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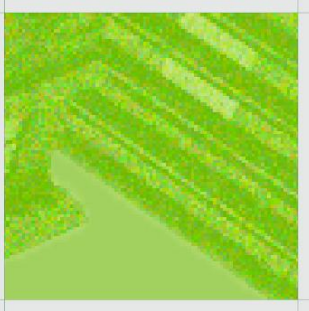


GRESB

Driving Sustainability Performance with Asset-Level Data

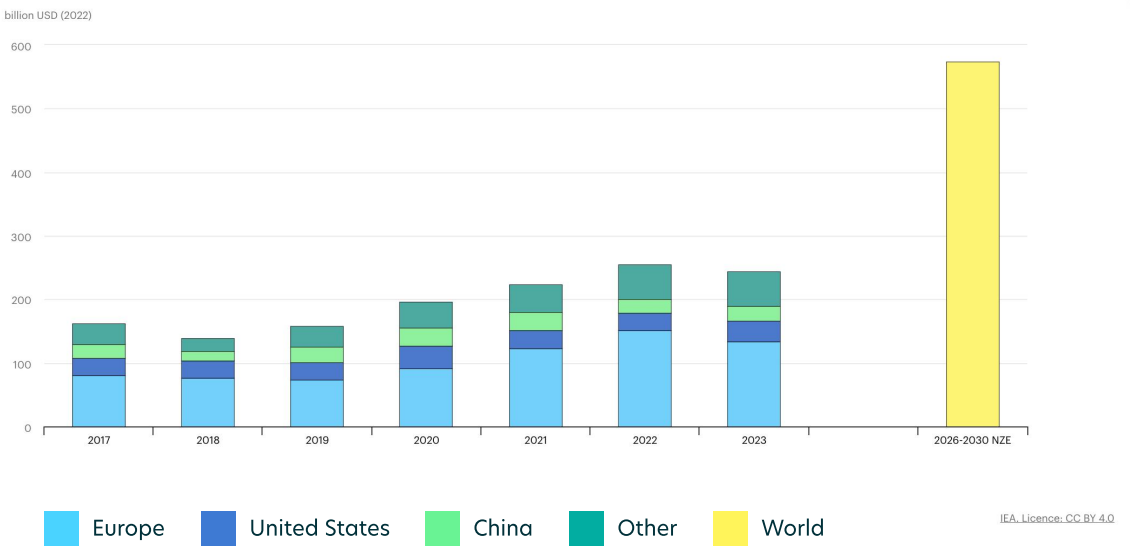
The task of decarbonising real estate is a complex and critical challenge that requires immediate attention. Massive investment in increasing the quality and quantity of the built environment is essential for sustainable development. Some countries face the challenge of expanding built-up areas to accommodate growing populations, while others must renovate existing building stocks to meet the highest modern standards. Despite the scale of these challenges, the good news is that available technology and methodologies offer opportunities to significantly improve the impact of the built environment on the planet. This chapter explores the complexities, actions and strategies for leveraging asset-level data to drive sustainability performance, focusing on actionable insights.

The goal of GRESB is to drive investment towards improving the built environment, i.e., real assets. The IEA estimates that to meet global net-zero goals by 2050, the investment in energy efficiency in buildings will need to reach approximately USD $573 billion in the second half of this decade, against the USD $140-220 billion that have been committed annually so far since 2017 (Figure 1)[8] .This investment, alongside similar levels of investment in on-site renewables and removal of combustion, must be targeted and optimised to deliver the maximum reductions in energy and carbon globally, and as fast as possible. While it is useful to look at the big picture when planning transformations at the scale of sectors and societies, the actions that make up a decarbonisation plan must be designed and implemented locally in an asset. This implies that optimally targeted decarbonisation plans at any scale can only be constructed when fed with reliable data about the performance of individual assets. Thus, asset-level data has come to form a core part of GRESB's commitment to drive the shift from sustainability-as-disclosure to performance-driven assessment and, eventually, decision-making.

GRESB boasts the world's most comprehensive database of energy and greenhouse gas (GHG)[9] intensities of real estate assets. By comparing the performance of their assets to others with complete data, managers and firms can identify and prioritise efforts to collect missing information.

This strategic approach based on stemming from access to asset-level data ensures that data collection efforts are focused where they will provide the most valuable insights, optimising resource allocation for informed decision-making.

Figure 1: The IEA found that the global investment in building energy efficiency 2017-2023 has been less than half the target investment required for the rest of this decade to meet Net Zero goals for the real estate sector. [8]



[8] IEA, Annual investment in energy efficiency in the buildings sector in the Net Zero Scenario, 2017-2030, 2023.

[9] Ibid.

What's wrong with portfolio-level data?

Nothing. But portfolios don't get decarbonised; assets do.

Data on the aggregated performance of asset portfolios is a critical resource for investors looking to reward high performance and meet environmental, social, and governance (ESG) goals. Aggregating data to the portfolio-level is a necessary simplification of the complexities of building performance to enable decision-making and comparison. GRESB ratings allow the performance of portfolios with diverse asset types and geographies to be compared holistically and consistently. However, actions such as fabric retrofits, eliminating on-site combustion, and on-site renewables and storage must be implemented at the asset level. These can only be optimised and tracked when asset-level performance data is available. When the performance of individual assets is measured, analysed, and benchmarked, decarbonisation plans become sufficiently granular and organised. Thus, asset-level data plays a pivotal role in enabling real estate investors, financial institutions, and managers to gain deeper insights into the ESG performance of their portfolios.

GRESB participants and the wider real estate industry have been consistent in their feedback about the need to benchmark individual assets against the rich and varied GRESB database of assets. This is because seeing individual assets also improves transparency by revealing the impacts of each asset and their metrics on the overall GRESB Score (of a fund or portfolio of assets).

Harnessing the power of asset-level data

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The GRESB database is large and varied. More than 62,000 unique assets were submitted in 2023 alone and the number of assets submitted every year continues to grow. Assets submitted in 2023 came from 59 countries around the globe, with more than 150 cities in 22 countries contributing more than 50 assets.
Figure 2 shows the distribution of the three largest asset types/sectors – office, industrial, and retail – in the three largest regions – Asia, Europe, and Americas. Here, we see that while industrial assets tend to have a larger proportion of assets with lower energy use intensity (EUI), all sectors in all regions show a large tail of high-consumption-intensity assets that would be masked in a portfolio average. The use cases below highlight how using asset-level data makes a difference to planning decarbonisation actions and their eventual impacts. We will look at how investment can be targeted for maximum impact through selecting appropriate assets, how due diligence and risk assessments can be better informed, and finally how investment can be holistically optimised and driven by ESG data.

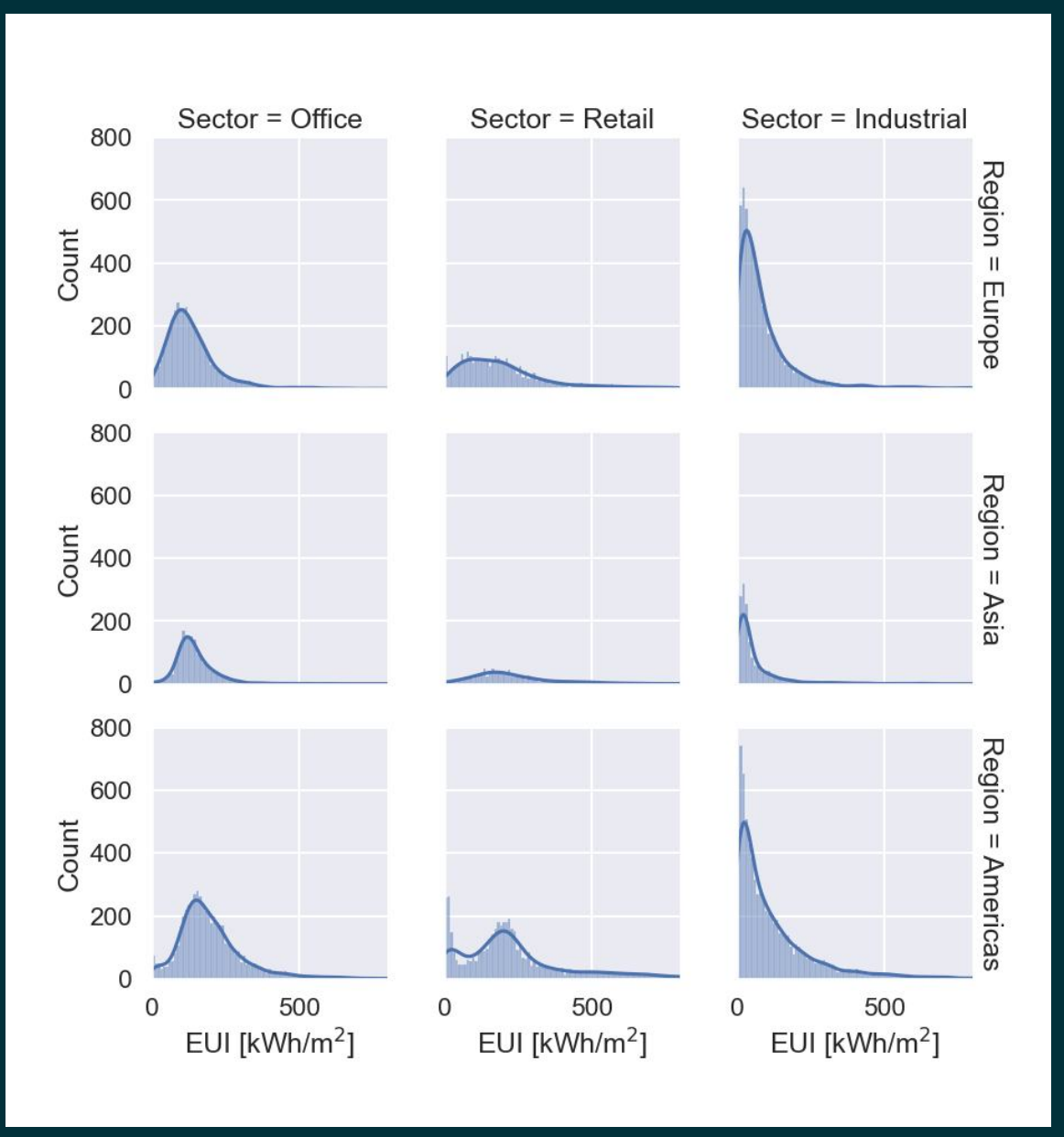


Figure 2: GRESB data depth and breadth. This set of graphs shows the three biggest sectors in the dataset in the three largest regions. The Y-axes are the counts of assets in each bin (0-10 kWh/m², 10-20 kWh/m², ...). The lines are the smoothed kernel density estimates and the area under the curve between two X-axis values (X1 and X2) represents the probability of a value from the dataset falling between those two values. The breadth and depth of the dataset allows GRESB to create peer groups for each asset that are composed of the most comparable buildings – creating a fair comparison but also a large-enough database that statistics are robust. Ongoing work seeks to generalise the benchmarks to be more robust against the sizes of samples within markets.

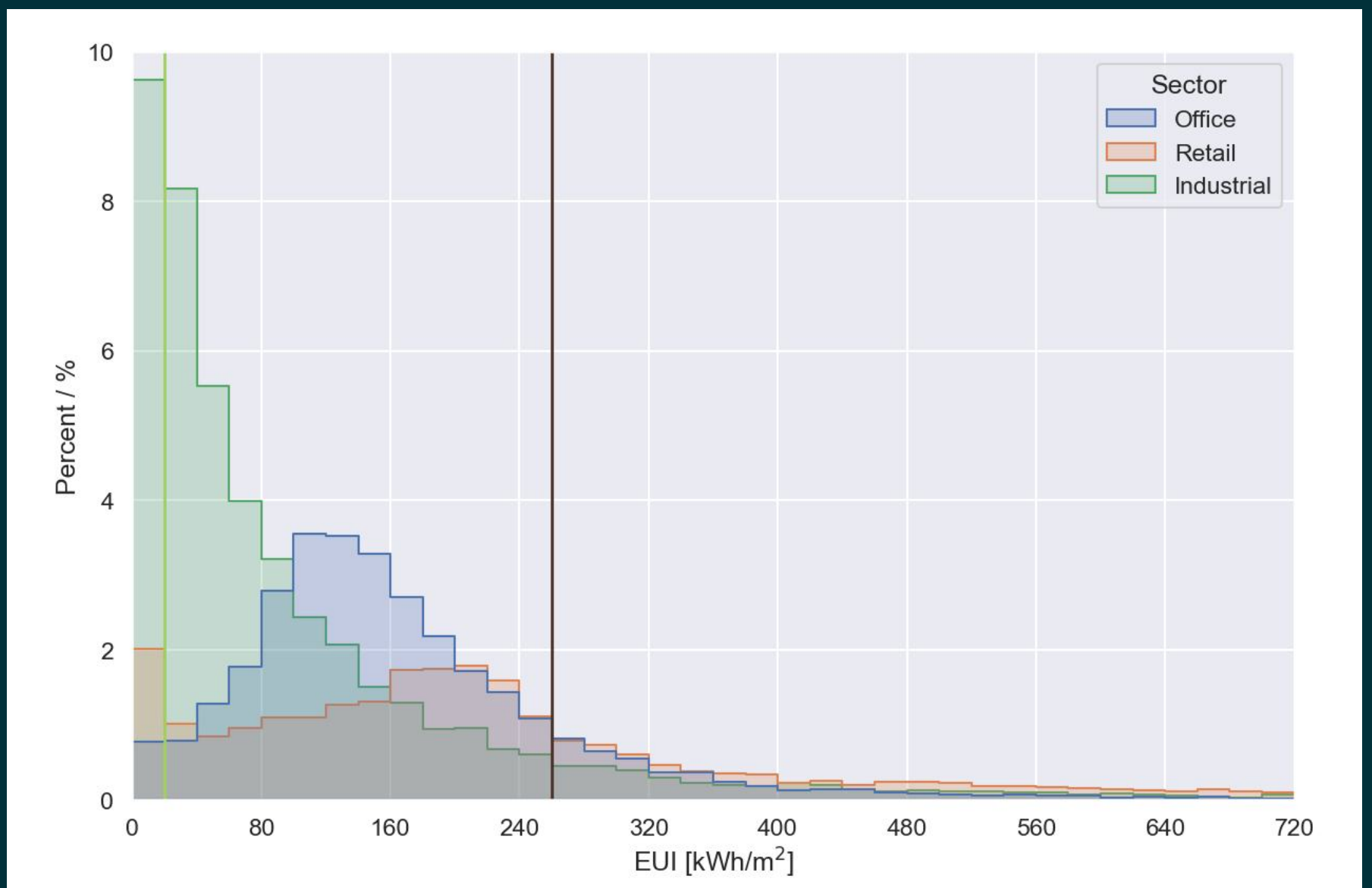
Use Case 1: Decarbonisation Planning

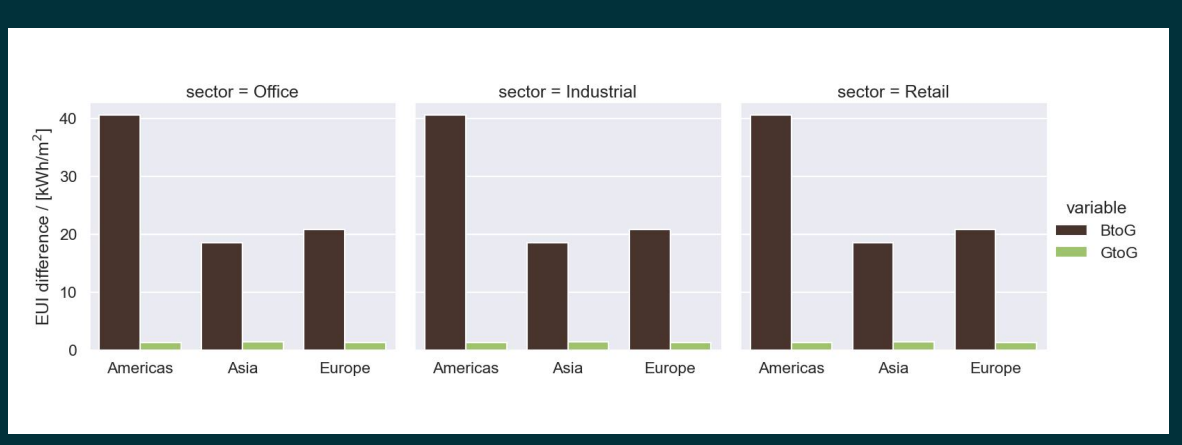
A common decarbonisation strategy for portfolios of real assets is to set a target for operational performance in the future, e.g., net-zero operations by 2050. Such a strategy then assumes that each asset marches in lockstep towards zero or that actions and impacts are somehow spread evenly across assets. This is plainly not the case: real assets are decarbonised through interventions such as system upgrades (e.g., adding insulation to an existing façade), replacements (e.g., a boiler is replaced by a heat pump), and retrofits (e.g., solar PV and batteries for regular use and backup). The choice of interventions, and assets within a portfolio to which they are applied, has an outsize impact on the achievement of long-term decarbonisation goals, as well as the total amount of carbon emitted until net zero is achieved.

Figure 3 shows the result of a thought experiment that demonstrates this concept using anonymised samples from the GRESB database. In the demonstration, we see that knowing the relative standing and absolute potential/performance of an asset matters much more than that of its portfolio. We used the 15th percentile of EUI globally as the threshold for "currently green" and the 85th percentile as the border of "currently brown" (Figure 3, top). Within each category, we created nine pairs of synthetic portfolios, each consisting of 50 assets drawn from the entire spectrum of performance. The nine pairs of portfolios (brown/green) were drawn from offices, industrial, or retail buildings in the Americas, Europe, and Asia (three sectors in three regions). Then, all eligible assets (brown or green) in each type of portfolio were upgraded to a higher performance level: to the 5th percentile for already-green assets (20 kWh/m²) and to the median performance (140 kWh/m²) for existing brown assets. The outcomes of these renovation strategies in terms of absolute reductions in carbon vary significantly (Figure 3, bottom): the brown-to-green investment strategy results in a 10-to-30-fold greater reduction in energy consumption compared to improving already-green assets. In other words, selecting high-consumption assets from otherwise dispersed or average portfolios in any region has a much larger impact than a comparable investment in already-green assets from the same portfolio.

The newly released REAL Benchmarks tool from GRESB helps participants locate their assets in the context of the environmental performance of the relevant market and their own portfolios. It provides energy and GHG benchmarks to help allocate resources to assets with the largest feasible impacts. In upcoming updates, REAL Benchmarks will also offer investors, financial institutions, and managers the ability to identify buildings that meet or exceed applicable local and national sustainability performance thresholds by sector. This local and specific information would provide further context to improve the targeting of sustainability initiatives and optimising resource allocation to drive overall portfolio performance and compliance.

Figure 3: Distribution of EUI for all assets by sector. Industrial assets have the highest percentage of low-intensity assets and retail has the least “peaky” distribution. Synthetic portfolios for the comparison of investment strategies were created by sampling from the entire spread of intensities in each sector in each region.





[Bottom] The difference in energy reduction between renovating the lower performing assets in a portfolio (brown bar) against the already-green, higher-performing assets (green bar). The lower-performing assets (defined as EUI > 85th percentile) were “‘renovated”’ to median performance (50th percentile), while the already-green assets were renovated to an EUI equal to the 5th percentile.

Use Case 2:
Due Diligence and Risk Assessment

Lenders such as banks and financial institutions are increasingly aware of the environmental impact of their lending. From our analyses and conversations with GRESB Participants, we found it unlikely that an entire portfolio is underwritten by a single financial entity. Rather, investments, lending, and their associated due diligence are conducted on an asset-by-asset basis. Multiple institutions and stakeholders often participate in one or more assets within a portfolio to different levels. This highlights the importance of asset-level data since portfolio-level data may not accurately reflect the emissions or other environmental impacts financed by a single actor.

To conduct due diligence and risk assessment for climate change and compliance, asset data can be leveraged in one of two ways:

1

Real estate managers and listed companies can benchmark their assets against suitable peers to understand the performance of one or more assets against the wider market. Benchmarking single assets against the wider market and portfolio is essential to prioritise action since the potential for, and expected impact of, interventions and retrofits can result in very different absolute reductions in carbon emissions based on how good or bad an asset was to begin with. For example, as shown in Figure 3, choosing to renovate an 85th percentile asset until its performance is that of a 50th percentile (median) asset (brown to green) would result in up to 35 times greater carbon reductions than choosing to renovate a 15th percentile asset to the 5th percentile of EUI (green to green).

2

A financial institution (lender) may not always be able to access the actual energy consumption of an asset due to data privacy and other issues. However, it is increasingly important that lenders have reasonable approximations of these figures so they can estimate the magnitude of emissions from assets financed by them ("financed emissions"). Using features such as property type, location, and climate zones to sort and classify large datasets, lenders can estimate the expected emissions from an asset without going through the cumbersome, and often impossible, process of obtaining performance data for an asset. This enables rapid assessment of financed emissions from real assets as part of due diligence.

REAL Statistics, another tool in the GRESB REAL Solutions suite of asset-level products, is built from aggregated asset-level data organised into 11,000 unique combinations to create relevant peer groups. With REAL Statistics, users can get an overview of the state of the relevant market, e.g., an office asset in Asia consumes ~140 kWh/m² (Figure 2). This is both an estimate of the range of consumption to be expected from an asset and a yardstick to motivate future engagement with the managers and users of the asset, and measure performance over time. Another example: say a 20,000 m² office building in Tokyo initially ranked at the 75th percentile (180 kWh/m²) when it was purchased. After being upgraded to the 10th percentile (100 kWh/m²) through financing, it results in savings of 80 kWh/m²/year or 19,800 metric-tons CO^2e over a 25-year analysis horizon.

Use Case 3: ESG-Driven Investment Optimisation

The logical culmination of using asset-level data to make decisions about capital allocation is ESG-driven optimisation. Optimisation in the strictest mathematical sense would require a precise definition of the several uncertain parameters and formulations in investment planning, such as cost of capital; building performance; component availability, structure and performance; social, technical and economic objectives; and boundary conditions. Since these are rarely available to decision-makers, data-driven approximations are useful for making real-world decisions.

There are a host of useful and powerful data-driven workflows that can approximate optimisation when sufficient data is available, such as ranking assets to prioritise them for interventions, tracking the evolution of their performance over time relative to the market and other assets, and more. In addition, since ESG incorporates many aspects of performance, ESG-driven optimisations should be holistic and multidimensional. Using multiple variables such as EUI, GHG intensity, and water and waste intensity makes it possible to interrogate assets and decarbonisation plans according to their impact on several metrics relevant to people and the environment, e.g., energy costs, (carbon) return on investment and water resilience.

None of this can be achieved without asset-level data, as even basic decarbonisation plans for the diverse and dispersed portfolios seen among GRESB Participants and other institutional investors require thoughtful aggregation of asset-level actions. Considering the multidimensional nature of ESG further emphasises the importance of examining assets individually since priorities should be determined by local context. For instance, energy efficiency is particularly crucial in locations with a carbon-intensive grid, while removing on-site combustion is an impactful action for regions with a cleaner grid.

Combined with new insights into the impact of individual asset performance on a portfolio's GRESB Score, the REAL Solutions suite will deliver an unparalleled ability to track an asset's performance and rank against the market and peers through time along multiple dimensions. Future planned enhancements to the REAL Solutions suite of products will enable interested and authorised parties to conduct what-if scenarios analyses cleanly and intuitively. This will allow for real-time evaluation of the impacts of investments, leveraging the power of the GRESB database to deliver data-backed estimations.

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The Future of Asset-Level Data in GRESB

GRESB is a leading provider of sustainability and ESG data and insights to the real asset investment community, providing fund- and asset-level benchmarks and actionable data to inform decision-making. GRESB has taken the strategic decision to push forward with the transition from disclosure- to performance-based assessment, putting the focus squarely on asset-level data gathering. This shift underscores the importance of leveraging asset-level data to drive tangible improvements in environmental performance and inform strategic investment decisions.

The transition will no doubt be challenging, but GRESB is committed to empowering real estate managers and investors by leveraging its broad, global reach, and the resulting deep and representative dataset. The organisation continues to work with relevant industry stakeholders to improve functionality for new and existing use cases. By harnessing the power of asset-level data, real estate professionals can not only meet the growing demands for transparency and performance, but also drive meaningful progress towards a more sustainable future for the industry.