

# The Role of Incentives in Green Building Valuation

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## Abstract

Green building demand continues to increase. Policies, incentives and regulations that affect the demand for green buildings are widespread and emanate from the federal, state, and local levels. This article discusses the influence of rebates, financing, and tax incentives. Rebates and incentives reduce the cost disparity between conventional and green commercial buildings. In valuation, these should be considered to the extent they are commonly available to all market participants at the time of the appraisal. Understanding the market's perspective on incentives as well as the extent of their availability is critical to properly addressing the market value impact of green building incentives.

A wide variety of incentive programs are available for energy-efficiency improvements, solar photovoltaic (PV), and other renewable energy improvements like solar water heating, and other components of comprehensive green building certifications. Various incentive programs available at the federal, state, and local levels include both direct financial incentives—such as rebates, tax abatements, grants, and financing programs—as well as indirect incentives, such as expedited permitting programs and density bonuses.

These programs are designed to encourage the adoption of green building practices that are viewed as beneficial to the public but may be more costly to implement than conventional building practices. In this way, such programs affect supply and demand for green building.

In the United States, the Database of State Incentives for Renewables and Efficiency (DSIRE) is a repository of energy-efficiency and renewable-energy policies and incentive programs for each state.<sup>1</sup> While it is a good starting

point for available incentives in a particular area within the US, this database may not include every available program for certain types of green building incentives that are not directly related to energy efficiency and renewable energy generation, such as green infrastructure. The local municipality and local utilities, such as the water and sewer authority, may be the best source of information relating to any available green building incentives that may not be directly related to energy efficiency or renewable energy generation.<sup>2</sup>

## Types of Incentives and Impact on the Valuation Process

Incentives raise a variety of valuation issues. Incentives can include rebates, tax effects, and special financing programs available for green-related improvements, any of which may affect the valuation process. The nuanced yet critical question of how incentives differ from conces-

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1. See [www.dsireusa.org](http://www.dsireusa.org).
2. A number of communities offer such programs through the water and sewer utility. For example, see the information on green infrastructure funding available through the Milwaukee Metropolitan Sewerage District at [www.mmsd.com/mmsd-news/green-infrastructure-funding-available](http://www.mmsd.com/mmsd-news/green-infrastructure-funding-available). The Milwaukee area and other Great Lakes communities deal with rainwater runoff in the watershed. Other areas in the country face other water-related issues and may offer similar green infrastructure incentive programs.

sions from a valuation perspective is discussed below. While this distinction may initially seem to be little more than a point of semantics, whether the offset is classed as an incentive or concession changes how it is analyzed within the appraisal process.

### **Incentives or Concessions?**

Incentives for green building improvements, such as energy-efficiency upgrades and on-site energy generation, are sometimes confused with concessions offered by sellers or landlords at the time of transaction. However, there are important differences between the two. While a seller- or landlord-provided concession may in some cases function as an incentive in that it facilitates a sale or lease transaction, seller- and landlord-provided concessions are treated differently in the appraisal process.

Third-party incentives in the context of green building differ from seller-provided concessions in two important respects: the funding source and the timing. Exhibit 1 breaks down the various scenarios that may be encountered for a subject property and comparable properties that receive proceeds related to green building improvements. As seen in the graphic, the first step is determining *when* the proceeds are provided, followed by identifying *who* is providing the funds. That is, the first question is whether the proceeds are transferred at the time of the transaction or independent of the sale or lease transaction, and second, whether the proceeds are being provided by the seller/lessor or by a third party.

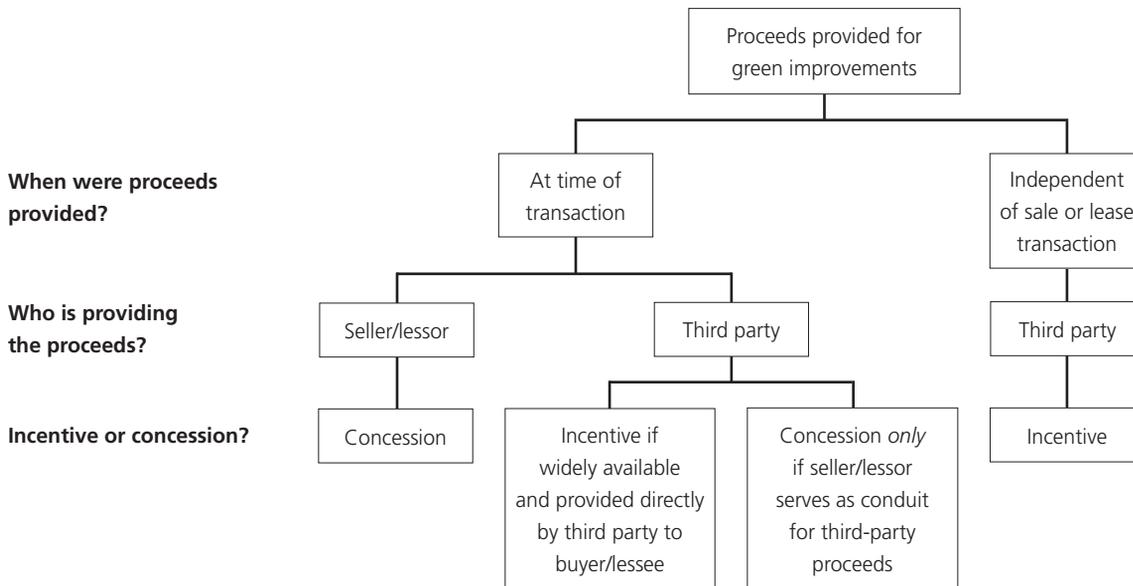
As the exhibit shows, proceeds for green improvements are generally considered to be concessions if they were provided by the seller at the time of a transaction, whereas such proceeds would be considered incentives if they were provided by a third party independent of a particular transaction. The exception occurs when a third-party incentive is transferred by the seller to the buyer as part of a transaction. This situation could occur in cases of rebates for green improvements offered by the local utility or government that a developer/builder may assign to the buyer at the time of sale, such as a rebate for an energy-efficient lighting upgrade. In that case, while a third party is the ultimate source of the funds, it is the seller who is providing them to the buyer as part of

the bundle of rights transferring at the time of sale, with the seller acting as a conduit for the incentive. In contrast, if the proceeds are third-party provided without passing through the seller, and assuming that the benefit would be available to any prospective buyer, this would not be considered a concession. Preferential Fannie Mae financing terms for green multi-family properties would be an example of a third party-provided incentive that may be tied to a particular transaction.

The distinction between incentives and concessions can impact the analysis of a subject property and its comparable properties. While both incentives and concessions have the effect of reducing the net cost of the green improvements to the recipient, they are treated differently in the appraisal process. Seller-provided concessions are typically treated as a line-item deduction from the gross sale price in order to normalize the price absent the effect of the seller-provided concession. Similarly, landlord-provided concessions reduce the effective rental rate paid by the tenant. Third-party incentives, in contrast, typically function independently of a particular transaction. Therefore, unless the third-party incentive is specifically tied to the transaction, it would not normally be a consideration when analyzing the current sale price of the subject property or a comparable property in the sales comparison approach.

Third-party incentives are, however, a relevant consideration when analyzing the current or historical cost of a property or an improvement to a property. For example, if rebates for energy-efficiency improvements are widely available in the current market, they should be considered when evaluating the contributory value of the improvements in the cost approach or cases when a cost-based adjustment is used in another approach. If the rebate program has expired and rebates are no longer available, they no longer represent a reduction in the current replacement cost of the improvement and would not be considered.

Ongoing incentives may also need to be considered in the appraisal process. For example, suppose that the subject property or one of the comparable properties benefits from an ongoing incentive such as a feed-in tariff (FIT), a scheme whereby excess electricity generated by an on-site renewable energy system is reimbursed at a pre-

**Exhibit 1** Are Proceeds for Green Improvements Incentives or Concessions?

mium rate.<sup>3</sup> If this incentive is no longer available in the market, this financial benefit represents a unique attribute of the property for which an appropriate adjustment would need to be made, assuming it could be transferred to another buyer.

### Rebates, Grants, and Other Direct Reimbursements

*Rebates* are direct payments to the property owner to offset some or all of the cost of qualified improvements. Rebate programs are usually administered locally by the utility or municipality and are often funded through a ratepayer surcharge or another means. Rebate programs vary widely but may apply to energy-efficiency upgrades such as insulation, high-efficiency windows or HVAC equipment, solar PV, battery storage, or low-flow plumbing fixtures. The programs often have a defined time period or a maximum subscription amount.

For example, in some areas, distributed solar PV systems were initially eligible for rebates that declined in amount per watt installed based on

the total amount of installed capacity in the utility service territory. In many areas, solar PV rebate programs have been fully subscribed and new installations are no longer eligible for utility rebates. However, rebates for solar hot water heating systems or energy-efficiency improvements may still be available. Rebates may also be available for green infrastructure improvements such as permeable pavement, bioswales, and rainwater detention or treatment improvements (such as cisterns). The availability of these programs varies with the local jurisdiction's priorities and funding capacity.

Rebates reduce the cost of the qualified improvements to the property owner on a dollar-for-dollar basis. They are normally deducted from the current replacement cost new as a line item in the cost budget at the level currently available in the market.

*Grants* function in much the same manner as rebates, reflecting a direct reimbursement to the property owner for qualified green improvements. Grants are often targeted to cutting-edge technology and other high-cost improvements that

3. *Tariff* refers to the rate schedule and other terms of service approved by the regulatory body that oversees the public utility service provider. Rate schedules are structured in a variety of ways. A *feed-in tariff* (FIT) is a rate structure designed to incentivize distributed renewable generation by offering a volumetric price premium, often for a specific contract period, for renewable energy sent back to the grid.

are seen as beneficial but may not otherwise be implemented due to a high initial cost. Examples of grant programs include battery storage as well as weatherization and other energy-efficiency improvements for low-income housing.

Rebates, grants, and other forms of direct reimbursements affect the cost approach to the extent that they are widely available to the market and are being used by market participants. If they are no longer available, historical rebates should not be applied to a current replacement cost estimate. This type of incentive also affects any cost-based adjustment to the income capitalization or sales comparison approach for the contributory value of green-related improvements by reducing the net cost to the property owner. Primary market research may be necessary to discern the extent to which the market is incorporating these direct reimbursements into its view of the contributory value of the improvements.

### **Tax Effects**

Tax credits and other tax implications of real estate are usually not considered in the process of a market value appraisal. However, the market reaction to the federal Business Energy Investment Tax Credit (ITC) and its importance in the continued expansion of solar PV and other forms of renewable energy should be considered in the appraisal of properties with distributed energy generation capacity.

The ITC is a tax credit available to US taxpayers as a dollar-for-dollar reduction in tax liability taken at the end of the year that the project is placed in service. The current rate for commercial properties is 30% of the qualified basis through 2019, declining to 26% in 2020, 22% in 2021, and then 10% in 2022, where it remains indefinitely.<sup>4</sup> Solar PV is eligible, as are a variety of other renewable technologies. However, some technologies have maximum limits and/or more attenuated credit reduction.

The ITC is widely credited with facilitating the growth in distributed solar PV. The market appears to have internalized this expectation, and the solar installation industry widely employs its benefit when selling systems to prospective clients. Because it is available virtually every-

where in the United States and can be monetized in the first year by any US taxpayer with an adequate tax liability, all or a portion of the federal ITC is typically viewed in the marketplace in the same manner as other incentives, such as rebates and grants. In the context of the cost approach, the ITC shares the characteristics of external obsolescence to the extent that it affects all properties similarly, reduces the cost equally, and is external to the parties to the transaction. However, the ITC is subject to a five-year recapture for commercial properties, which may reduce its value, particularly for properties that are expected to transfer within five years of installation.

*Accelerated depreciation* may also be presented as a direct financial benefit of renewable distributed energy systems like solar PV. Renewable energy systems are eligible for federal Modified Accelerated Cost Recovery System (MACRS) tax deductions. There may also be favorable state-level depreciation deductions available. While it is possible that accelerated depreciation may reflect some level of financial benefit to property owners in certain markets, the extent of that benefit would be limited to the marginally faster cost recovery relative to the cost recovery available for other, similar property improvements. Furthermore, the timing of the benefit would need to be considered, which could entail comparing the present value of the alternate depreciation schedules.

### **Financing-Related Incentives**

Financing programs are also available for a wide range of energy-efficiency and green building improvements, as well as renewable energy generation. The various programs may offer below-market interest rates, favorable underwriting standards, or a combination of the two. For example, Fannie Mae began offering a green building incentive financing program for multi-family projects that meet certain green building guidelines in early 2016. The program uses conventional underwriting but allows a 25 basis point reduction (or more) in the interest rate.

The treatment of favorable financing programs for green building-related improvements is similar to the manner in which favorable financing

4. For residential installations, the ITC declines to 10% in 2020, where it remains indefinitely. Tax policy is subject to change. See [www.dsireusa.org](http://www.dsireusa.org) or a similar database for up-to-date incentive availability, including tax credits.

for conventional buildings is handled in the appraisal process. For example, the benefit of the 25 basis point reduction in the interest rate could be estimated as the present value of the difference between the respective loan payments at market rates versus the favorable rate, discounted at the market rate.

Property Assessed Clean Energy (PACE) programs, sometimes also referred to as C-PACE for commercial properties, are a special type of financing program that can be used for a variety of green improvements, including energy-efficiency upgrades and renewable energy systems. PACE programs allow the property owner to finance qualified improvements with the payments added to the property tax bill, much like a special assessment for a municipal bond. The programs vary in terms of requirements and may be offered by a municipality or private sector entity. The program may or may not require an appraisal of the underlying real estate. Underwriting is often less rigorous than it would be for a conventional loan, which adds to the program's appeal. Furthermore, PACE loans are typically transferrable upon sale to the new owner, unlike conventional loans, and because they are billed with the property taxes, may be viewed as a priority lien on the asset. If the interest rate on the PACE loan is above market, the PACE encumbrance may need to be evaluated for its effect on marketability and/or the potential purchase price.

The effects of PACE financing on the valuation process may vary and can be complex to analyze. The last section of this article delves into some of the more nuanced appraisal issues that may develop due to PACE financing.

On-bill financing is similar to PACE financing, except that instead of being billed with the property taxes, the payment for the loan is included with the local utility bill. On-bill financing impacts depend on the nature of the program, the magnitude of the monthly payment, and whether the financing follows the property or the property owner in the event of transfer.

### Other Incentives

Some of the other more common but indirect incentives for green building-related improvements include expedited entitlement processing, density bonuses, Renewable Energy Certificates and Credits, and FITs.

Entitlement benefits such as expedited permitting and density bonuses may also be available in certain areas for green building-related improvements. Some programs specify a certain level of LEED certification or an equivalent. While the value of expedited permitting may be more difficult to quantify, the effect of a density bonus, particularly in higher-density urban and transit-oriented suburban areas, may be more readily quantifiable.

Renewable Energy Certificates and Credits (RECs) are tradable representations of the environmental benefits of renewable energy generation that are sold separately from the electricity generated.<sup>5</sup> They are also known as "green tags," "green certificates," and "tradable renewable certificates." RECs are typically traded in a minimum of 1 megawatt-hour (MWh) increments.

RECs are available for purchase by virtually anyone, but the primary customers are electrical utilities in states where renewable portfolio standards (RPS) requirements can be met by purchasing RECs. They may be traded in an open market or bought and sold in a more controlled setting, depending on the market. Open-market pricing tends to be more volatile, as it is sensitive to the spot pricing impacts of supply and demand. In addition, the purchase contract may extend over multiple years, and the price per MWh may be structured to decline over time. While these incentives may represent a significant financial incentive to the property owner, they are typically considered to be an intangible component of value and are reported separately in the market value appraisal of real property.

FITs are not common in the United States, although they have been used widely in other areas, such as Germany. FITs reflect a utility tariff wherein a distributed energy generator such as

5. RECs are referred to as Solar Renewable Energy Certificates (SRECs) in some markets.

a rooftop solar owner receives a premium from the utility over the cost of grid-purchased electricity for net electrical generation provided to the grid. These tariffs are usually intended to facilitate the local utility in reaching its RPS requirements. The impact of a FIT would depend on the degree to which the reimbursement rate is above the price of grid-purchased electricity, the duration of the agreement, and whether it is transferrable to a new owner. Some of the same risk considerations would apply to FITs as to net energy metering (NEM) tariffs.<sup>6</sup>

### PACE Financing

PACE financing is sometimes advertised as adding value to a property, which is misleading. PACE is simply a financing vehicle. While the improvements that PACE finances may, and often do, materially affect market value, the benefit must be reported in light of the priority lien that a PACE encumbrance represents. What can be confusing to all involved is that market value appraisals typically assume ownership free and clear of liens or encumbrances, yet the PACE encumbrance is a priority lien billed with the property taxes.

As a financing vehicle, PACE encumbrances, particularly PACE loans for improvements that affect the operating expenses like energy-efficiency upgrades and distributed generation, require attention in both the development and the reporting of the appraisal. The developing and reporting are interrelated, and care is required to be internally consistent within the report and to be consistent with how the PACE encumbrance is reported in the appraisal.

### Appraisal Development Issues

The primary issue when developing the appraisal for a property with an existing or proposed PACE encumbrance is whether the reported value conclusion will include the value of the

PACE-financed improvements. If the reported value includes the benefit of the PACE-financed improvements, the reported value conclusion should also reflect the associated encumbrance. If the appraisal of a property does not include the benefit of the PACE-financed improvements, the reported value conclusion becomes a hypothetical value, unless the improvements have not yet been completed. No matter how it is developed and reported, the optimal solution is best attained during the process of developing the scope of work with the client at the outset of the assignment.

### Appraisal Reporting Issues

Once the appraisal development concerns have been addressed through the scope of work, two important appraisal reporting considerations should be kept in mind in order to avoid reporting a misleading result. First of all, the PACE encumbrance should be clearly disclosed and reported throughout the report, and best practices would include the PACE encumbrance everywhere the as-proposed value is reported. Second, particularly for lender assignments, the client may require a separate income statement that reflects the reduced expenses due to the solar PV-generated electricity, energy-efficiency improvements, or other cost reduction measures such as water or waste stream considerations. This as-proposed NOI could then be used for underwriting purposes, more accurately reflecting the cash flow available for debt service.

In this second instance, several important issues should be kept in mind when reporting an as-proposed NOI. If the improvements include items like a solar PV system, which is expected to have an economic life that may be less than the overall property, then an adjustment to the replacement reserves should be considered in order to reflect the cost of replacing the system in the future. The cost of replacing the inverter(s) should also be included. These costs could be included in a variety of ways: as a separate line

6. *Net energy metering* (NEM) is an electrical rate structure, also referred to as a *tariff*, that allows a grid-tied distributed energy generator to offset the future use of grid-supplied electricity with on-site generation that exceeds instantaneous demand. NEM tariff structures vary by utility jurisdiction but typically allow credits for excess generation that can be applied to offset future demand, often limited to a specified time period, such as a year. Depending on the utility service provider, credits for excess generation may reflect all or a portion of the full retail rate at the time of generation or may be based on something less than the retail rate, such as the wholesale electricity rate.

item, in the repairs and maintenance category, or in the replacement reserves allowance. Similarly, the operating costs may also be affected by any required costs of ongoing commissioning, maintenance, and repairs of complex systems.

### **PACE versus Infrastructure Bonds**

PACE encumbrances are sometimes viewed as analogous to publicly issued bonds for infrastructure improvements associated with new development projects. While there are similarities, there are also important distinctions that may determine how the client views the PACE payments from an underwriting standpoint and how the PACE encumbrance is reported in the appraisal.

Infrastructure bonds typically pertain to improvements that benefit one or more privately owned parcels but are situated on contiguous, publicly owned land. In contrast, PACE is used to finance improvements to privately owned buildings situated on private land. Secondly, infrastructure bonds are imposed by collective vote and cover an entire class or group of properties. In contrast, PACE financing is voluntary, pertains to a single property, and is at the discretion of the private property owner. While it might be argued that infrastructure bond assessment payments reflect a tax and thus are part of the governmental powers exception that prevails over fee simple ownership, the private property owner's control over participation and direct ownership of the PACE-financed improvements do not fit the common definition of a governmental imposition or tax.

This distinction may be important in determining how a lender client views the PACE payments from an underwriting standpoint and how the PACE encumbrance is reported in the appraisal.

### **PACE Financing Case Study**

As discussed in the previous section, PACE financing allows property owners to borrow money to finance green improvements. The payment is added to the property tax bill, and lending requirements may be less stringent than they would be for a typical loan. Valuing a property with a PACE encumbrance may be relatively

uncomplicated. On the other hand, complexities can quickly arise, even from projects that may at first seem straightforward.

### **Case Study Property Overview**

A property owner of an 82,400-sq.-ft., 1980s-era, single-tenant industrial manufacturing building located in the Silicon Valley of Northern California wants to finance a \$2.25 million solar PV project without paying out of pocket for the up-front costs. In addition, the owner would like to pass along the cost of the PV system to the tenant, who will be the primary beneficiary, since the tenant's electricity bill would be eliminated by the installation of the solar PV system.

The property is leased for a remaining term of nine years to a high-tech electronics manufacturer. Under the triple-net lease, the tenant pays 100% of all building expenses, except structural reserves. The tenant's current monthly electric bill averages almost \$20,000, excluding fixed charges, representing 1,200,000 kWh of electricity load per year. The property owner wants to install a 750 kW DC solar PV array to essentially supply the tenant's entire electricity load, making the facility net zero energy (NZE).

Adequate roof area is not available to accommodate a system of this size, so approximately one quarter of the modules need to be situated on carport mounts in the parking lot. The carport mounts are more expensive than roof mounts, but they also provide a shade amenity for parked cars, which is a desirable amenity for the tenant's employees in this climate.

The installed cost of the system is summarized in Exhibit 2. As indicated in the table, the solar PV system cost includes the carport mounts. Replacing the roof was deemed necessary due to its age and the costs of removing and reinstalling the modules during their expected economic life of 25 years. The reported costs are gross costs, before considering any available incentives.

In this utility territory, all utility and municipal rebates and incentives have been fully subscribed and are no longer available to new solar PV projects. The 30% federal ITC is available for the qualified portion of the project. Solar PV installations also qualify for accelerated depreciation under the five-year MACRS schedule. The project parameters are summarized in Exhibit 3.

### Potential Benefits of Using PACE Financing

In looking at this project from the points of view of the landlord (property owner), tenant, and lender, a variety of potential benefits can be seen. The primary potential benefits of using PACE financing for the landlord include:

- No need to refinance the existing mortgage
- No out-of-pocket cost
- No personal credit guarantee—real estate is sole security for the loan
- All or a substantial portion of the system cost paid directly via the tenant's property tax bill
- Free and clear ownership of a 10-year old solar PV system once the PACE loan is paid off
- May provide a financing option for owners in cases when sourcing additional equity or debt are not viable or are forbidden by the existing loan covenants

The primary potential benefits for the tenant include:

- Fixed electricity costs for the remainder of the lease term
- Marketability of carbon-free manufacturing to clients
- The potential to build in electrical grid resiliency by adding battery storage

For the existing lender in first lien position, the main benefit of consenting to allow a PACE encumbrance to step ahead of the first mortgage in lien priority is to maintain an existing customer relationship. There may be a few other benefits to the primary lender.

### Does the PACE Solution Pencil Out?

Exhibit 4 shows the key parameters of PACE financing proposed for this project. This situation presents an intriguing scenario. As noted in Exhibit 4, the proposed financing would require the tenant to pay a 49% premium, or \$106,000 more per year for electricity. Unless the tenant agrees to pay this premium for renewable energy, this solution would not appear to meet the property owner's stated requirements of avoiding up-front costs for the solar PV system.

What else might explain why this proposed solution might be acceptable to both the property owner and the tenant?

There may be several reasons for tenants to consider a scenario in which they pay a premium for this type of on-site renewable energy:

- The lease includes language that requires it, i.e., the tenant signed a "green lease."
- The tenant perceives other benefits, such as the business benefit of advertising carbon-neutral manufacturing to the clients.
- The tenant perceives a benefit in fixing electricity costs for 10 years, which exceeds the 49% electricity cost premium.
- The tenant can reap some or all of the associated tax benefits.

In this particular case, the tenant was a part owner of the building and thus was able to derive partial benefit from the 30% federal ITC and five-year MACRS accelerated depreciation deduction. However, without these tax benefits, selling this program to the tenant would likely be a struggle. Alternately, the landlord could fund the shortfall, which would be offset by the same tax credit and depreciation benefits during the first five years.

### Potential Risks of PACE Financing

Assuming all parties agree to the proposal, what are the risks to the property owner (landlord) and tenant in this case?

- **Vacancy risk.** PACE payment continues for 10 years even during vacancy, when the property does not benefit from the avoided electricity cost. The risk accrues primarily to the landlord.
- **Superadequacy risk.** Is PV capacity consistent with market demand for electricity for the most probable user? In other words, will the business needs of the current tenant change the amount of electricity needed for the remaining lease term? Will more energy-efficient equipment reduce the electrical load in the future? This risk accrues primarily to the tenant since the PACE loan term and the remaining term of the lease closely coincide in this case.
- **Negative leverage risk.** Negative leverage occurs when the PACE payment is greater than the operating cost savings due to short amortization, interest rate, or operating cost savings that do not justify up-front cost. In this case, the risk accrues primarily to the tenant.

**Exhibit 2** Case Study Property, Breakdown of the Cost for the Solar PV System

Solar PV system	\$1,812,000
Re-roofing	\$377,000
PACE closing costs	\$61,000
Total system cost	\$2,250,000
Installed cost per watt	\$3.00 per watt

**Exhibit 3** Case Study Property, Project Overview

Property type	1980s-era industrial manufacturing building
Property size	82,400 square feet
Amount to be financed	\$2,250,000 gross system cost
Size of solar PV system	750 kW DC
Projected electricity generation	1,200,000 kWh per year (Year 1)
Lease term remaining	9 years
Current electricity cost	\$20,000 per month (1)
Gross avoided electricity cost	\$238,000 per year (2)
O&M allowance (\$30/kW DC/yr.)	(\$22,500) per year (3)
Net avoided cost of electricity	\$215,500 per year
Utility and municipal rebates?	No
Tax credit?	Yes 30% ITC available
Accelerated depreciation?	Yes 5-year MACRS

(1) Net of fixed charges

(2) System sized to provide 99% of predicted electricity load

(3) Annual allowance for inverter replacement, monitoring, and maintenance

**Exhibit 4** Case Study Property, Summary of Key Parameters of the PACE Financing Proposal

Amount financed	\$2,250,000
Term	10 years
Payments	Biannual
Interest rate (nominal)	5.65%
Annual PACE payment	\$321,500 per year (1)
Net avoided electricity cost	\$215,500 per year (2)
Payment premium with PACE	\$106,000 per year

(1) Includes reserve for initial year payment (as reported by landlord)

(2) Net of operations and maintenance (O&M) allowance to maintain an existing customer relationship.

- **Marketability risk.** Will the investment and leasing markets view the PACE encumbrance as a negative factor? This risk accrues to the landlord.
- **NEM risk.** The current NEM tariff may change unfavorably at some point in the future, reducing the value of the avoided electricity cost. In this case, the risk accrues primarily to the tenant.

These risks are not materially different than the risk any property owner faces for a non-green renovation or tenant improvement project. No tenant equals no rent, and specialized improvements may or may not garner the same rent premium in the marketplace as generic improvements, which could result in superadequacy and/or negative leverage. These risks are inherent in all real estate, green or conventional. However, the origin and nature of the risk may be unfamiliar to the valuation professional and the property owner accustomed to conventional real estate risk/return analyses. For example, NEM risk analysis requires some level of understanding of the behavior of the regulatory authorities who set NEM tariffs, as well as the susceptibility of the tariff-setting process to political influence from IOUs. In some utility territories, existing NEM tariffs may be grandfathered and thus protected from changes for a specified period, such as 20 years.

Superadequacy risk from the tenant's perspective includes risk specific to the current tenant's business and the larger business sector in which the tenant operates. If demand for the tenant's products or services decreases or the overall business sector declines, the tenant may be locked into a fixed-cost arrangement when demand is variable and has declined. Technological advancements could also reduce demand, as new equipment and building components become more energy efficient, either voluntarily or due to code upgrades. This risk cuts both ways, however, as shifts toward electrical vehicles that require daytime charging stations, for example, may more than offset the reduced demand from technological advances, building code changes, or changes in the specific business or sector.

What about the risk to the first lien holder, that is, the lender who has an existing first trust deed in place and may be asked to consent to a

PACE priority lien? Primary concerns of the first mortgage lender include:

- **Vacancy risk.** Who pays the PACE debt service if the tenant vacates?
- **Underwriting risk.** How do the loan-to-value, debt coverage ratio, and other underwriting parameters change with the PACE loan? Does this affect the landlord's ability to make timely loan payments on the first mortgage?
- **Regulatory compliance risk.** Will the bank regulators change how the loan is classified due to the PACE encumbrance?
- **Default risk.** Just like property taxes, the lender is ultimately responsible for the PACE payments if the borrower fails to stay current. However, there is some protection for the primary lender, as the PACE loan usually cannot be accelerated in the event of default. In other words, the primary lender cannot be required to pay off the outstanding balance on the PACE loan just because the borrower falls behind on the PACE payments.
- **NEM risk.** Does the tenant's ability or willingness to pay deteriorate if the NEM tariff changes such that the avoided electricity cost to the tenant is reduced?

Lender risk concerns are likely to be commensurate with the magnitude of the PACE encumbrance. A PACE encumbrance of less than 5% of the asset value is likely to warrant less concern and scrutiny from the lender than the present example, in which the \$2.25 million PACE encumbrance could approach 20% of the market value of the underlying asset.

## Summary

Green building incentives provided by utilities, public agencies, or other third parties result from policies intended to encourage green building practices. A wide variety of incentives exist for green building-related improvements that can have material impacts on the appraisal process. These programs may be direct subsidies such as rebates, tax benefits, or favorable financing, as well as less direct material benefits such as expedited entitlements or density bonuses. Understanding the market's perspective on the

incentive, as well as the extent of its availability, is critical to properly addressing the market value impact of green building incentives.

PACE programs provide financing options for energy-efficiency, distributed-generation, and other green improvements that may not otherwise be feasible due to liquidity limitations, existing loan covenants, or leases that do not permit these costs to be recovered. As a financing vehicle for improvements that often affect

the operating expenses of a property, special care is required in the development and reporting of the appraisal. There are a variety of ways to accurately incorporate the value effect of the improvements and the underlying encumbrance in a clear manner that is not misleading. Engaging the client in this discussion early when developing the scope of work is central to a satisfactory outcome for both the client and the appraiser.

### About the Authors

**Timothy P. Runde, MAI, LEED AP**, is a nationally recognized expert in green building valuation and the cofounder of Runde & Partners, Inc., a commercial real estate appraisal and consultancy firm based in San Francisco. Runde has a long-standing interest in the nexus between the built and natural environments. The combination of his undergraduate studies in zoology and a graduate degree in real estate appraisal and investment analysis from the University of Wisconsin–Madison allows him a unique perspective into the interplay of the environmental, social, and financial factors that sustainability introduces to real estate. Runde is a sought-after speaker on the effects of green building and sustainability on the valuation of real estate. He has published numerous articles on the valuation of green buildings and is an approved instructor and course reviewer for the Appraisal Institute. He is the coauthor of *The Valuation of Green Commercial Real Estate* and codeveloper of an Appraisal Institute course on the valuation of green commercial real estate based on that textbook. Besides expertise in green building, he maintains an active general appraisal practice with a focus on complex and special-purpose properties. He frequently testifies as an expert witness on a wide range of topics, including diminution in value, eminent domain, bankruptcy, estate, and ad valorem tax assessment.

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**Stacey L. Thoyre, WELL AP, LEED Green Associate**, is the cofounder of Runde & Partners, Inc., a commercial real estate appraisal and consultancy firm based in San Francisco. She combines a risk management perspective and an occupant health focus in her approach to the valuation of green real estate. While completing her undergraduate degree in finance and risk management at the University of Wisconsin–Madison, she had the opportunity to learn the fundamentals of real estate valuation theory from renowned real estate professor Dr. James A. Graaskamp. After working in the risk management field, Stacey later earned a master's degree in writing and is a published author of both fiction and nonfiction. She has coauthored several articles on green building valuation. She is the coauthor of *The Valuation of Green Commercial Real Estate* and the codeveloper of an Appraisal Institute course on the valuation of green commercial real estate based on that textbook. Most recently, she has completed the Appraisal Institute's Valuation of Sustainable Buildings Professional Development Program and is listed in its online registries of residential and commercial appraisers. She also holds both the WELL AP and LEED Green Associate credentials. The WELL AP credential builds on her prior experience as an ACSM Certified Exercise Physiologist and signifies particular knowledge and expertise regarding the health effects of the built environment. **Contact:** [stacey@runde-inc.com](mailto:stacey@runde-inc.com)

SEE NEXT PAGE FOR ADDITIONAL RESOURCES >

### **Additional Resources**

Suggested by the Y. T. and Louise Lee Lum Library

#### **Appraisal Institute**

- **Green Building Resources**  
<http://www.appraisalinstitute.org/education/education-resources/green-building-resources/>
- **Lum Library External Information Resources [Login required]**  
Information Files—Energy efficiency/green valuation—commercial buildings

#### **Building Energy Performance Assessment News—Resources**

<http://www.bepanews.com/#>

#### **Earth Advantage Certification**

<http://www.earthadvantage.org/commercial/>

#### **Energy Star Ratings**

<https://www.energystar.gov/buildings/about-us>

#### **Institute for Market Transformation—Retail green lease primer**

<http://www.imt.org/resources/detail/retail-green-lease-primer>

#### **Internal Revenue Service —Modified Accelerated Cost Recovery System (MACRS)**

<https://www.irs.gov/publications/p946/ch04.html>

#### **Green Globes Ratings**

<http://www.greenglobes.com/home.asp>

#### **National Renewable Energy Laboratory—Feed-in Tariffs**

[http://www.nrel.gov/tech\\_deployment/state\\_local\\_governments/basics\\_tariffs.html](http://www.nrel.gov/tech_deployment/state_local_governments/basics_tariffs.html)

#### **US Environmental Protection Agency—Renewable Energy Certificates (RECs)**

<https://www.epa.gov/greenpower/renewable-energy-certificates-recs>

#### **US Department of Energy**

- **Business Energy Investment Tax Credit**  
<https://energy.gov/savings/business-energy-investment-tax-credit-itc>
- **Property Assessed Clean Energy Programs**  
<https://energy.gov/eere/slsc/property-assessed-clean-energy-programs>

#### **US Green Building Council—LEED**

<https://www.usgbc.org/leed>