Cracking the Golden Egg

Capitalizing on Energy Efficiency Investments in Texas and Oklahoma's Leased Commercial Buildings

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Table of Contents

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Executive Summary

This report aims to address why high value energy efficiency investments in leased commercial buildings lag behind their owner-occupied counterparts and how overcome that trend in the South-central region. This difference is often attributed to lease structures that split the benefits of energy efficiency projects, known as split-incentives, explained in depth on pages two and three of this report. While split-incentives are a barrier to energy efficiency investments, the largest challenge is ensuring that energy efficiency investment decisions include all of the impacts of efficiency projects beyond the utility savings. These additional values include increasing rental rates, reducing tenant turnover, increasing occupant productivity and adding value to the real property asset.

The direct utility savings[1] are tied to the split-incentives present in leases; however the overall investment values, unique to leased commercial buildings, could produce higher investment returns than previously thought. By increasing market awareness of the economic value of energy efficiency, developing tools to bypass lease models that split the project's benefits and delivering these resources with a tailored message at a local level, these buildings could leverage their energy efficiency improvements as an economic resource.

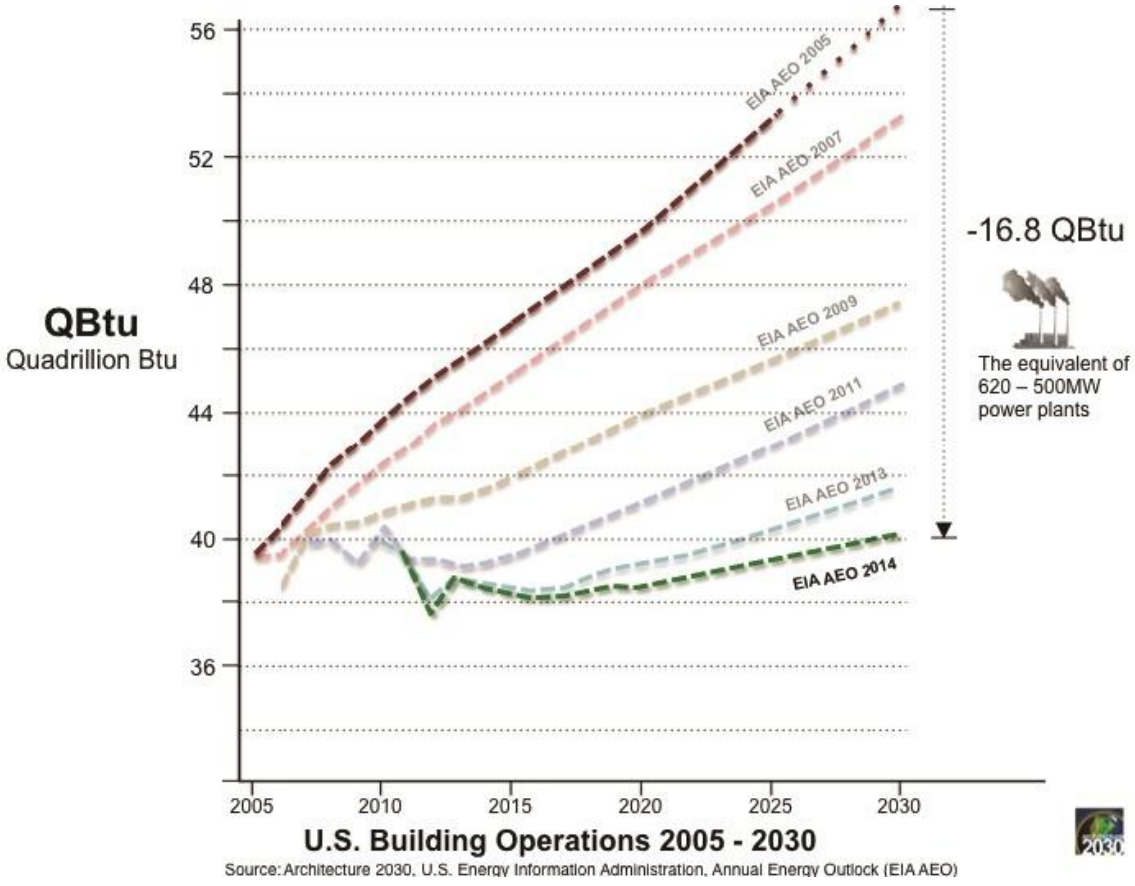
The south-central region, comprised of Texas and Oklahoma, offers unique opportunities and challenges related to energy efficiency investments in leased commercial real estate (LCRE). The major real estate markets in the region constitute nearly 2.5 billion square feet of space (office, retail and industrial/warehouse) and $2.2 billion in annual utility costs. This market scale, coupled with positive commercial real estate trends give investments in energy efficiency the potential for positive economic impacts beyond the direct energy savings. In order to incorporate these considerations into the standard business practices of the lease commercial building owners in the south-central region, a targeted local approach is needed to support programs that unlock the economic potential of these investments.

Specific considerations for this region include high occupancy rates, relatively low energy costs and low motivations to deviate from traditional leasing practices. Add to that, generally held belief systems that do not associate energy efficiency investments with economic value and the challenge grows. Systemic market shifts will only happen once the local LCRE industry participants begin to incorporate building energy efficiency into their standard value metrics. This will involve the creation of educational programs for local LCRE professionals, finance mechanisms (e.g., Property Assessed Clean Energy loans) that bypass existing lease barriers and awareness campaigns for local business communities regarding the value of these investments.

1. Similar challenges and economic benefits exist for water and solid waste efficiency improvements.

How Split Benefits Impact Energy Efficiency Investments

According to the Energy Information Agency's (IEA) annual building energy use projections from 2005 through 2014 (compiled in the graph below), the 2005 building energy consumption was projected to increase by nearly 50% by 2030. These projections have consistently decreased in the years since and nearly leveled off in 2014. This shift in trajectory can be attributed to a number of factors including improvements in building codes for new construction and renovations, utility incentive programs, financing mechanisms for project implementation and backbone organizations like regional energy efficiency offices implementing local energy efficiency initiatives. Beyond these gains, the report "Measuring the Impact of Green Leases in Office Buildings," by Andrew Feierman, illustrates that split incentives have resulted in delayed efficiency investments in LCRE office buildings and that tapping into these projects has the potential to continue the trend of reducing in energy consumption in buildings.



The delay in investment in these projects by LCRE building owners and tenants in the south-central region is due, in large part, to lease provisions that separate the costs and benefits of energy efficiency projects between both parties, known as split-incentives. Split-incentives impact both owners and tenants and result in both parties missing out on

Barriers to Energy Efficiency Investments in Leased Commercial Buildings

- Standard lease structures divide costs and savings between owners and tenants
- Lease terms and holding periods shorter than project paybacks
- Low available credit for owners, investors and tenants
- Traditional project financial reports miss the unique owner/tenant monetary impacts
- Low awareness of potential cost savings and ancillary benefits
- Possible disruption of tenant spaces for energy efficiency upgrades

high value investment opportunities and reduces their competitiveness related to efficient management of operating costs. From the owner's perspective, capital improvement costs and risks are their responsibility while the utility cost savings flow to the tenants through various 'pass through' lease clauses. From the tenant's perspective, they have few ways to reduce their operational utility costs because the building owner controls how the facility is operated and upgraded, (i.e. maintenance procedures, temperature set points, capital improvement priorities). Both of these scenarios have resulted in a LCRE market structure that is failing to capitalize on the energy cost reductions possible in their buildings.

Ironically, the pass-through clauses that are splitting the costs and benefits of energy savings projects were developed in response to the OPEC energy crisis of the 1970's. Prior to this period, "gross leases" were the most prevalent lease model in which costs were based on an all-in dollar amount per square foot and all of the owner's costs and risks were rolled into that single price. When energy prices rose significantly during the crisis, owners bore the brunt of runaway utility costs, having no way to 'pass through' or share the burden with tenants.

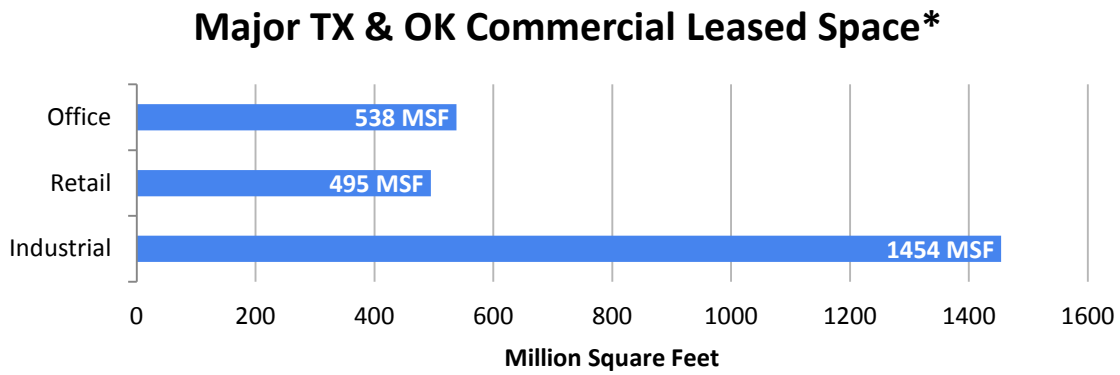
In response, the "triple net lease" structure or "modified gross lease" was developed, where all variable costs (taxes, lawn care, utility costs etc.) are passed through directly to tenants. Unfortunately, as noted above, this has had the unintended consequence of locking away the economic value of energy efficiency cost savings. Given the lack of acute market forces on the scale of the OPEC energy crisis, a targeted and strategic approach is needed to allow the Texas and Oklahoma market participants to realize the mutual benefits of the energy efficiency investments available in leased commercial buildings.

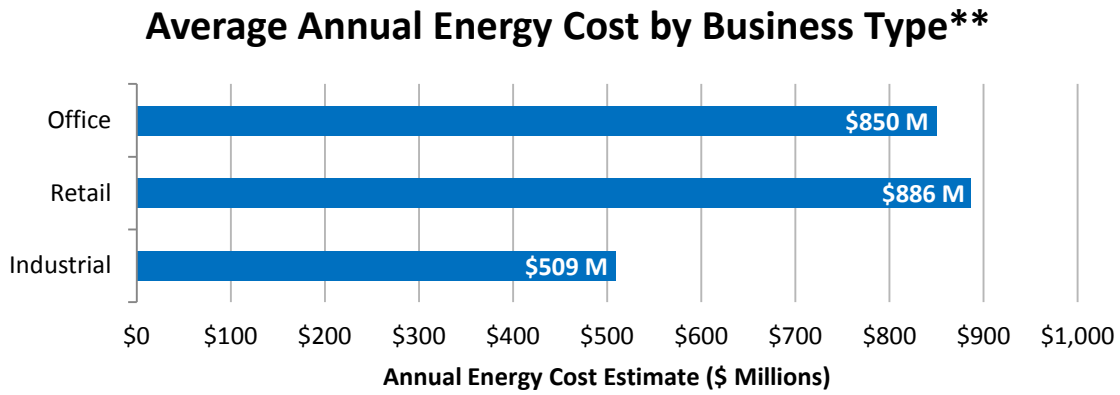
Energy Efficiency Impacts in the Texas and Oklahoma Leased Commercial Real Estate Markets

Determining the market structure of the south-central region's leased commercial building sector is integral to identifying strategies to increase the investment in energy efficiency projects. In order to identify the existing market size, we compiled commercial real estate market trends for the major real estate markets of Austin, Dallas/Fort Worth, El Paso, Houston, Oklahoma City, San Antonio and Tulsa. This data was used in conjunction with the Energy Information Agency's Commercial Buildings Energy Consumption Survey (CBECS) data for 2003, to estimate the energy use of this building stock. These calculations are intended to be a starting point for further investigation. The tables on page 5 summarize the leased commercial real estate major markets' size and estimated utility expenditure in the U.S. south-central region.

This market survey, conducted in July of 2015, identified nearly 2.5 billion square feet of commercial leased space (office, retail/mall, and industrial/warehouse) in the major regional LCRE markets. The total energy costs for these facilities is estimated at over $2.2 billion annually based on the 2003 Commercial Building Energy Consumption Survey by building type in this region. With building and business owners in a constant struggle to drive value to their respective bottom lines, investing energy efficiency projects could have a significant impact on both parties. As stated above, unlocking the total savings potential of energy efficiency improvements in a market of this size represents a significant economic impact not only from the direct utility savings, but also from impacts to real property asset values, maintenance requirements and tenant comfort. Further analysis is required to determine estimated savings by property type, facility size, fuel type, and building system; however the current scale of commercial leased building markets along with the projected growth in the region illustrate the potential for energy efficiency drive positive economic impacts in the region.

While the aggregate savings in the overall markets are promising, each market segment is unique and will require a tailored approach in order to affect change and reduce energy consumption and costs. Despite the fact that industrial spaces make up a majority of the leased square footage, regionally low energy prices and low energy intensity results in low annual energy costs. Conversely, the retail sector representing the smallest amount of leased building space, has the highest annual energy cost. Unfortunately this does not necessarily mean that there is any more or less savings potential in one sector than the other.





* Commercial leased market data compiled for Austin, Dallas/Fort Worth, El Paso, Houston, Oklahoma City, San Antonio and Tulsa as of July of 2015.

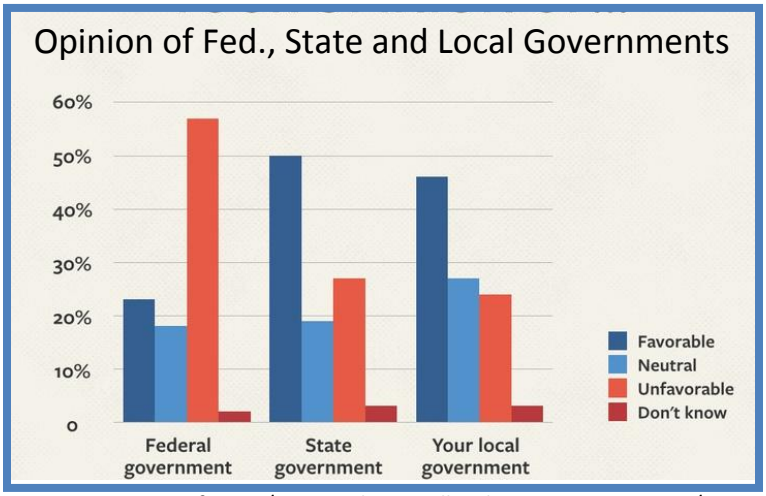
**Energy use estimates were derived from 2003 CBECs data by region and building type, the retail sector includes malls and industrial sector includes warehouses.

Tailoring Solutions for the Texas and Oklahoma Markets

The direct and acute pain of sky rocketing energy prices during the OPEC energy crisis resulted in a swift market shift to “triple net” pass through lease structures. This market shift had the unintended consequence of removing the benefits of energy efficiency projects from all parties involved with leased facilities.

In the current market, there is little acute pain and even less awareness of the amount and value of wasted energy costs to both owners and tenants. This lack of information, along with booming commercial real estate markets and relatively low energy prices makes a fast market response to this value much more challenging. In order to convey the missed opportunities to the Texas and Oklahoma markets, solutions and interventions must be targeted to both parties, impactful, and focus on the value of wasted energy in these facilities.

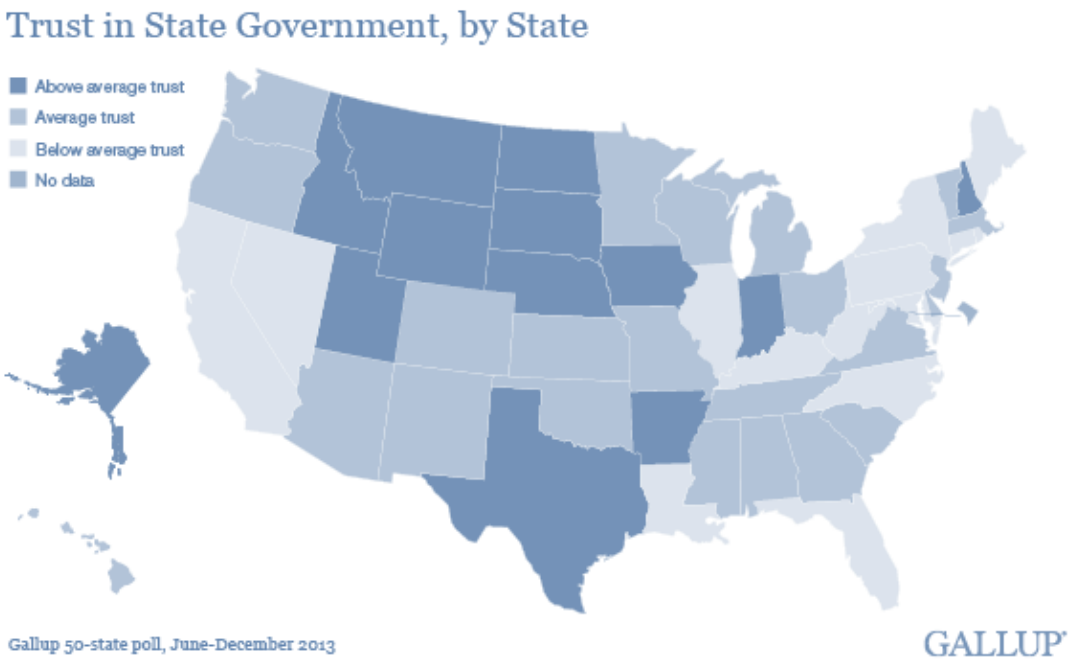
Successful solutions in this region will be ones that tailor messages to the local audience's values. As the Gallup 2014 State of the States survey showed, both Texas and Oklahoma tend towards more conservative political values as compared to the national average. In addition, the February, 2015 University or Texas and Texas Tribune joint poll showed that people residing in Texas have an overwhelmingly unfavorable opinion of the federal government while State and Local governments are viewed much more favorably. This and other studies point to some important beliefs and attitudes found in the Texas and Oklahoma markets, namely: a general distrust of "green" or "environmental" initiatives (Mooney 2015), a negative opinion of federal-level programs, and generally conservative political leanings in both states.



Source: University of Texas/Texas Tribune Poll, February 2015 MOE = +/- 2.83%

Multiple behavioral studies on energy efficiency communications campaigns and market interventions show varying successes that can be linked to the social and political attitudes of the participants. Messages that highlight cost savings and "avoiding waste" as opposed to carbon, climate considerations or "saving energy" were much more successful on conservative populations. Beyond local belief systems, there are universal human psychological preferences to be aware of also. For example, the "status quo bias," where an individual or organization tends to avoid change, even when that change could have a positive impact because of the uncertainty and fear of what the change might impact.

Strategically leveraging specific local social and psychological nuances will be key for real market transformation in leased commercial buildings. This includes focusing on the pain caused by "wasted energy" and the resulting "lost revenue or reduced asset value" and how it could be recovered to benefit business and building owners alike. This will likely take the form of a multi pronged approach through 1) exposing traditional market influencers (i.e. building owners, property managers, real estate brokers, appraiser, loan officers) to targeted messaging and 2) using local entities such as Regional Energy Efficiency Organizations (REEOs) that have relationships with multiple local governmental entities that can link the programs to state and local entities. While national resources and campaigns have significant value and serve as great resources, translating or transferring those initiatives into locally accepted messages will produce more effective programs.



One approach to accomplish this, is to shift national energy efficiency educational campaigns towards local dissemination and administration models. This could be done for both the federally supported Green Lease Library, and the national Building Owner's and Manager's Association's (BOMA) Building Energy Efficiency Program (BEEP). The messages and best practices promoted by these national organizations could be tailored to local preferences and delivered by local peer groups in such a way that they would be more likely to be accepted and adopted into business practices.

Another more direct program with significant, long term, market transformation potential is the use of locally administered Property Assessed Clean Energy (PACE) loan programs. These programs offer energy and water efficiency financing mechanisms that are tied to property tax assessments. The PACE loan program bypasses most split benefit lease provisions because the cost of the improvements can be amortized and passed through to the tenant as a tax cost instead of a capital expense borne only by the owner. This project finance option is administered by local governments although it can use private loan financing which provides a level of market credibility to these projects. Additionally, as these programs are adopted by local governments throughout the region, they offer a way to transform the real estate transaction process into a new status quo model that integrates the broker, contractor, and finance professional's standard offerings, and adds value to their commercial real estate transactions.

Transforming "Business as Usual" to Capitalize on Energy Efficiency

So long as triple net leases are the dominant lease model, split-incentives will continue to hinder energy efficiency investments in the LCRE markets. If businesses had a sudden cost increases of $295 to $497 million dollars (the estimated utility cost savings available in these major CRE markets) business practices would be developed swiftly to respond. The challenges in Texas and Oklahoma are fairly universal; however the motivations and values of the local market participants are unique. With this in mind, we have identified integrated strategies to capitalize the economic value available in the Texas and Oklahoma commercial real estate markets.

Because energy costs are typically buried in the operational expenses of businesses and are considered static, increasing the overall awareness of the economic opportunities present in optimizing this expense is imperative. The initiatives described below offer targeted solutions for the Texas and Oklahoma markets that aim to impact the awareness of the holistic value of energy efficiency for owners and tenants, methods to modify or bypass lease provisions that split the benefits of energy efficiency investments, and the overall impact these projects could have for the region.

Triple Net Plus Energy (NNN+E): Transforming Lease Practices

As previously discussed, market participants in the south-central region tend to be politically conservative and often have distrust of "green or environmental" national or federal programs. However, there is evidence that when products are presented with neutral terminology there is a universal desire to save money and reduce waste (Gromet, 2012). It is our recommendation that lease modification initiatives in Texas and Oklahoma use "Triple Net plus Energy" or "NNN+E" terminology as opposed to "Green Leasing." The same research showed conservatives tend to be more motivated by preventing "waste" than "saving" energy. As the attached case study highlights the use of the triple net plus energy model has been used for energy aligned leasing practices by a management firm in Houston, TX. Messaging in this region should highlight ways that modifying leases and investing in energy efficiency projects prevent wasting hard earned revenue, and highlight that the pain of wasting money is significant enough to supersede the status quo bias towards traditional lease models. While the Green Leasing library is an invaluable resource for the industry, having Regional Energy Efficiency Organizations or other local partners modify key documents and/or case studies with messages tailored to this market segment will result in a more successful approach for the south-central region markets.

Property Assessed Clean Energy (PACE) Financing to Bypass Split Benefits

PACE loans are one of the most promising, immediate, solutions to existing leases with split-incentive triple net provisions. They offer building owners the ability to finance

energy and water efficiency projects beyond the direct payback period so that the project can produce positive cash flow immediately. PACE financed projects require no upfront capital costs as all development, engineering, design, permitting, and related soft costs can be rolled into the financing. This means that projects are not delayed for fund availability and do not impact other budgetary requirements. This changes the discussion and financial impacts as cash flow and available capital are often the most important consideration for both the owner and lenders.

PACE financing offers one of the most promising ways to bypass lease provisions that split the benefits of energy efficiency projects. Simply stated, PACE loans are assigned to the property (not the property owner), and as such, are billed as a tax assessment. This allows the project payments to be passed through to tenants as operational costs in the same way taxes are passed through in most standard triple net lease models. This way the owner benefits from facility upgrades and increased property assets and the tenant benefits from reduced utility costs beyond the finance payments. In addition to bypassing existing lease models which split benefits of efficiency projects, PACE programs are locally administered and serviced by private lenders. This adds further comfort in that the program is local and the private lenders indicate a free market value for these projects.

While PACE financing is authorized in both states, programs have not yet been implemented in all major markets. SPEER is actively working to support PACE financing due to its potential to serve the LCRE market participants and provide financial mechanisms to make energy efficiency improvements accessible in the region. Currently, Travis County (Austin) has the only established PACE program; however several other cities or counties are working to set up programs and are expected to come on line in the near future.

Highlighting Financial and Ancillary Impacts for Building Owners and Tenants

Leased commercial building owners and tenants have a unique set of monetary and ancillary benefits. For the building owner, increased per-square-foot lease rates could have a much bigger financial impact than the direct energy savings. Likewise, being located in an Energy Star or 2030 District Member building might add value to a tenant's business model, marketing and/or employee recruitment, retention and productivity. For LCRE owners, financial considerations include impacts to cash flow, net operating income, capitalization rates, property value, credit availability/ratings, property salability and the property's ability to achieve marketable energy efficiency designations. For tenants, considerations should include how the project impacts their cash flow, operating expenses, comfort as well as considerations related to the recruitment, retention and productivity gains for their staff.

An additional significant difference between owner-occupied and leased commercial buildings is the length of occupancy or ownership. Often LCRE owners or investors plan to hold a facility for less than five years, opting to refinance or sell the property within that period. Similarly, tenants rarely have lease terms longer than 60 months. For both parties, project evaluations and financial impacts must be beneficial within that time frame. This is why PACE financing is promising because it allows for zero upfront cost immediate cash flow project implementation.

Incorporating the Value of Energy Efficiency Building Designations

The results of a recent in-depth study suggest that an otherwise identical commercial building with an Energy Star certification will rent for about 3 percent more per square foot; the difference in effective rent is estimated to be about 7 percent and the increment to the selling price may be as much as 16 percent (Eichholtz, Kok, Quigley, 2010). Tenants benefit from increased worker satisfaction as studies show that Leadership in Energy and Environmental Design (LEED) certified buildings are demonstrating increased recruitment retention rates, and productivity benefits for employers (Watson, 2011). Adding the inherent best practices originally required as part of achieving these green certifications results in a win-win for owners and tenants who own and occupy high-value, high-performance facilities.

Highlighting the unique monetary value of high performance building designations has the potential to move the market. Texas has one of the highest concentrations of Energy Star office buildings (5%) showing that this solution is already at play in the Texas office building market. Oklahoma has a much lower market penetration (0-1%) of Energy Star designated buildings. Both states could benefit from increased awareness about the monetary value of building designation programs.

Data Access, Benchmarking and Disclosure Ordinances

Access to whole building data is a current challenge in both Texas and Oklahoma, which can largely be attributed to energy data ownership, privacy laws and the metering structure of leased commercial buildings. Some facilities have a central meter and all the tenants share energy costs on a square foot basis; but others, like small retail centers, consist of separate tenant spaces with individual meters. In these facilities, the building owner does not have a way to discern the total building energy profile. This does not allow for owners or tenants to benchmark their facilities or identify energy waste so long as neither party has access to meaningful and complete data; it will be difficult to strategically manage energy costs. Lease provisions which require sharing energy data between the tenant and owner will help, but are limited by the rate of lease renewals and new tenant lease negotiations.

Some communities have implemented benchmarking disclosure ordinances as a way to drive awareness and highlight the value of energy efficient buildings. Currently, the City of Austin is the only market in the Texas and Oklahoma region with an active energy disclosure ordinance. The City of Houston is investigating if and how an energy benchmarking and disclosure ordinance would impact their commercial building inventory. In "early adopter" cities including Austin, New York City, San Francisco, and Seattle, findings show disclosure laws have a statistically significant effect on reducing utility expenditures. All else being equal, buildings in areas with energy disclosure ordinances benefit from approximately 2 percent lower utility costs (Palmer, Walls, 2014), although most of these programs are in their early stages making the overall implications hard to ascertain. What is important to note is the way that these ordinances connect owners and tenants with the energy consumption metrics that allow for meaningful actions aimed at controlling the usage and cost of energy resources.

A final implication of data disclosure ordinances is how they can be used as a direct communication and messaging touch point for all affected commercial real estate owners and property managers within the ordinance territory. Specifically developing education and awareness campaigns for efficiency projects will help owners and managers not only comply with the disclosure requirements but will enable them to realize meaningful cost reductions from these efforts. A report by Karen Palmer and Margaret Walls', "Can Benchmarking and Disclosure Laws Provide Incentives for Energy Efficiency Improvements in Commercial Buildings?" shows, data disclosure offers direct energy cost savings and highlights the value and available resources wasted through inefficient building systems.

Educational Strategies for Commercial Real Estate Professionals

Most people would not perform their own surgery or cut their own hair. In the same way, commercial real estate professionals offer expert advice to those involved with the Commercial real estate industry. These professionals have specializations in a wide range of services, and include but are not limited to: commercial real estate brokers, property managers, real property appraisers, loan officers, service providers, contractors, and energy service companies (ESCOs). All of these professional service areas have the potential to shift market practices significantly. Incorporating the economics of energy efficiency into the certification process for these various professions will be key in illustrating the total value of energy efficiency in real estate transactions. Nearly all of the initiatives outlined above could be championed by industry professionals as a way to add value to their services and client's bottom line. This effort can be initiated by: 1) integrating these best practices and programs into certification curriculums and 2) targeted continuing education campaigns to established practitioners.

The two industries that have the largest impact on increasing energy efficiency awareness in buildings are the commercial real estate brokers and professional property managers. Brokers represent both building owners and tenants for transactions ranging from purchasing and selling, or lease negotiations for both parties to connections to finance professionals. Commercial real estate brokers (and real property appraisers) usually provide guidance on property values and should be trained to include considerations of energy efficiency improvements as a basis for value and negotiation in all transactions. Likewise, professional property management firms serve as the owner's eyes and ears in their facility, managing building operations and coordinating maintenance and repair activities. Savvy property managers can help identify and advocate for energy efficiency solutions that bring hard and soft values to both owners and tenants.

The Way Ahead: Strategies for Texas and Oklahoma

With the estimated economic benefits of energy efficiency approaching half a billion dollars, recovering the wasted revenue could increase the economic competitiveness of the leased commercial real estate markets in the south-central region. Unfortunately, this resource has been buried by conflicting lease provisions that prevent both owners and tenants from directing this lost revenue back to their respective bottom lines and thus the economy. Add to that, the potential job creation that would result from large scale investments in energy efficiency projects and the benefits of energy efficiency investments grow for the region.

As both Texas and Oklahoma grapple with an energy industry in flux, it is more important to use energy resources wisely. For business owners, this means putting an end to wasting hard earned revenue on energy costs that their competitors in owner-occupied facilities are able to manage and invest in directly. For leased commercial building owners this means benefiting from high value facility upgrades paid for with funds that would otherwise we wasted on excess energy consumption. Failure recover this lost revenue is unacceptable in an increasingly competitive global economy. Both Texas and Oklahoma traditionally derive a large portion of their economic activity from energy innovation, which should lend added impetus to cash in on these pockets of energy reserves.

For the major Texas and Oklahoma leased CRE markets, given the absence of explicit external pain like the OPEC energy crisis, local, targeted and customized market intervention systems are needed to open this investment opportunity in building efficiency. Successful energy efficiency projects will be driven by: 1) creating market wide awareness of the scale and value of revenue wasted in inefficient buildings, 2) transforming or bypassing lease provisions that divide project benefits and 3) delivering

these solutions at a local level with tailored, market specific messaging. A large scale market shift that recovers these wasted resources will transform the leased CRE industry into a more nimble and efficient business model and give the south-central leased commercial real estate markets a competitive edge in a diversifying global economy.

High Rise Office Building

Houston, Texas

Building Size:
Office: 1,172,000 SF
Retail: 1,000 SF

Typical Floor Size:
25,000 RSF

Number of Floors:
50

Year Built:
1980

Building Type:
Office, high rise

Neighborhood:
Downtown core

Lease Structure:
Triple Net + Energy

Metering System:
Sub meter tenant electrical panels

Sub meter air handlers for heating and cooling allocations

Per square foot calculation for common areas

Case Study:
Triple Net Plus Energy & Tenant Sub Meters

Scenario:
Utility costs in leased commercial spaces are most often billed by a blended per square foot cost. This method of billing results in tenants who have little motivation to conserve energy since there is no direct connection between their actual energy use and the resulting cost. Additionally, high energy consuming tenants are subsidized by lower consuming tenants as the building's energy consumption is divided equally among tenants.

The owner of a downtown high rise office building in Houston, Texas has initiated a lease model and metering system aimed at connecting tenants directly with their energy consumption and costs. They have found that tenants who are billed for their direct energy consumption tend to choose energy efficient systems during space build out and also operate their spaces more efficiently during occupancy.

Solution:
In order to connect individual tenants with their direct energy costs, the building owner instituted a "triple net plus energy" (NNN+E) lease model. The owner included a clause in the leases that states at the owner's discretion, tenant spaces may be sub metered and billed according to actual consumption. This system includes air handler metering for cooling and heating loads and a per square foot calculation for common area energy costs.

Benefits:
- Removes energy costs from operating expenses and increases the building's net operating income for the property owner.
- Individually metering units use less energy than those with square foot allocations. This reduces demand on building systems and extends maintenance cycles and equipment life.
- Unit sub metering serves as a premium service in the market. Tenants in other buildings in this owner's portfolio regularly request unit level energy consumption data in order to manage costs.

Challenges:
- Electrical distribution systems are not wired for individual spaces and require multiple meters in various electrical distrobution panels.
- There are additional costs when sub metering tenant spaces.
- A data management system is required to compile meter data and allocate the costs to tenants.

SPEER
The South-central Partnership for Energy Efficiency as a Resource

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