certainly true that a tax lien could be created and encumber the property ahead of the first mortgage, we would argue that this would have little real impact on the mortgagee's true position, for the following reasons:

⁴² Assumes an additional 3.5% of an 800,000sf building rented at an average of \$41.15, times 70%.

⁴³ \$10,075,000, assuming a cap rate of 8.0%. Occupancy gain only. Does not include the \$100k savings retention.

⁴⁴ Letter dated June 18, 2009 from James B. Lockhart III, FHFA Director, to the Conference of State Bank Supervisors, American Association of Residential Mortgage Regulators, National Conference of State Legislatures, National Association of Credit Union Supervisors, and the National Governors Association.

- If timely payment is received by the lender, there will be several months for the lender to notify the City and for the City to record receipt. As discussed above⁴⁵, if there is no outstanding and unpaid assessment, there is no delinquency and therefore no foreclosable tax lien is created.
- Lender will send late payment notices to the owner, property manager, first mortgagee and other lienholders if the assessment remains unpaid. Any party can cure this payment.
- Given this arrangement, there is ample opportunity for responsible parties to avoid a delinquency and subsequent diminution of the mortgagee's position.
- The mortgagee would never suffer an acceleration of the energy efficiency payments.
- The lien conveys no rights whatsoever in a proposed sale of the property.

In the unlikely event that payment is not made to the lender and an assessment is delinquent, the amount of the lien would be the unpaid assessment – or \$200,000 in our illustrative case. On an 800,000 square foot building with 85% occupancy, the amount of the lien would be less than 1/10th of 1.0% of the estimated value of the property⁴⁶. Further, by local statute, this lien amount would not be foreclosable until the delinquency remained uncured for a period of time, typically 12-months.

We would contend that the resulting “diminution of the mortgagee's position” is immaterial and has no true impact on the overall security of the first mortgagee or other creditors in the building's capital stack. The lender cannot force an acceleration of its payments, so the remaining balance of the retrofit loan is not a consideration for the mortgagee – future payments are the responsibility of future owners and future mortgagees. Even in the event of a sale of the property, the lender's facility remains in place and the new owners are obligated to accept future assessments⁴⁷. Even assuming no increase in occupancy attributable to the property's newly energy efficient status, the retrofit is still self-amortizing and generating \$100,000 annually in retained savings. We would therefore argue that the mortgagee's position has not been diminished in any material sense, quite the opposite.

That said, given the recent empirical studies that have independently concluded a roughly 3.5% occupancy advantage by ENERGY STAR-rated buildings, and the increasing nature of this trend in tenant behavior, it is not unreasonable to assume some level of increased occupancy, e.g., 1%-2%. If the experience of our illustrative building is half the national average, or 1.75%⁴⁸, it would generate roughly \$400,000 in additional operating income per year. All things being equal, the cap valuation formula would suggest that this increase creates the possibility or opportunity to assert that the property has risen in value by an estimated \$6.3 million. As these calculations are somewhat linear, an increase in occupancy in line with the national

⁴⁵ On p. 23 of this memorandum.

⁴⁶ Assumes 85% occupancy of an 800,000sf building which rents at an average of \$41.15, and a 70% operating margin, generating \$27.9M per year in operating income. Divided by an 8.0% cap rate suggests an estimated property value of \$244M. \$200,000 represents 0.817% of this estimate.

⁴⁷ In anticipation of a change in ownership, the ESPC will be fully assignable to future owners. Further, the lender will have no right to review or approve of new owners.

⁴⁸ Illustrative building and occupancy increases are detailed in pp. 6-10 of this memorandum

average of 3.5% would suggest additional perceived value of roughly \$12.6 million – or roughly 5.0% of the estimated property value⁴⁹.

In sum, in exchange for negligible diminishment in the mortgagee’s position, there appears to be tremendous upside potential in the repositioning of the property as a high performance asset. Not only is there no appreciable diminution of the mortgagee’s position, there is a reasonable likelihood of an enhanced position and additional security through an increase in property value.

II. Concern #2 -- Further Encumbrance of the Owner

While it is true that PACE financing would create a new assessment to be paid by the owner, the project would generate guaranteed savings that are equal to or greater in value than the assessment. Further, the guaranteed savings mechanism in performance contracting provides for the owner to be reimbursed the amount of any unrealized savings – theoretically up to \$500,000 per year in our example. In this regard, there should be no impact on an owner’s existing debt service coverage. Further, we advise that owners utilize only a portion (e.g., 80%-90%) of the guaranteed savings for financing, thereby creating excess cash flow. In this manner, the project actually generates additional cash flow.

To be clear, notwithstanding the fact that the current owner initiates the energy efficiency retrofit and executes an ESPC with an ESCO and lender, future payment obligations are borne by the future owner(s) of the property – whoever that may be. The lender will have no right or ability to accelerate the loan in the event of a payment default by the current owner, or any right to review or approve new owners. Therefore, to the extent that the “owner is further encumbered” by the PACE financing, the amount of the encumbrance is a) only in accordance with measured and verified savings, and b) always fully offset by guaranteed savings. In this regard, we would argue that there is no true additional encumbrance on the owner.

Additionally, many property owners are suffering from a decrease in property values in the current environment. Those with commercial mortgages soon due for renewal are in danger of not being able to refinance. Any activity that increases cash flow and estimated property value, therefore, would be valuable to these owners. As stated above, if the experience of our illustrative building is half the national average, or 1.75% increase in occupancy, it would generate roughly \$400,000 in additional operating income per year. Combined with the retained savings of \$100,000, this suggests additional cash flow of \$500,000 to the owner.

Gross Guaranteed Savings / yr	\$500,000
<u>- Assessment / yr</u>	<u>\$400,000</u>
Retained Savings:	\$100,000
<u>+Income from Increased Occupancy⁵⁰:</u>	<u>\$400,000</u>
Increase in Cash Flow / yr	\$500,000

⁴⁹ \$12.6M divided by \$244M equals 5.15%

⁵⁰ Assumes 1.75% increase in occupancy.

In sum, there is no true encumbrance of the owner that would diminish its ability to service debt. On the contrary, it is reasonable to assume that cash flow coverage would actually improve following the energy efficiency retrofit.

III. Concern #3 – Impairment of the Marketability of the Asset

FHFA's concerns regarding marketability focused on energy efficiency and roof-top solar applications on residential homes financed via PACE financing over long periods of time. In the currently stagnant commercial building market, the best index for marketability is probably relative occupancy. In this regard, it seems clear that more energy efficient buildings are better able to attract and retain tenants. Not only does this make intuitive sense, it's borne out empirically. While people can argue with the methodology or statistical rigor with which Co-Star and others came to their conclusions regarding relative occupancy levels of ENERGY STAR buildings, it seems fairly clear that tenants are increasingly inclined to occupy energy efficient space, all things being equal. As building labeling and disclosure mandates are enacted in major cities across the country, it will create increasing levels of transparency and enhance the marketability of energy efficient buildings even more. Stated bluntly, energy efficiency enhances the marketability of commercial properties, not impairs it.

Further, a newly retrofitted building will have a reduced risk profile in terms of 1) its ability to maintain a comfortable, healthier environment for tenants; 2) the adequacy of its existing equipment and maintenance reserves; and 3) the creation of a significant amount of protection against energy price increases. All of which would enhance its marketability in a sale.

In their 2009 study, researchers at the Henley Business School found commercial building price premiums of 10% and 31%, respectively, for ENERGY STAR and LEED-certified buildings.

Researchers at Maastricht University found a 16–17% percent price-per-square-foot premium to transaction prices for similar buildings.

Conclusion

Notwithstanding the concerns highlighted by FHFA, it is important to note that other federal entities have been supportive of the development of PACE programs. The DOE, EPA and HUD have each held workshops for state and local entities interested in implementing a PACE program. And the President and the Congress have pledged support to the PACE movement by authorizing tax credit subsidies for PACE bonds in the *American Recovery and Reinvestment Act of 2009*⁵¹. Following the issuance of the FHFA letter, there have been a variety of responses from all levels of government, e.g. city mayors, county commissioners, state governors, and US senators. Each have responded, in their own way, to FHFA's apparent misunderstanding of how PACE programs are designed and the benefits they promise to create⁵².

And most recently, Vice President Joseph Biden, DOE Secretary Stephen Chu, HUD Secretary Shaun Donovan, and Labor Secretary Hilda Solis announced at a White House event that PACE financing would be a major component of the national "Recovery through Retrofit" program⁵³.

This memorandum has attempted to describe a market failure in the capital formation process in the area of energy efficiency retrofit financing in commercial properties. While there have been literally thousands of ESPCs financed in the federal and MUSH⁵⁴ sectors, we are unaware of a single, 3rd-party financed ESPC in the entire commercial property sector. This is market failure on a massive scale. It is real and currently prevents the comprehensive retrofit of commercial buildings, unless financed internally or through an existing mortgage vehicle. While various financing structures have been attempted, none have overcome the barriers we have highlighted. As a variant of the emerging residential PACE financing movement, PACE financing for commercial properties may be the vehicle that solves this market failure. Given its potential to mobilize capital in this critical area, and the additional benefits of job creation, GHG emissions reduction, etc., several large cities are currently contemplating its adoption. Our expectation is that once the first large city shows concrete results, others will follow suit.

Despite its promise, the future of PACE financing is completely dependent upon its acceptance by existing owners and mortgagees. In this memorandum, we have attempted to describe how a PACE financing program would be implemented and present the case for a best practices approach. We believe that owners who choose to adopt these practices would attract competitive capital and create value for themselves and the mortgagee. To be clear, like anything else, energy efficiency can be poorly performed. An inexperienced, non-creditworthy contractor can perform substandard work and subsequently default on its obligations. Owners can decide to reduce costs by waiving the savings guarantee and M&V over time, which would also dilute 3rd party discipline and incentive to maintain the retrofit's technical performance over the long term. However, under a best practices approach, owners and mortgagees stand to benefit greatly from energy efficiency – particularly as tenants increasingly favor energy efficient

⁵¹ Pub. L 111-5

⁵² The original FHFA letter and various responses are available on the PACE NOW website (www.pacenow.org).

⁵³ www.whitehouse.gov/assets/documents/Recovery_Through_Retrofit_Final_Report.pdf

⁵⁴ Municipalities, universities, schools and hospitals.

space, all theses being equal. ESPCs are specifically designed to address these considerations. While they may be more costly to implement, they permit the owner to guarantee technical performance, and therefore savings, and shed risk. In that sense, the added premium for implementing an ESPC may be viewed as an insurance premium to assure value.

We have further attempted to itemize the principal benefits of energy efficiency and even quantify their potential range. The thrust of the analysis suggests that energy efficiency both pays for itself and positions the property to outperform its peers and generate higher returns. As we have documented, these benefits are varied and are potentially enormous in value relative to the size of the project. Lastly, we have attempted to address the criticism of the PACE financing model, as conveyed by FHFA. This criticism was based on very reasonable concerns regarding diminishment of the mortgagee's position, encumbrance of the owner's ability to service liabilities, and the future market value of the asset. We have hopefully conveyed that each of these concerns are not only addressable, but represent potential benefits of the tax lien model. That is, the mortgagee's position may be enhanced, the owner's cash flow coverage increased, and the asset made more marketable.

As the early tax lien models are adopted, our hope is that industry stakeholders – owners, mortgagees, policy-makers, property managers, lenders, etc., -- are able to work cooperatively to develop contracting and financing structures that blend and balance the interests of all parties. This market failure can be finally solved and the massive inefficiencies embedded in the nation's existing commercial buildings may be addressed in a way that generates lasting value for owners and reduces burden on the environment.