



The influence of energy considerations on decision making by institutional real estate owners in the U.S

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ABSTRACT

Large bodies of literature investigate the energy and resource impact of green buildings on consumers, environment, rent and society. However, little research exists that examines the habits and decision-making preferences of owners who operate and invest in these buildings. Industry interviews with senior-level representatives of U.S.-based institutional real estate owners (e.g. REITs, Pension Funds, Opportunity Funds, and Investment Managers) were conducted to assess energy reporting, data tracking, labeling preferences and upgrade decision making. The interviews revealed that EnergyStar and GRESB are primary reporting outlets, with LEED also relevant. Energy tracking mechanisms were quite disparate, ranging from custom built systems, EnergyStar Manager, third party providers or limited tracking. Upgrades were primarily driven by cost-benefit analysis and not sustainability-related motivations. This research shows that energy efficiency and tracking mechanisms have become the norm for institutional owners and investors.

1. Introduction

Institutional building owners represent one of the largest blocks of building stock ownership, and their energy-related decisions have large cumulative effects on global energy consumption [28]. They are an important class of property owners representing over USD \$20 Trillion investable dollars [59], and significantly influence both the domestic U.S. and global markets. Incentives promote green buildings [36], which affects both capital investment and operational decisions in free capital markets. Gaining a deeper understanding of the attitudes, motivations and incentives that influence the ways that institutional real estate owners consider energy consumption will help understand drivers of organizational change [1,25]. The focus of this research therefore investigates U.S. institutional real estate investors' motivations for pursuing energy-related strategies. While the focus on U.S.-based institutional investors may be a limiting factor for global generalization, the scale and scope of the U.S. market, coupled with its impact on global markets, make the research findings meaningful.

A few studies have previously been conducted that aim at offering insight into the drivers and motivations of institutional investors. Pivo

[38] used a Delphi approach to gain insight into the Responsible Property Investing practices of institutional owners. However, changing attitudes and realities around sustainable real estate and energy infrastructure investment post global financial crisis (GFC) necessitates an update to his study. Christensen (2012) conducted a study of public and private investors, property developers, property management and corporate tenants to investigate decision making strategies related to implementing sustainability strategies in property after the GFC. The study focused more broadly on the drivers for pursuing sustainability and what sustainability attributes influence decision making, whereas this study specifically investigates energy-related decision-making strategies of institutional investors.

Significant bodies of research have emerged on the effect of private sector (LEED, BREAMM) and public sector (EnergyStar, Energy Performance Certificates, NABERS) eco-labels on energy consumption, financial returns, and environmental social governance (ESG). Braun, Cajias and Hohenstatt [2] find that societal awareness, reflected through google searches, impacts overall adoption of eco-labels by organizations. Eco-labeling and energy rating schemes can create awareness about consumption practices in buildings, and provide an

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incentive for owners to conduct energy reducing activities. This research extends recent European studies investigating property owners' perception of value creation from environmental certification of buildings (e.g. [4–6]), and offers insight into the motivations of U.S. institutional investors through a qualitative exploration of their energy related eco-label practices.

In contrast to Europe and Australia, the United States has few governmental requirements mandating eco-labels, and most of these are at the local level² (Eisenberg, 2016). For U.S. owner-investors, mandatory energy disclosure requirements lag behind their developed world counterparts. At the time of this writing, less than 1% of municipalities in the United States have energy disclosure requirements [10]. In these locations, energy disclosures are primarily linked to the EnergyStar program, and predominately apply to commercial building stock. They are utilized in ways similar to the mandatory EPCs in the EU [20,27] or NABERS in Australia [22,23]. Eco-labels in this context act as proxies for greenhouse gas (GHG) emissions abatement which are a component of many of these policy tools. The roll-out of energy disclosure programs is still in its infancy in the U.S., and little research has been conducted to assess and understand the impact of these programs on energy efficiency or on the uptake of energy-efficiency measures for effected real estate. However, research investigating the impact of European energy-related regulatory policies demonstrate the potential for such policies to improve energy efficiency in buildings [48]. Without regulatory mandates in the U.S., the adoption of eco-labels in the U.S. may instead be driven by potential green premiums, potential costs savings, and environmental social governance (ESG) concerns.

The potential for green premiums continues to exist, albeit in a changing state of likelihood. When eco-labeled buildings entered the market in the early 2000's a number of studies found green premiums associated with obtainment of these eco-labels [18,19,47,60]. An ensuing body of research argued that as technological and price diffusion occurs, those premiums may not be persistent over time and property characteristics [8,12,14,24,30,39,42,44]. This has created an environment with less certain rental or sales-driven returns to owners and investors for energy and eco-label investments, possibly impacting whether green premiums remain a significant driver for pursuing eco-labeling and energy ratings.

Instead of top-line increases in revenue from increased rental income and/or return on sale, the literature suggests that institutional owners may be driven by potential costs savings. For some investors, eco-labels may act as signals for energy efficiency and as proxies for greenhouse gas (GHG) emissions abatement [26]. However, these signals are only a step towards understanding owner motivation for energy retrofit and upgrade decisions [32]. Because energy costs can be volatile, expected returns on energy retrofits depend to some extent on the variation of expected savings. Thus, modeling applications of techniques or construction materials ([33,49,50,7]; Vimpari & Junnila, [57]). Kontokosta [31] indicates that reliance on energy intensity alone improperly gauges the overall energy consumption of a building, therefore making expected returns through energy savings difficult to forecast. Specific to operational savings in eco-labels, Newsham, Mancini, & Birt [34] find evidence that energy savings exist in LEED buildings. Conversely, Scofield [51] argues that their findings do not effectively control for square footage, and suggests that no energy savings exist. More recently, Uğur and Leblebici [56] observe 30–40% energy savings in a Norwegian case study with 7–10% construction premiums. Given the nuanced and varied findings, expected return forecasts may limit operational savings as a sole incentive for pursuing energy efficiency retrofits and/or eco-labeling.

Given the uncertainty of both direct revenue premiums and costs savings, the impetus for institutional investors to pursue energy-

efficiency strategies may be ESG-related.³ Corporate CSR motivations often drive tenants' desire occupy eco-labeled buildings [18,39,53]. The design and operation of green buildings heavily impact consumer preferences in choosing office space [61]. Attracting quality tenants can reduce the holding risk for properties; meeting the ESG-related demands of high-quality tenants may therefore be a motivating factor for institutional investors to pursue energy-efficiency strategies [10]. Research shows landlords prefer to mitigate risk over maximize gain in a number of scenarios [62]. Other potential financial motivations for pursuing ESG-related strategies also exist. Cajias, Geiger & Bienert [5] find that listed real estate companies with high ESG scores outperform others, while Della Croce [15] finds that ESG is a motivating factor in infrastructure investment. The primary CSR/ESG motivations of institutional property owners remain an incomplete picture, however, particularly considering that their actions are voluntary and profit-driven.

The opacity of institutional owner motivation is in part because asking or contract rents constitute most of the sustainable real estate research data to investigate potential motivations for pursuing energy retrofits and/or eco-labels. Although revealed and/or asking rents offers empirical evidence of market habits, they only permit indirect inference of motivation and do not consider liquidity issues [9]. Brown et al. [3,4,35] emphasize need for further study into owners' and managers' perception of value creation via the adoption of eco-labels. Other recent research also calls for improved understanding and alignment of institutional investors energy usage [32], their management strategies [41] and understanding of the preferences driving the adoption of eco-labels [26].

In addition to the identified gap in the literature concerning institutional owner motivation, a research grant to develop a new green office building rating system supported this paper. The development of the rating system required a robust, overarching mixed-methods research design. A crossover analysis strategy was created specifically for the development of new real estate products, and the interviews conducted as part of this research align with Phase 7 of this product development process (detailed in [11]).

The first industry-driven portion of the project entailed a series of focus groups with tenants, brokers, and property managers, which identified 18 relevant sustainability and energy-efficiency attributes that influence decision making [53]. The results were used to develop a U.S. national survey aimed at estimating tenants' stated willingness to pay (WTP) for these building features (results are detailed in Robinson, Simons, Lee and Kern [46]). The research team acknowledged that the contingent valuation methods used to estimate tenants' stated WTP may not uniformly equate to revealed preferences in the marketplace. Therefore, to complement the survey data, most of the 18 building attributes were appended onto a data set that included tenant rent rolls. Econometric analysis revealed existing market generated premiums for many of these building-level features [45]. The interviews which provide the content for this paper were designed to understand the energy-related strategies of the institutional owners, who ultimately purchase eco-labels.

In this context, this research seeks to directly inquire (rather than by inference) into the energy-efficiency motivations of institutional owners, and address the following research questions:

What are the attitudes, motivations and incentives that influence institutional real estate owners' decisions about energy aspects such as energy upgrades and eco-labeling?

How do energy-related factors influence property purchase, renovation, and management decision making for institutional real estate owners in the US?

² Notable exceptions are a requirement for Federal leases to be in LEED buildings and Washington D.C. requiring LEED certifications for all new office construction.

³ Corporate Social Responsibility (CSR) represents a more commonly used United States term for Environmental Social Governance (ESG).

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