



What's in a Green Lease?

Measuring the Potential Impact of Green Leases in the U.S. Office Sector

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Introduction

This study, through an analysis of current energy efficiency measures facilitated by the signing of green (or energy-aligned) leases, estimates that green leases have the potential to reduce energy consumption in office buildings by 11 to 22 percent, yielding reductions in utility expenditures in U.S. commercial buildings up to \$0.51 per square foot. Green leases have the potential to provide the leased U.S. office market \$1.7 billion to \$3.3 billion in annual cost savings. The magnitude of the split incentive problem, and the commercial sector's current failure to achieve energy efficiency at scale, presents a significant opportunity for owners and tenants to save billions of dollars through attainable changes to their lease structures and building management.

Office buildings in the United States are not as energy efficient as they should be. Market failures, including the principal-agent problem, have created a gap between the optimal investment in energy efficiency and the actual investment that has occurred in commercial spaces. Owners and tenants seeking low-risk solutions to increase the performance of their buildings should turn to a ubiquitous aspect of commercial real estate: the lease. By adopting green leasing practices, the energy efficiency gap can be filled, and utility consumption in offices across the country reduced—with potential for both landlords and tenants to realize significant savings. By utilizing the lease as a tool to improve energy efficiency, a building operator can create a high-performing asset that minimizes the building's environmental impact, proving valuable to both the socially and fiscally responsible investor.

Adopting green lease practices doesn't mean reinventing the wheel either. By including a handful of new or modified clauses in a traditional commercial lease, both owners and tenants can better realize the benefits of investing in energy efficiency measures. These measures, which will be described in this report, contribute to higher-quality spaces for tenants, who recoup their investment through lower utility bills and improved productivity and comfort. Green lease clauses drive the creation of more-valuable buildings for owners, who enjoy greater rents and lower vacancy.

1. The Green Lease: What Is It?

Green leasing, also known as energy-aligned, energy-efficient, or high-performance leasing, is the practice of realigning the financial incentives of sustainability or energy measures in lease documents.¹ Common commercial leasing practices often suffer from what is known as the principal-agent problem, which is when one party (the agent) performs tasks on behalf of another party (the principal), but the agent does not act with the principal's best interests in mind. For many commercial landlords and tenants, cost structures laid out in the lease lead to the principal-agent problem and discourage landlords and tenants from investing in a more-efficient building.

It is widely accepted that there is a large divide between optimal investment in efficiency and the current state of the market. Of the the market failures that create this lack of investment, both economic theory and empirical evidence support the principal-agent problem as a substantial driver.² In residential cases, up to 35 percent of energy use may be affected by the principal-agent problem.³ Though not directly comparable, leased office and retail spaces exhibit many of the same issues with the principal-agent structure, which directly affects energy consumption in these spaces.

Realigning cost structures through a green lease allows both building owners and tenants to save money, conserve resources, and ensure the efficient operation of buildings. In the commercial office setting, the principal-agent problem is often called the split-incentive problem. In many commercial lease structures, the party expending capital for an energy efficiency upgrade does not sufficiently benefit from the energy savings created by that upgrade. This occurs most frequently in leases where tenants pay for utilities but the landlord is wholly responsible for capital improvements, as is the case in many net leases. The split-incentive barrier is frequently cited by property owners as a key roadblock to energy efficiency projects. By addressing the split incentive and other energy issues, green leases can remove significant impediments to energy and financial savings.

¹ There is no need to call a lease with aligned energy incentives a green lease. It is a well-written lease that takes the benefits of an efficient building into account, and does not have to be presented with an environmental or green lens. Owners don't have to say "Here is the green lease." They can just say, "Here is the lease."

² Gerarden, Newell, Stavins, and Stowe, "An Assessment of the Energy-Efficiency Gap and its Implications for Climate-Change Policy". 2014.

³ Murtishaw and Sahaye, "Quantifying the Effect of the Principal-Agent Problem on US Residential Energy Use". 2006.

A green lease is essentially a standard lease that has “rehabilitated” certain clauses in order to better align financial incentives and sustainability goals between a landlord and a tenant. It is a modern take on the traditional commercial lease that can prove financially beneficial to both landlord and tenant while also benefiting the environment. When an agreement that benefits both parties is reached, the landlord-tenant relationship is strengthened.

All lease types can benefit from adding green clauses. In most net leases (including triple net), the landlord is responsible for capital expenses, but passes utility and other operating costs onto the tenant. The financial savings of lower operating costs in a net-leased building accrue to the tenant, while the landlord pays the capital costs for improvements. Because of this divide, the landlord has little incentive to make energy efficiency improvements.

Modified gross leases confuse the inherent incentives related to energy efficiency. Under certain conditions landlords reap the savings from efficiency, while at other times tenants are the sole beneficiaries of improvements. Regardless of which party is responsible for the initial improvements, this complexity often deters both landlords and tenants from investing in energy efficiency.

While a landlord can invest in efficient systems in order to drive down utility bills, their ability to profit from this lease structure gets hampered by methods to determine the tenant's share of utility expenditures, as well as by slow (or non-existent) recovery of energy efficiency capital expenses, resulting in unattractive returns. As a result, landlords with both net and modified gross leases are deterred from investing in energy efficiency. Meanwhile, buildings with a full-service lease structure face the opposite problem: while the landlord has incentive to keep energy costs down, the tenant is not penalized for profligate energy consumption.

If placed side by side, it would be difficult to tell the difference between a standard lease and a green lease. Changing specific parts of the lease helps to align financial incentives so that the benefits of investing in energy efficiency are shared between owners and tenants. These efficient spaces, in turn, can increase a property owner's net operating income while

improving the quality of tenant spaces.⁴ In this way, green leases not only remove barriers to saving energy, but also create additional opportunities for owners and tenants to derive value from their buildings.

2. A Path to Measurement

When determining the value of lease language that allows cost pass-throughs for building owners, a key question emerges: how much value should be attributed to the lease clause itself, and how much value should be attributed to the performance of the equipment that the cost pass-through enables? This central question guides much of this paper's analysis—in particular energy and cost figures that are presented throughout the study.

Attempting to value green leases proves difficult both in practice and in theory. Incorporating sustainability concepts into the lease is a means to achieve a goal of reduced utility consumption, rather than a goal in and of itself. Instead of signing a green lease, one could choose from many other strategies that also aim to overcome barriers to greater energy efficiency. To find the intrinsic value of a green lease, the degree to which its execution improves or hinders efforts to reduce energy consumption (and its performance compared to other strategies) would be considered.

This paper does not intend to explore the effectiveness of a green lease compared to other energy efficiency tactics. Instead, it acknowledges the reality that commercial buildings in the U.S. could be more energy efficient, and that adopting green leases has the potential to catalyze the creation of a high-performing building stock. Still, one major consideration lends credence to the lease clause containing value: if a particular lease clause makes a retrofit, renovation, or change in operations more likely to take place in a building, then the lease clause is inherently useful due to the increased likelihood of energy savings within a building.

In developing a method to measure the potential savings from green leases, three main areas were taken into consideration: the total amount of leased space in the U.S. commercial market;

⁴ For more information, see [Green Building and Property Value](#), co-authored by IMT and the Appraisal Institute.

typical energy consumption within the existing commercial building stock; and the energy-reduction potential of energy efficiency measures that can be catalyzed by the lease.

Ideally, research investigating the potential of green leases would cover the office, retail, and industrial markets. However, the wide variance in energy consumption in the latter two sectors among different tenants makes it difficult to accurately predict energy savings available through the lease. So, this analysis focuses on the office market, which has a more limited range of energy consumption.

2.1 Size of the U.S. Office Market

Estimating the size of the U.S. office market begins with the U.S. Energy Information Administration's (EIA) Commercial Buildings Energy Consumption Survey (CBECS). The size of the U.S. commercial building stock, including the size of the office market, was taken from CBECS 2012 preliminary data. CBECS accounts for the entirety of the U.S. market, but most office space in the U.S. is owner-occupied. Based on discussions with industry experts and reports from leading real estate firms, it is assumed that 40 percent of all office space in the U.S. is leased. With the 40 percent figure applied, it is estimated that the total leased U.S. office market comprises 6.4 billion square feet.

2.2 Energy Use and Price in Offices

Baseline energy use intensities for the office sector were derived from the 2003 CBECS for electricity, natural gas, and fuel oil. It is assumed that energy intensity does not change substantially between leased and owner-occupied space. Commercial electric fuel prices were derived from the EIA's State Energy Data System (SEDS), while natural gas and fuel oil prices were taken from the EIA's Short-Term Energy Outlook (STEO). A baseline of energy consumption and expenditures is calculated for each fuel type by multiplying leased floor space, consumption intensity, and commercial prices for each sector and fuel type.

2.3 Energy Savings from Lease Clauses

Estimated energy savings for various lease clauses were derived from a number of studies by industry and trade sources, savings estimates from the U.S. Environmental

Protection Agency's (EPA) ENERGY STAR Program, and the EIA.

Careful consideration was taken to avoid double counting of savings. Energy savings measures were analyzed to account for the areas of building energy consumption each measure would affect. Measures that may already be present in a substantial portion of the office market were also considered, and savings rates were adjusted according to existing market penetration.

2.4 Evaluation of Potential Savings

The total potential energy and cost savings is calculated for each fuel type by multiplying the size of the leased office market by the average consumption intensity and average commercial energy prices for the office sector, and adjusting this figure according to the low and high savings potential determined feasible according to lease clauses. The final calculation process is seen in Figure 1 below:

$$\left(\begin{array}{c} \text{Annual} \\ \text{Potential} \\ \text{Savings} \end{array} \right) = \left(\begin{array}{c} \text{Leased} \\ \text{Office Space} \\ \text{(ft}^2\text{)} \end{array} \right) \times \left(\begin{array}{c} \text{Consumption} \\ \text{Intensity} \\ \text{(BTU/ft}^2\text{)} \end{array} \right) \times \left(\begin{array}{c} \text{Commercial} \\ \text{Energy Prices} \\ \text{($/BTU)} \end{array} \right) \times \left(\begin{array}{c} \text{Green Lease} \\ \text{Clause Savings} \\ \text{(\%)} \end{array} \right)$$

Figure 1. Breakdown of Calculations

3. Key Findings

Using the above methodology, we found that 11–22 percent of building energy consumption could be unlocked through the implementation of green leases within U.S. office buildings. Values represent the predicted average savings across the entire U.S. market, after taking into account measure overlap, differences in heating fuels used regionally, and existing market uptake of efficiency measures.

Green Lease Savings	Low Savings Case	High Savings Case
Tenant Space Energy Savings	6.9%	12.5%
Common Area Energy Savings	1.5%	4.0%
Core Building System Energy Savings	3.1%	5.8%
Potential Energy Savings (Average, per building, across entire market)	11.4%	22.3%

Table 1. Potential Savings Catalyzed by Implementing Energy-Aligned Leases

Measure	Low Savings Potential: U.S. Office Buildings (USD, Nominal)	High Savings Potential: U.S. Office Buildings (USD, Nominal)
Savings (\$)	\$1,690,000,000	\$3,290,000,000
Savings (\$/ft ²)	\$0.26	\$0.51
Energy (MMBTU)	77,800,000	152,000,000
Savings (MMBTU/ ft ²)	0.012	0.024

Table 2. Annual Energy Savings Potential in US Office Buildings Catalyzed by Energy-Aligned Leases

4. Benefits and Energy Savings from Green Clauses

To better understand the benefits of implementing green lease clauses, it is important to draw the link between how and why a lease is better suited to affect certain aspects of building operation, and subsequently certain energy efficiency measures. The following section details the green lease clauses included in the energy savings potential of the previous section.

4.1 Cost Recovery Clause: Split Incentive Language

A cost recovery clause in a green lease is designed to overcome the split-incentive barrier and help owners justify energy-saving improvements that boost overall building performance. In most common commercial lease types, the split incentive appears when a building owner has to pay capital expenses to improve a building (for example, the replacement of heating and cooling equipment), while tenants receive the benefits of lowered utility bills. The large investment required for capital projects means that the split incentive often holds up projects that have the greatest potential to reduce energy consumption (and thus save money). Fortunately for building owners, a variety of solutions exist to overcome the split incentive, and many office owners already incorporate capital expense recovery at some capacity into their leases. The ultimate solution used depends on the market, the sector, and the negotiation process of a particular lease.

While lease language that addresses the split incentive does not directly reduce energy costs the way some other green clauses do, the more an owner can share the costs of sustainability measures with tenants, the greater that owner's return on investment will be for new equipment and programs implemented in the building—which will increase the number of projects available (or the quality of equipment installed) for the building owner.

Amortization

One common form of repayment for capital expenses that an owner can use is amortization. Amortization is a method of spreading out capital expenses for assets over a specific period of time, often the asset's predicted useful life, for accounting and tax purposes.

Amortizing capital expenses allows building owners to recoup their capital expenses from tenants, who enjoy the benefits of lower energy bills. However, the amortization schedule of core building systems (which can have useful lives that span multiple decades) is often too long to convince building owners that the investment is worthwhile. Often, an energy efficiency upgrade will pay for itself through energy savings well before an owner has repaid through amortization.

Savings Passthrough

Landlords can choose to avoid amortization and other payback mechanisms in favor of adopting lease language that simply allows the landlord to recoup all operational savings resulting from energy efficiency improvements, up to the point where the landlord has been repaid for their original capital expenditures. While the benefits to the landlord are obvious, there is slight additional risk taken on in case improvements or retrofits fail to meet projected savings.

WHAT DOES A FULL PASS-THROUGH CLAUSE LOOK LIKE?

From a Brandywine Realty Trust case study:

“Capital expenditures and capital repairs and replacements shall be included as Operating Expenses provided such capital repairs or replacements were necessitated by a change in Law occurring after the date of this Lease or were intended to have cost saving benefits over the Term and amortized costs of same over the useful life of the improvement in accordance with generally accepted accounting principles or with respect to cost savings, over the payback period of such improvement.”

Source: [Brandywine Realty Trust Better Buildings Case Study](#)

For certain markets or sectors, incorporating a clause allowing full pass through of energy savings will require a significant departure from business as usual, and thus, could be the source of a lengthy negotiation with tenants. However, other markets and sectors may find that their leases already contain language that allows energy savings from retrofits or new equipment to be recouped by the landlord.

4.2 Energy-Efficient Tenant Buildout

While tenants are often interested in the many benefits of green buildings—improved air quality, lower operational costs, less impact on the environment—it is difficult to stray from business as usual when building out tenant spaces. Furthermore, achieving green certification for a tenant space (such as LEED for Commercial Interiors) can add substantial cost to the buildout.

The tenant reserves the right to design its own space, however, by requiring in the lease or building rules that tenants meet basic sustainability guidelines, landlords can commit tenants to making their spaces as high performing and efficient as core

building spaces. For example, a landlord could require that a buildout meets the requirements of a green certification standard, without specifying the need to officially earn such a certification.

Requiring green tenant spaces protects the interests of landlords who are looking for green designations, such as LEED or ENERGY STAR, for their buildings. If a building is expected to meet a certain level of energy performance, it is in the landlord's interest to prevent tenant spaces from consuming unnecessary amounts of energy.⁵

A landlord has multiple options at his or her disposal when choosing language to green the buildout process. One option is to require that tenant spaces meet existing green standards, such as LEED for Commercial Interiors, even if the tenant is not expected to pay for and officially earn any green designation.⁶ If a landlord does not want to invoke the requirements of green programs, the lease can require that tenants do any of the following: install water-efficient fixtures, limit construction waste, ban space heaters, use only energy-efficient appliances, limit lighting and plug loads to outperform building energy codes, install occupancy sensors, and more.⁷

Limiting Lighting Load

Typically, landlords have little control over the type of lighting installed during tenant buildouts. In most office buildings, 80–90 percent of total floor area is within rentable tenant space. As such, tenant lighting plays a substantial role in the overall building energy consumption. Lowering the allowable lighting load can significantly reduce energy consumption while still giving tenants full control over lighting design and aesthetic.

⁵ It is not just green standards that hold buildings to particular levels of energy performance. Energy performance expectations could come from stakeholders such as investors, asset managers, regulations, or tenants themselves.

⁶ For example, the latest version of LEED for Commercial Interiors calls for all tenant spaces to either outperform building code (ASHRAE 90.1) by three percent, or reduce lighting power density in a space by five percent below code and install 50 percent ENERGY STAR appliances. A landlord could choose to ask for a LEED-CI standard to address these issues, or all three topics could be addressed separately throughout the lease.

⁷ For a prime example of how a landlord could address these issues, see [this Tower Companies green lease implementation model](#).

The lighting load in a typical tenant space is between 1—5 watts per square foot of space. Modern, efficient office lighting loads can be reduced to 0.65 watts per square foot (and are trending lower) without any decrease in the tenant's ability to design or occupy their space comfortably—with the added benefit of reduced electricity bills and lowered maintenance. Through the use of T8 or T5 ceiling lamps, task lighting, and LED fixtures, lighting needs can be met in tenant spaces with installed lighting loads of 0.65 watts per square foot or less.

Substantial savings are assumed through a reduction in lighting loads in tenant spaces. In commercial office buildings, a typical installed lighting load ranges from 1–5 watts per square foot.

ENERGY STAR Appliances

ENERGY STAR-rated appliances save an average of 20 percent over conventional appliances, and can be required by landlords. Some of the simplest language in a green lease includes a requirement for ENERGY STAR-rated equipment.

Requiring efficient appliances results in a win-win for landlords and tenants alike—while costs may be greater at the time of buildout, efficient appliances are often higher in quality and perform better than their standard counterparts. A lease clause requiring ENERGY STAR appliances is unlikely to be contentious: most ENERGY STAR-rated appliances designed for office use have market penetration rates above 50 percent.⁸

Plug Load

In office buildings that have improved the efficiency of their lights and HVAC systems, plug loads can end up representing as much as 50 percent of total building electricity use.⁹

Much like lighting loads, buildings are typically outfitted with systems designed to accommodate unrealistically high plug loads. A generation ago, computers drew about 20 times the power they do today, and offices had more single-function appliances. As a result, many buildings (and the building codes which inform their design) are set up in a manner that discourages energy efficiency. Conventional leases allow

⁸ ENERGY STAR® *Unit Shipment and Market Penetration Report*. EPA ENERGY STAR, 2011.

⁹ Sacramento Municipal Utility District, New Buildings Institute, and Ecova, *Managing Your Office Equipment Plug Load*. 2012.

tenants to set up an installed plug load capacity of around 4 watts per square foot of leased space. However, modern appliance and office setups use far less than this amount. The efficiency of tenant spaces can be improved by allowing half of the traditional tenant plug load, 2 watts per square foot, without any disruption to the tenant experience.

A lower plug load allowance means that the electrical systems and wiring in a tenant space can be appropriately downsized to fit a modern office. The savings from these smaller systems manifest themselves in three main ways: lower upfront costs for smaller equipment, operational savings from any decrease in electricity consumption, and, due to a reduction in heat gain from the smaller system, operational savings from HVAC loads.

In a 2014 study conducted by the National Renewable Energy Laboratory (NREL), a simple application of smart power strips was found to reduce plug loads by 28 percent, with cooling loads in the building reduced by five percent. Overall, whole building energy consumption dropped eight percent.

Table 4. Schedule Timer Control Energy Savings Results by Space Type

Energy System Type	Percent Energy Reduction from Baseline
Plug Loads	28%
Air Conditioning	5%
<i>Whole Building</i>	<i>8%</i>

Figure 2. Energy Savings from Reducing Office Plug Loads (NREL)¹⁰

While on average, plug loads account for around 20 percent of overall energy consumption in office buildings today, efforts to ramp up the efficiency of buildings as well as an increase in the use of plugged-in devices indicate that the proportion of building energy consumption due to plug loads can be expected to rise in the future. As plug loads become a larger aspect of building energy consumption, potential savings are likely to exceed the 8 percent figure found by NREL. Plug load management should be an increasingly important aspect of the tenant buildout. For a conscious landlord, plugs loads can be effectively managed by a simple change to their standard lease.

¹⁰ “Reducing Office Plug Loads through Simple and Inexpensive Advanced Power Strips”, NREL, 2014.

4.3 Submetering

A straightforward way for landlords to make tenants aware of their utility bills and energy consumption is to install submeters in tenant spaces, and to bill tenants according to actual energy use. While submeters have long been a simple way for smart building managers to understand energy use and improve efficiency, they were prohibitively expensive to deploy in typical office buildouts. In the past few years, however, the price to purchase and install submeters has dropped to the point where energy savings from changes in tenant behavior cover the cost of submeters throughout the life of a standard lease. For landlords and utilities that operate energy efficiency programs designed to improve tenant behavior, some of these savings can be captured by simply making the tenant aware of their energy use and having them directly assume the costs of energy consumption. Requiring that tenant spaces install submeters, and determining which party will pay for installation, can be covered within a lease.

WHAT DOES LEASE LANGUAGE ABOUT SUBMETERING LOOK LIKE?

“Landlord is hereby authorized to request and obtain, on behalf of Tenant, Tenant’s electric consumption data from the applicable utility provider.”

“Notwithstanding anything herein to the contrary, if Landlord reasonably determines that Tenant’s use of electricity is excessive, Tenant agrees to pay for the installation of a separate electric meter to measure electrical usage in excess of normal office use and to pay Landlord for all such excess electricity registered in such submeter.”

Source: [Brandywine Realty Trust Better Buildings Case Study](#)

Empirical data on the effect of submeters in tenant spaces is difficult to find, though the studies that have been completed on this subject support that submetering tenant spaces and billing according to actual energy consumption reduces tenant energy consumption. Studies from real estate services firm CBRE and public benefit company NYSEERDA estimate savings from submeters to be around 10–20 percent of tenant energy consumption.¹¹ The U.S. Department of Energy has stated that

¹¹ NYSEERDA, *Submetering for Master-Metered Buildings*. April 2015.

it conservatively assumes submeters can cause a 2 percent reduction in whole-building energy use, which seems to assume closer to 5–10 percent energy savings in tenant spaces.

Conversely, if a tenant is negotiating with a landlord who aspires to have a sustainable portfolio, it would be wise for the tenant to ask for a submeter to be installed at the expense of the landlord. These clauses can go hand in hand with language encouraging both the landlord and tenant to share utility consumption data when relevant.

4.4 Building Commissioning

No matter what stage of life a building and its core equipment is in, taking time to commission, retrocommission, continuously commission, or recommission a building can help reduce energy consumption and operating expenses.

Commissioning is a process where core building systems and operational features are considered holistically to ensure that the building is functioning optimally. Equipment is tested simultaneously to find problems or inefficiencies that arise when core systems, which are often designed independently, operate together. Commissioning processes go beyond the scope of a standard building tune-up and look at why equipment is performing inefficiently rather than how the equipment is running in isolation.

A 2004 Lawrence Berkeley National Lab study showed that retrocommissioning can save \$0.11 to \$0.72 per square foot, while the cost of retrocommissioning ranges from \$0.13 to \$0.45 per square foot.¹²

The commissioning process (or its many variants) is an operating expense, which can be passed on to tenants in spaces that have net leases. While building owners can choose to commission, retrocommission, or recommission their buildings on their own, it is valuable to explicitly state that this process will occur, that the tenant will be billed for a portion of the overall cost, and that energy savings will accrue to both the landlord and tenant. By stating that commissioning will occur in the lease, the tenant gains evidence that the building is being

CBRE, *Building Performance and Occupier Satisfaction Produce Improved Return on Green Building Investments*. October 2011.

¹² *The Cost Effectiveness of Commercial Buildings Commissioning*. Lawrence Berkeley National Lab, 2004.

managed correctly and better understands the operating expenses associated with the building. When applicable, costs should be allocated in a manner similar to those used for split-incentive issues.

Writing commissioning language into the lease provides tenants with some protection from building systems being inefficiently managed. The lease agreement can be cited if there is disagreement over whether building systems need ongoing care. Meanwhile, it provides the landlord more security knowing that tenants must comply with their financial contribution to the commissioning process. Landlords also retain a stronger right to enter tenant spaces in cases where access is needed for auditing purposes. Lease language requiring a form of commissioning provides additional security that the process will be completed without complaint or holdup, and that building systems will operate more efficiently.

5. Financial Value of Energy Savings

While a green lease can directly lead to energy savings, and an increase in net operating income, much of the value of a green lease is derived from the increase in real estate value an owner can recoup from a more efficient building. While this paper will not be exploring this concept in depth, it is important to note that much of the value of an efficient building comes from the proper appraisal and sale of the building, considering all of its green and energy-efficient features.

Numerous studies have shown that green buildings command rental premiums in the market. In addition to direct savings from reduced utility bills, the increased financial value of efficient buildings provides a larger, and more lucrative, opportunity for building owners to upgrade their buildings and adopt green leases.

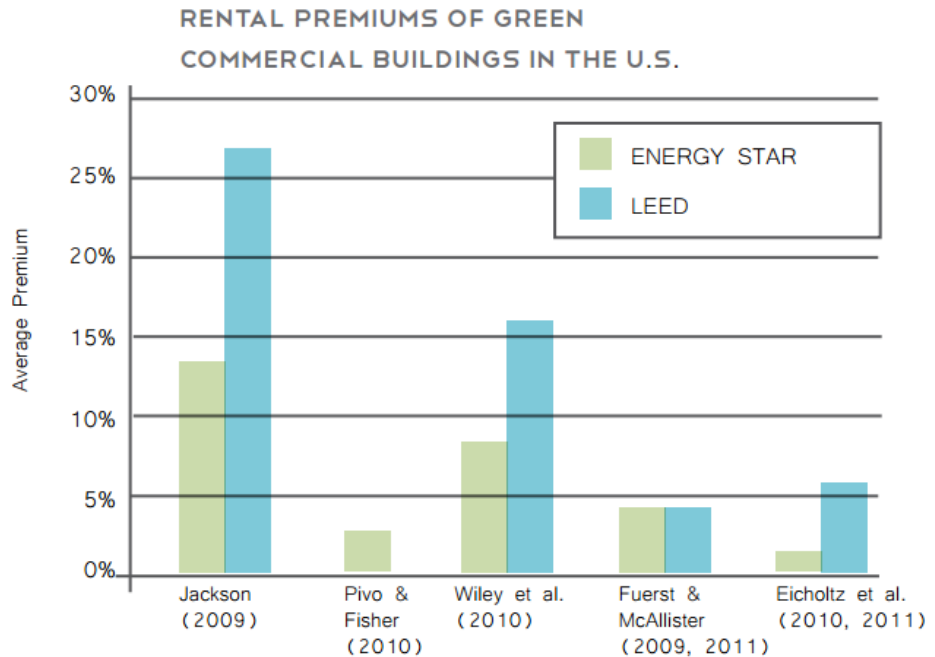


Figure 3. Rental Premiums of Green Commercial Buildings in the U.S.¹³

6. Corporate Sustainability and Green Certification

Green leases can help support corporate sustainability objectives, as well as enhance brand image for both the landlord and the tenant. For companies with corporate social responsibility programs, adopting green leases across their portfolio is a simple way to remove barriers that can arise when trying to achieve reductions in energy consumption, water use, or greenhouse gas emissions.

A green lease can also facilitate obtaining other green certifications. Green clauses share similar concepts with popular green rating systems such as LEED and ENERGY STAR, and can help expedite the process of obtaining the credits needed for these certifications.

Meaghan Farrell, Vice President of Strategic Consulting at Jones Lang LaSalle (JLL), believes that a green lease is also a “creative way to differentiate your organization as having made a positive commitment not only to the environment, but the

¹³ Leipziger, *Rental Premiums of Green Commercial Buildings in the US*, IMT, 2011.

viability of your company.”¹⁴ Green leasing is yet to be widely adopted among building owners, despite its potential benefits. One who adopts these practices may be viewed as a leader in the growing, and profitable, green building market.

6.1 Green Lease Leaders

Green leases are already being put into practice in the U.S. and abroad by notable forward-thinking players in commercial real estate. In 2014, the Green Lease Leaders program was launched in order to recognize landlords, tenants, and brokers who had incorporated energy efficiency and sustainability principles into their lease clauses.¹⁵ Ultimately, 14 companies that collectively own or manage over 400 million square feet of commercial space were recognized as Green Lease Leaders. This program, and the 14 inaugural recipients of the award, is proving that green leasing is an attainable and growing practice that can lead to improved building performance.

7. Conclusion

If every leased office building in the United States were to implement green leases, 77–152 million MMBTU of energy could be saved annually, representing \$1.7 billion to \$3.3 billion dollars in annual utility savings. These savings can be unlocked through the process of signing an energy-aligned lease and engaging in reasonable energy efficiency measures. Landlords and tenants alike would get the added benefit of having an easier path towards making more substantial energy retrofits and improvements to their buildings—once an equitable shared cost structure is established. Having satisfied tenants and a positive landlord-tenant relationship stands to add further value to implementing these relatively simple clauses into leases. Tenants stand much to gain from higher satisfaction and productivity in their spaces, while landlords benefit from higher building valuation and improved cash flow.

¹⁴ Farrell, Meaghan. "10 Reasons Green Leases Create Value for Tenants and Landlords," GreenBiz.com, May 29, 2013.

¹⁵ The Green Lease Leaders program is co-administered by the US Department of Energy and the Institute for Market Transformation. For more information, visit www.greenleaseleaders.com.

Appendix A: Tables and Results

Table 3 – Potential Savings Catalyzed by Implementing Energy Aligned Leases

Green Lease Savings	Low Savings Case	High Savings Case
Tenant Space Energy Savings	6.9%	12.5%
Common Area Energy Savings	1.5%	4.0%
Core System Energy Savings	3.1%	5.8%
Potential Energy Savings (market-wide)	11.5%	22.3%

Table 4 - Annual Energy Savings Potential in U.S. Office Buildings Catalyzed by Energy Aligned Leases

Measure	Low Savings Potential: U.S. Office Buildings (USD, Nominal)	High Savings Potential: U.S. Office Buildings (USD, Nominal)
Savings (\$)	\$1,690,000,000	\$3,290,000,000
Savings (\$/ft ²)	\$0.26	\$0.51
Energy (MMBTU)	77,800,000	152,000,000
Savings (MMBTU/ft²)	0.012	0.024

Table 3 - Electricity Savings Potential Catalyzed by Green Leases

	Leased Office Space (est, million ft ²)	Electricity Consumption Intensity (kWh/ft ²)	2014 Electricity Commercial Prices (cents/kWh)	Electricity Consumed in Leased Space (kWh)	Expenditures in Leased Space (\$)	Annual Low Savings Potential (Office, Electricity)	Annual High Savings Potential (Office, Electricity)
U.S. Total	6,400	14.1	10.74	90,200,000,000	\$9,690,000,000	\$1,110,000,000	\$2,160,000,000

Table 4 - Natural Gas Savings Potential Catalyzed by Green Leases

	Leased Office Space (est, million ft ²)	Natural Gas Consumption Intensity (therms/ft ²)	Commercial Price (\$/therm)	Consumption in Leased Space (MMBTU)	Expenditures in Leased Space (\$)	Annual Low Savings Potential (Office, NatGas)	Annual High Savings Potential (Office, NatGas)
U.S. Total	6,400	.430	.884	275,234,400	\$2,430,000,000	\$278,000,000	\$543,000,000

Table 5 - Natural Gas Savings Potential Catalyzed by Green Leases

	Leased Office Space (est, million ft ²)	Fuel Oil Consumption Intensity (gallons/ft ²)	Heating Oil Commercial Prices (cents/gallon)	Consumption in Leased Space (MMBTU)	Expenditures in Leased Space (\$)	Annual Low Savings Potential (Office, Oil)	Annual High Savings Potential (Office, Oil)
U.S. Total	6,400	0.11	373.4	97,900,000	\$2,630,000,000	\$300,000,000	\$587,000,000

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About the Institute for Market Transformation (IMT)

The Institute for Market Transformation (IMT) is a Washington, DC-based nonprofit organization promoting energy efficiency, green building, and environmental protection in the United States and abroad. IMT's work addresses market failures that inhibit investment in energy efficiency and sustainability in the building sector. For more information, visit imt.org.

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