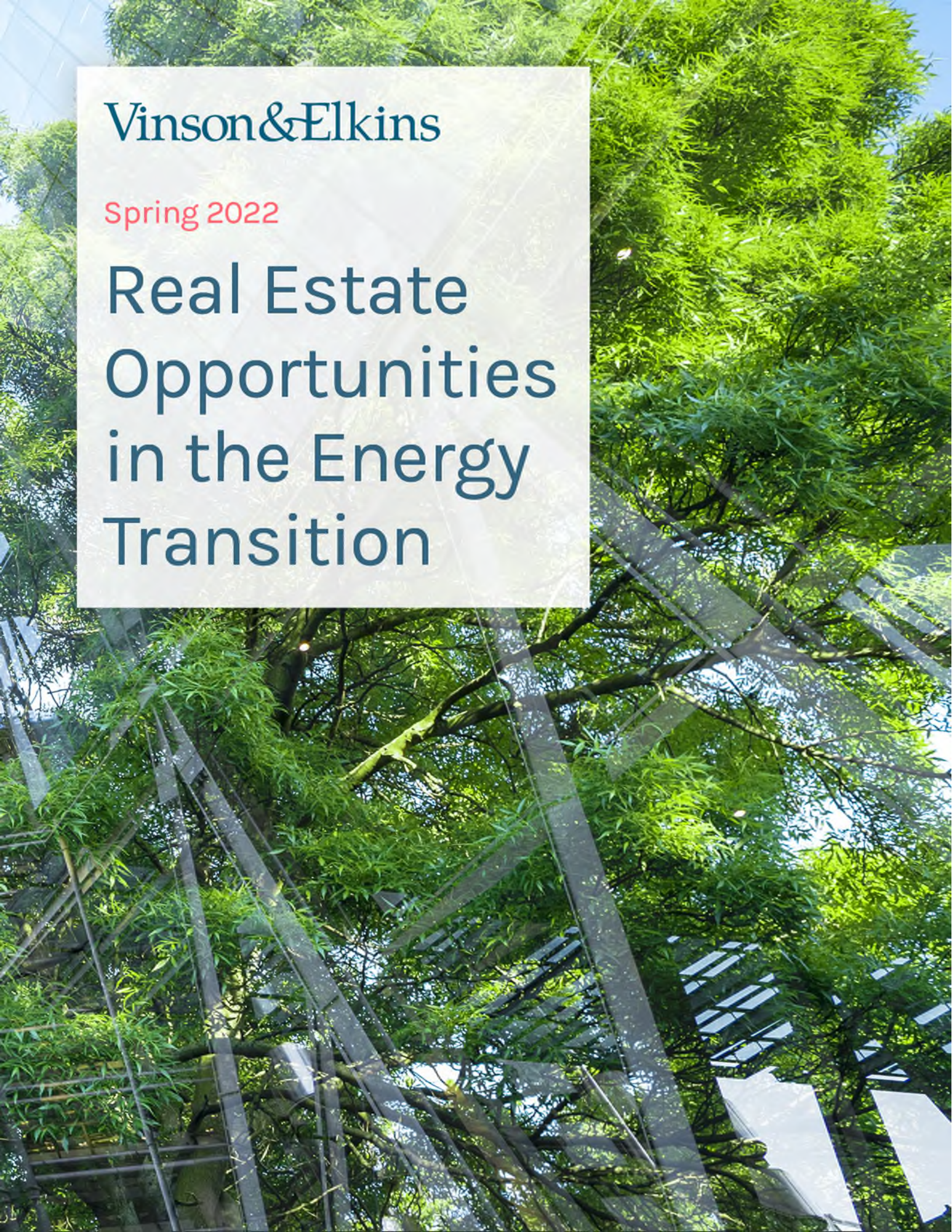

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Real Estate Opportunities in the Energy Transition

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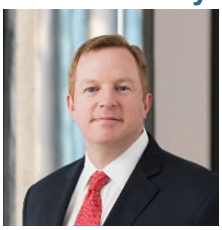

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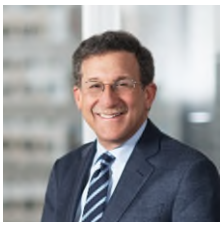

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Real Estate Opportunities in the Energy Transition

Much has been said about the need for countries and companies to build a low-carbon global economy.[1] Multiple estimates of the amount of capital that will be needed to fund the energy transition over the next several decades are stunning, putting the number at or above $100 trillion.[2] Cognizant of the enormous task — and opportunity — before them, the private and public sectors have already begun the work of building a greener economy. Much of this work has been focused on investments in renewable energy, electric vehicle production and battery technology.

Until relatively recently, real estate has been somewhat on the periphery of the energy transition. However, a new report out from McKinsey & Company[3] highlights the critical role that the real estate industry must play in any true effort to mitigate global climate change. Decarbonizing the real estate industry will likely require trillions of dollars of capital. While this need for capital will challenge the real estate markets, it also presents significant opportunities for investors and business builders to facilitate the real estate energy transition in a profitable way.

The Impact of Real Estate on Climate Change — and the Effort to Fight It

According to the International Energy Agency, the buildings and construction sector accounted for 36% of final energy use and 39% of energy and process-related carbon dioxide emissions in 2018. 11% of these emissions resulted from manufacturing building materials and products such as steel, cement and glass.[4] In addition, the global building construction market continues to grow at a rapid pace,[5] intensifying the need for innovative solutions to meet net zero targets in both new buildings and through renovation of existing buildings.

More specifically, the World Green Building Council has said that, in order to meet the goals laid out in the Paris accord on climate change — limiting the rise in global temperatures to less than 2 degrees Celsius — the building sector must operate at "net zero carbon" by 2050.[6] To meet this goal, all new buildings and 20% of the existing building stock would need to be zero-carbon-ready as soon as 2030.[7] Despite a recent drop in direct and indirect carbon emissions from building operations in 2020 — which was primarily a result of the COVID-19 pandemic and the decarbonization of power generation — buildings remain "off track" to achieve carbon neutrality by 2050.[8]

In addition to the impact that real estate has on global emissions, real estate is also uniquely positioned to be a big part of the solution. As the McKinsey Report notes, significant reductions in real estate-related emissions can be achieved with cost-effective technologies that already exist. For example, the U.S. government projects that widespread use of LED lighting systems could lead to total savings in excess of $30 billion by 2027, while simultaneously reducing our nation's electricity use.[9]

The Impact of Climate Change on Real Estate

Of course, real estate doesn't just contribute to global emissions — it is also significantly impacted by them. Perhaps most obviously, this includes physical risks related to damage to buildings from changing weather patterns and extreme weather events caused by climate change. Physical risk includes not just direct costs to repair things like water or wind damage from floods, hurricanes, tornadoes and the like, but also business disruption due to shutdowns of buildings, and increasing insurance costs. In the most extreme case, physical risk could include a total loss of property — the National Oceanic and Atmospheric Administration's Office for Coastal Management projects that up to $106 billion worth of coastal property will likely be below sea level by 2050, if we continue on the current path,[10] and research led by the University of Bristol forecasts an increase in average annual flood losses in the United States of more than 26% from $32 billion currently to $40.6 billion by 2050.[11]

Real estate is also impacted by transition risks — that is, risks that arise from efforts to transition to a low-carbon economy. Transition risks include risks related to government regulation, changes in consumer behavior and the economy more broadly, and other human responses to climate change.[12] The magnitude of transition risks in real estate assets depends in large part on the carbon intensity of the assets and the associated costs of meeting carbon-reduction targets, complying with new government regulations related to climate change, and meeting consumer expectations.[13] That said, transition risk doesn't just apply to a carbon-intensive building itself — real estate that depends on a surrounding carbon-intensive ecosystem is also subject to transition risk. As the McKinsey Report notes:

> "[A] building supplied by a carbon-intensive energy grid or a carbon-intensive transportation system is exposed to the transition risks of those systems as well. All these changes add up to substantial valuation impacts for even diversified portfolios—an increasingly pressing concern for real-estate companies."

The Role of Government

In many cities, buildings account for the majority of greenhouse gas emissions.[14] As a result, it's not a surprise that regulatory requirements to decarbonize buildings have largely been focused at the local level. In April 2019, New York City passed Local Law 97, which will require most buildings over 25,000 square feet to meet new energy efficiency and greenhouse gas emissions limits by 2024, with stricter limits coming into effect in 2030.[15] A few months prior to that, Washington, DC passed the Clean Energy DC Act, which, among other things, establishes a minimum energy performance standard for commercial and multifamily buildings. Buildings that fail to meet this standard will be required to improve their energy performance by 20% over a 5-year compliance period or take other prescriptive actions.[16]

Of course, laws like Local Law 97 and the Clean Energy DC Act — however well-intentioned — come with significant costs. As the McKinsey Report points out, in June 2019, the Urban Green Council found that retrofitting all of the buildings covered by Local Law 97 would create a $16.6 billion to $24.3 billion energy retrofit market opportunity through 2030.[17] While there may be government-sponsored financial assistance available to owners of real estate to help them bring their assets into compliance with laws such as Local Law 97 and the Clean Energy DC Act, private owners and operators of real estate will likely pick up most of the tab.

The Biden administration has also turned its attention to the climate impacts of buildings. In a December Executive Order, the president directed the federal government to reach net-zero emissions in the federal buildings portfolio by 2045, and achieve a 50% reduction in federal building emissions by 2032.[18] To implement this directive, the Council on Environmental Quality and the White House Office of Domestic Climate Policy have established the Buy Clean Task Force, which will "promote use of construction materials with lower embodied emissions and pollutants across their life cycle."[19] In effect, this requires the federal government to develop or adopt standards that look at the lifecycle emissions from the production and use of building materials and create a process to select those building materials that have lower emissions on these measures. As an initial implementation step, the GSA announced two requests for information aimed at procurement of lower embodied emissions concrete and asphalt, which seek information on a variety of topics including existing environmental product declarations and information on testing the strength and durability of the materials.[20]

Decarbonizing the Real Estate Industry

In light of the impact that real estate has on global emissions, the physical and transition risks posed to real estate by climate change, and increasing government regulation related to building emissions and energy use, decarbonization of real estate assets and portfolios has become a top priority for many of the world's leading real estate investors. Generally speaking, global efforts to decarbonize real estate must be focused on reducing two main sources of carbon: embodied carbon and operational carbon.

- Embodied carbon refers to the carbon emitted to construct and maintain a building. The real estate sector is a major consumer of cement and steel, which combined are responsible for 10.2% of global greenhouse gas emissions.[21] Other building materials — such as aluminum, glass and plastic — also contribute to a building's embodied carbon footprint. Decarbonizing the way that these materials are sourced, manufactured and delivered to building sites must be a critical component of any serious effort to meet net zero targets in both the construction of new buildings and the maintenance of existing buildings. In addition, the construction process itself is a significant part of a building's overall embodied carbon footprint. Modular building technologies have shown promise in terms of reducing carbon emissions related to the construction process, but significant further investment will be necessary to refine and scale these emerging businesses.

- Operational carbon refers to the carbon emitted in connection with the operation of a building — typically from energy used for heating and cooling (including water heating), lighting, appliances and other uses of electricity. Operational carbon can be reduced through improvements in energy efficiency and usage. Common strategies that can be deployed to reduce operational carbon include use of renewable energy, installation of LED lighting, insulation to improve building thermodynamics, window glazing and shading and reflective surfacing.[22]

Additionally, an important part of achieving any goal is tracking and monitoring performance. Real estate operators and investors will need to determine the metrics that they will use to track progress against decarbonization targets and formulate processes to assess performance. Boards of directors and management teams in the real estate industry will need to establish the appropriate governance and oversight controls and maintain accountability for meeting decarbonization targets. In addition, real estate companies will need to

formulate a disclosure strategy in line with recognized reporting frameworks and standards such as those promulgated by organizations like the Sustainability Accounting Standards Board and, in the near future, government regulators such as the Securities and Exchange Commission to enable effective communication that promotes transparency, accountability and compliance and facilitates capital investment.[23]

Reducing embodied and operational carbon, tracking and monitoring these efforts, and navigating evolving sustainability disclosure standards will require significant amounts of investment from public and private players and capable assistance from experienced capital markets, legal, finance and tax advisors. However, early movers in this space have already demonstrated the economic benefits that can be realized.

The Opportunity — The "Green Premium"

According to Calvert Research and Management, buildings with green certifications (such as LEED, EnergyStar and Fitwel) are often in higher demand and enjoy a rent premium. This is often driven by tenants who are concerned about their businesses' impact on the environment, as well as the money that they can save on lower utility bills. As an example, Host Hotels & Resorts, the largest publicly traded lodging REIT, invested $140 million in over 675 sustainability projects from 2016 to 2020 and expects annual utility savings from these investments of approximately $21 million.[24] Another analysis suggests that green certifications in real estate yield a sales premium of 7.6% and a rent premium of 6.0%, and a survey conducted by JLL found that 63% of leading investors "strongly agree" that green strategies can drive higher occupancy, higher rents, higher tenant retention and overall higher value.[25]

Greener buildings are also often better positioned to receive more favorable financing terms, since they are more attractive to lenders seeking to fund environmentally friendly projects or provide capital to companies pursuing sustainability goals. Proceeds of green bonds and green loans have been incurred by REITs such as Realty Income,[26] Healthpeak Properties,[27]and Boston Properties, one of the largest publicly traded office REITs, which has raised more than $3.5 billion since 2018 through the issuance of green bonds, to finance or refinance eligible green building or other real estate projects.[28] The Climate Bond Initiative reported that 30% of the proceeds of green debt were allocated to green building projects in 2021.[29]

In addition to green debt, REITs are turning to sustainability-linked debt instruments which are debt instruments tied to a company's sustainability, rather than a project's sustainability. In sustainability-linked debt instruments, a company is typically rewarded and/or penalized for meeting, or failing to meet, specified sustainability performance targets. Hudson Pacific Properties, L.P.'s revolving credit facility, for example, includes a one basis point reduction in interest rate margin for each of its two sustainability performance targets: 1) percentage of in-service office portfolio square feet that has obtained "Fitwel" certification and 2) percentage of in-service portfolio square feet that has obtained LEED certification.[30]

Not surprisingly, cost savings and attractive financing terms translate to better returns for investors. Barron's ten "most sustainable REITs" had an average dividend yield of 2.6% as of the end of 2021, higher than the average 1.7% for all REITs in the S&P 500 index. The sustainable REITs returned an average of 36.7% in 2021, while the S&P 500 gained 28.8%.[31]

And a consequence of better returns for investors is, naturally, more investment. According to Bloomberg Intelligence, global ESG assets may surpass $41 trillion by 2022 and $50 trillion by 2025, one-third of the projected total assets under management globally.[32] Historically, Europe has dominated ESG investing and, in 2021, the issuance of bonds and loans focused on ESG matters in Europe nearly doubled to 749.8 billion euros ($850.7 billion) in 2021 from 396.4 billion euros in 2020.[33] However, growth in ESG investing in the U.S. has been the primary catalyst for recent growth in ESG assets worldwide, with the U.S. seeing more than 40% growth in ESG assets in the past two years. ESG assets in the U.S. are expected to exceed $20 trillion in 2022, even if its pace of growth halves this year.[34]

Looking Ahead

As outlined above, the real estate sector is slowly garnering more attention from sustainability-minded investors. But there is a long way to go. Early evidence indicates that significant capital investment in real estate can serve the dual purposes of achieving profitability for real estate investors while also moving the world toward a lower-carbon economy. Real estate investors and operators, government actors and society at large are likely to continue driving this process forward, and continued investment and technological innovations are almost assuredly key components to achieving the ultimate goal.

As ESG pressures on the real estate industry increase and the push for more quantitative disclosures continues, it will be important for real estate industry participants to determine ways to reliably measure and disclose their greenhouse gas emissions and create sustainable procurement practices. In fact, the Securities and Exchange Commission released a proposed rule on March 21, 2022, that would require U.S. and foreign private issuers to provide certain climate-related information in their registration statements and annual reports. Read Vinson & Elkins' key takeaways here. In light of the ever-increasing regulatory attention to ESG-related disclosures and product claims, it will be important for the industry to continue to develop verifiable metrics for performance and create robust internal compliance systems to track their progress.

[1] See, e.g., What's Driving Transition Energy IPOs and SPAC Combinations? Available at: https://www.velaw.com/insights/whats-driving-transition-energy-ipos-and-spac-combinations/.

[2] See, e.g.:

- Comments made by Axel Weber, chairman of UBS, in November 2021: "We need to understand the urgency of the situation. We need to raise, between now and 2050 … 120 to 160 trillion [dollars] of capital just to make sure that we get the energy transition and the carbon transition that has so far been committed to." https://www.cnbc.com/2021/11/02/americans-are-back-at-the-table-says-ubs-chairman-axel-weber.html.

- International Renewable Energy Agency, Global Renewables Outlook (2020) ("The Deeper Decarbonisation Perspective would require … a total investment need of USD 130 trillion to reach zero emissions."). https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Apr/IRENA_Global_Renewables_Outlook_2020.pdf.

- Kevin Adler, Financing the Global Energy Transition (March 16, 2021) ("Looking out to 2050, Samir Assaf, chairman of corporate and institutional banking for HSBC, floated the global investment need at $100 trillion."). https://cleanenergynews.ihsmarkit.com/research-analysis/financing-the-global-energy-transition.html.

[3] Brodie Boland, Cindy Levy, Rob Palter, and Daniel Stephens, Climate Risk and the Opportunity for Real Estate (February 2022) (the "McKinsey Report"). Available at: https://www.mckinsey.com/industries/real-estate/our-insights/climate-risk-and-the-opportunity-for-real-estate.

[4] International Energy Agency, 2019 Global Status Report for Buildings and Construction. Available at: https://www.iea.org/reports/global-status-report-for-buildings-and-construction-2019.

[5] See, e.g., Global Buildings Construction Market Set to Reach $11475.81 Billion in 2026 at a CAGR of 11.7% (February 14, 2022). https://www.yahoo.com/now/global-buildings-construction-market-set-094300588.html.

[6] World Green Building Council, From Thousands to Billions: Coordinated Action Towards 100% Net Zero Carbon Buildings By 2050. Available at: https://www.worldgbc.org/news-media/thousands-billions-coordinated-action-towards-100-net-zero-carbon-buildings-2050.

[7] International Energy Agency, Tracking Buildings 2021 (November 2021). Available at: https://www.iea.org/reports/tracking-buildings-2021.

[8] *Id.*

[9] Energy Star, Upgrade Your Lighting. Available at: https://www.energystar.gov/buildings/save_energy_commercial_buildings/ways_save/upgrade_lighting.

[10] National Oceanic and Atmospheric Administration, Office for Coastal Management, Climate Change Predictions. Available at: https://coast.noaa.gov/states/fast-facts/climate-change.html.

[11] University of Bristol, Pioneering Research Forecasts Climate Change Set to Send Costs of Flooding Soaring (January 31, 2022). Available at: https://www.bristol.ac.uk/news/2022/january/costs-of-flooding.html.

[12] See the McKinsey Report for a discussion of transition risks.

[13] Bryan Reid, Measuring Climate Risk in Real Estate Portfolios (July 8, 2020). Available at: https://www.msci.com/www/blog-posts/measuring-climate-risk-in-real/01973063966.

[14] See, e.g., Cliff Majersik, DC vs. NYC: What You Need to Know About Both Cities' Bold New Building Performance Laws (May 20, 2019) (noting that, in both DC and New York City, "buildings account for the lion's share of greenhouse gas

emissions (74% in DC and 67% in NYC)"). Available at: https://www.imt.org/a-dc-vs-nyc-comparison-that-matters-what-you-need-to-know-about-both-cities-bold-new-building-performance-laws/.

[15] NYC Sustainable Buildings, Local Law 97. Available at: https://www1.nyc.gov/site/sustainablebuildings/ll97/local-law-97.page.

[16] DC Department of Energy & Environment, Clean Energy DC Act. Available at: https://doee.dc.gov/service/clean-energy-dc-act.

[17] Urban Green Council, Retrofit Market Analysis (June 18, 2019). Available at: https://www.urbangreencouncil.org/sites/default/files/urban_green_retrofit_market_analysis.pdf.

[18] FACT SHEET: President Biden Signs Executive Order Catalyzing America's Clean Energy Economy Through Federal Sustainability (December 8, 2021). Available at: https://www.whitehouse.gov/briefing-room/statements-releases/2021/12/08/fact-sheet-president-biden-signs-executive-order-catalyzing-americas-clean-energy-economy-through-federal-sustainability/.

[19] Fact Sheet: Biden-Harris Administration Advances Cleaner Industrial Sector to Reduce Emissions and Reinvigorate American Manufacturing (February 15, 2022). Available at: https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/15/fact-sheet-biden-harris-administration-advances-cleaner-industrial-sector-to-reduce-emissions-and-reinvigorate-american-manufacturing/.

[20] GSA, Request for Information Regarding Concrete: Environmental Product Declarations and Low Embodied Carbon Products (February 15, 2022). Available at https://sam.gov/opp/344c2772e6854f0b98e2c1675884d373/view; GSA, Request for Information Regarding Asphalt: Environmental Product Declarations and Sustainable or Low Embodied Carbon Products, Feb. 15, 2022, https://sam.gov/opp/bdff92df33b946569c2147035673d5fb/view.

[21] ShareAction, Decarbonising Real Estate: Foundations for Success (February 2021). Available at: https://api.shareaction.org/resources/reports/Decarbonising-Real-Estate.pdf.

[22] *Id.*

[23] Michelle Bachir and Meadow Hackett, Decarbonization of Real Estate: End-to-End Business Transformation (October 5, 2020). Available at: https://www2.deloitte.com/global/en/blog/responsible-business-blog/2020/decarbonization-of-real-estate.html.

[24] Evie Liu, 10 Real Estate Companies That Are Both Greener and More Profitable (February 19, 2022). Available at: https://www.barrons.com/articles/most-sustainable-real-estate-companies-reits-51644967127.

[25] Christian Ulbrich, The Conversation About Green Real Estate is Moving on as Corporates Prioritize Sustainability (January 12, 2022). Available at: https://www.weforum.org/agenda/2022/01/green-real-estate-sustainability-corporate-priority/.

[26] Press Release, Realty Income, Realty Income Prices Debut Offering Of Sterling-Denominated Green Bonds (July 8, 2021). Available at: https://www.realtyincome.com/investors/press-releases/press-release-details/2021/Realty-Income-Prices-Debut-Offering-Of-Sterling-Denominated-Green-Bonds/default.aspx.

[27] Press Release, Healthpeak Properties, Healthpeak Properties Prices $500 Million of 2.125% Senior Unsecured Notes due 2028 in a Green Bond Offering (November 15, 2021). Available at: https://ir.healthpeak.com/2021-11-15-Healthpeak-Properties-Prices-500-Million-of-2-125-Senior-Unsecured-Notes-due-2028-in-a-Green-Bond-Offering.

[28] Evie Liu, *supra* note 24

[29] Liam Jones, $500bn Green Issuance 2021: social and sustainable acceleration: Annual green $1tn in sight: Market expansion forecasts for 2022 and 2025 (January 31, 2022). Available at: https://www.climatebonds.net/2022/01/500bn-green-issuance-2021-social-and-sustainable-acceleration-annual-green-1tn-sight-market.

[30] Fourth Amended and Restated Credit Agreement, dated as of December 21, 2021, by and among Hudson Pacific Properties, L.P., as borrower, each of the lenders party thereto, Wells Fargo Bank, National Association, as administrative agent, Wells Fargo Securities, LLC and BofA Securities, Inc., as active lead arrangers and joint bookrunners, U.S. Bank National Association, KeyBanc Capital Markets, Inc. and Royal Bank of Canada, as joint lead arrangers, Bank of America, N.A., as syndication agent, KeyBanc Capital Markets, Inc., U.S. Bank National Association, Goldman Sachs Bank USA, Morgan Stanley Senior Funding, Inc., Barclays Bank PLC, Royal Bank of Canada, and Fifth Third Bank, as documentation agents, BMO Harris Bank, N.A. and Regions Bank, as senior managing agents, and Wells Fargo Securities, LLC, as sustainability structuring agent. Available at: https://www.sec.gov/Archives/edgar/data/1482512/000148251221000149/wfb_hpp-4tharcreditagreeme.htm.

[31] *Id.*

[32] Bloomberg, ESG May Surpass $41 Trillion Assets in 2022, But Not Without Challenges, Finds Bloomberg Intelligence (January 24, 2022). Available at: https://www.bloomberg.com/company/press/esg-may-surpass-41-trillion-assets-in-2022-but-not-without-challenges-finds-bloomberg-intelligence/.

[33] Samuel Indyk, Europe's Sustainable Bond and Loan Issuance Grows 89% in 2021 – AFME (February 23, 2022). Available at: https://www.reuters.com/article/esg-issuance-afme-idUSL8N2UY595.

[34] Bloomberg, *supra* note 32.

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