

# Building down to zero

The real estate industry knows it needs to slash emissions. But it is a tall order for the fund management industry. [Vanessa Drucker](#) reports

Real estate has a giant carbon footprint. Global buildings and construction are responsible for about 36% of global energy use and 39% of energy-related carbon dioxide emissions, according to the IEA Global Status Report (International Energy Agency).

The ranks of countries are growing, undertaking to reach net zero by removing or lowering carbon emissions from their buildings. The goals of the Paris Agreement have been taken up by over 110 nations, which have pledged carbon neutrality by 2050, and China, which is looking to 2060.

These ambitious targets demand rigorous scrutiny, as to how realistically they can be implemented in the agreed time frames. What aspects are substantive, and how much is marketing or promotional?

“There are a lot of definitions out there, and the industry needs to come together to set a framework and publish it,” says Laura Craft, head of global ESG strategy at Heitman. Her firm has been advocating sustainability standards since 2009, when it joined the Urban Land Institute (ULI) Greenprint Center for Building Performance, which was developed for tracing energy, water and waste systematically around the globe. That worldwide alliance of real estate owners, investors, and partners now works to reduce greenhouse gases through measurement, benchmarking and best practices.

ULI aligns with the World Green Building Council in its standards and definitions. “It seemed daunting to define,” Craft recalls. “But we wanted the whole industry do so together, and hope to spur other owners and investors to sign on.” So far, about 40 investment managers, investors and real estate firms have joined. The Council has committed to achieve net-zero carbon by 2030 for all parts of

buildings under a landlord’s direct control, and by 2050, for an entire building, including areas beyond the landlord’s direct supervision.

Yet comprehensive definitions of net-zero, high-energy efficiency, and green energy all remain elusive. “A lot of people define it, but each for themselves,” says Hajo Engelke, managing director at the consultancy Westbridge Advisory. Strictly speaking, he says, a utility should account for its green sources, which may include coal and nuclear energy in a fuel mix. “They need to nail down the criteria for the energy quality and certification behind them.” Biomass, solar, hydro, and wind all count as

green, but not nuclear, which is commonly excluded. However, nuclear is permitted for net-zero calculations.

Net-zero efforts focus on reducing energy for real estate operational and procurement activities. But construction is poorly measured in the area of emissions, according to Engelke. Take the concrete used for construction in an expensive location like London. It may, indeed, be transported from a cheaper location – say, Scotland, but the trucking costs alone increases the carbon footprint.

Another set of commitments has been drawn up under the Better Buildings Partnership (BBP), which is a UK membership organisation operating across various countries. Sophie Carruth, head of sustainability for Europe at LaSalle Investment Management, describes the fund manager’s requirements for members to publish a pathway to net zero by the end of 2020. It must be updated each year. “The pathway makes clear that we have set ourselves a route, and not just a commitment,” Carruth says.

According to LaSalle’s published pathway: “Carbon emissions arise at all stages of an asset’s lifecycle, from the operational carbon associated with energy use, to the corporate emissions of third parties providing asset management services, to the embodied carbon emissions of refurbishments and developments. Our strategy takes a holistic view of our activities from purchase through to sale.”

The industry has also been developing benchmarks to measure how requisite energy consumption can align with the Paris 2015 agreement. Most widely recognised is the Climate Risk Real Estate Monitor (CRREM), which works backwards from the Paris standards, setting benchmarks that are asset-type and country-specific. The benchmarks are based on a carbon budget for each building, for each year until 2050, trending down to reflect a



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decarbonisation glidepath.

“They differ for each country, depending on how clean their energy grid is, or soon will be,” Carruth explains. For example, Australia has a very high proportion of coal feeding its grid, so its buildings must drastically reduce the energy it can use at the building level. France, by contrast, relies on nuclear low-carbon technology, with fewer emissions, and is permitted higher energy consumption. The UK, meanwhile, has already undergone a high level of decarbonisation.

“Everyone is moving in the same direction, despite slight nuances driven by legislation,” Carruth says. In the final months of 2020, Japan, Singapore, and South Korea made country-level commitments for 2050.

LaSalle is looking at CRREM’s energy intensity targets for 2025 and 2030, to inform what the firm needs to do to be ‘Paris proof’. It has performed extensive desktop modelling for all assets in its European portfolio, plotted against the benchmarks for those respective years.

Questions remain about how realistic net-zero goals are, how far it is possible to decarbonise and by what date. “We are working with all the frameworks to construct forecasts,” says Lois Salem, chief operating officer of Longevity Partners, an energy and sustainability consultancy with offices in London, Paris, Munich, Amsterdam and the US. But she notes: “The point of the targets is that they are stretching. We can’t achieve them overnight. It’s about setting ambitious overarching goals and working down from there.”

Engelke concurs. “What counts is the improvement trajectory toward greenness,” he says. “It gets more difficult after you harvest the low-hanging fruits, and probably never ends.” That struggle makes it all the more important to implement a strategy, rather than what Engelke labels “a gut feeling”.

It may be broadly possible to reach some of the 2025 and 2030 goals by following recommended measures, but looking well ahead to 2050, benchmarks become more demanding. “Frankly, with current technology levels, they look tricky to achieve,” Carruth admits. “We’re focused on making progress over the next 10 years, while tracking the new solutions emerging for the longer term.”

Technology is already evolving rapidly, filling in gaps and aiding affordability. The required deep retrofits go beyond easy fixes like double-glazed windows, upgraded lighting, or installing timed building-management systems. Although sensors and other smart equipment make a quantifiable difference, some measures will be more exacting. For example, it is intended eventually to decarbonise heating by eliminating gas boilers. In the UK’s Victorian housing stock, it is unrealistic to use heat pumps with existing insulation.

Realistic or not, investors have been influencing real estate owners to take steps. “Pension fund money has put pressure on private equity or opportunistic players to be greener,” Engelke comments.

Several concurrent developments in early 2019 catalysed the movement. The United Nations’ Intergovernmental Panel on Climate Change published a major report on risks of global warming. Meanwhile, civil disobedience and public disruption by Extinction Rebellion protestors



The Stylus Building in London’s Old Street tech hub has been constructed behind the retained façade of a former Victorian gramophone factory and is exceptionally energy efficient. Aviva Investors acquired the building in 2020, saying it would contribute to its commitment to achieving net zero emissions by 2050.

attracted mainstream awareness. Likewise, rallies led by Swedish teenager Greta Thunberg engaged youth activism.

Consciousness seeped through to the institutional level, as pension funds reacted to their members’ demands. Carruth, who has been working on sustainability at LaSalle since 2008, has in recent years been fielding an unprecedented flood of questions, in depth and breadth, on when firms would be meeting zero-carbon parameters. In the UK, the definition of fiduciary responsibility has even expanded to include ESG factors.

### Turning goals into action

Building owners typically take a multistage approach as they move toward their ultimate net-zero objectives. Salem describes some steps for executing the most efficient possible agenda. First, she recommends an energy audit, so clients can quantify opportunities, set carbon trajectories and calculate the payback for their investments. “Some actions will be simple, like building-controls optimisation,” she says. “Others may require a full retrofit and renovation, replacing entire systems. You need a complete analysis of how your building operates, before you can fine tune it.”

A comprehensive audit of every new acquisition in its portfolios is performed at Legal & General Investment Management. “We develop a roadmap for all standing assets, collaborating with the occupiers to understand the key interventions required to reach net zero,” says Shuen Chan, head of ESG at LGIM. For instance, she describes a transition to operable windows in a building on a major road in Central London. They are tightly sealed now, against sound and pollution. However, UK government mandates will encourage electric vehicles by 2030, reducing pollution. Chan describes how the

plans combine “understanding the building fabric itself, policy, and technology”.

Without doubt, most buildings standing today will still exist in 2050. Brand new buildings may be designed from scratch, but current structures can only be remodelled up to a point. That is where the energy hierarchy comes into play, as a step-by-step guide towards full decarbonisation.

The initial rung involves modest changes to operations and asset management practices. “Retrofitting may not be all that expensive,” Salem reassures. “It’s already integrated into how our clients’ buildings are run and renovated, so now just needs to be brought to the fore. A sustainability coordinator, who knows the latest technology, works with designers and architects to unlock existing energy-efficiency potential.” While making buildings more energy efficient, health and wellbeing can also be addressed to improve the quality of the space, such as implementing air-quality control.

“Looking at the 60-year life of a building, the incremental cost of making changes is lower than one might think,” agrees Lucy Winterburn, director of UK Investment at Savills Investment Management. She too reports that tenants’ concerns about wellness have surfaced prominently. In recent months, a large logistics operator in the UK made it its first line of enquiry at Savills IM.

“Tenants have started to require that building designs factor in readiness for electric vehicles, and that there is enough power on site to charge them using photovoltaic (PV) panels,” Winterburn says.

The next steps of the hierarchy contemplate using fossil-free energy. Ideally, energy might be generated on-site through solar panels on warehouse rooftops. Not every building is suitable for solar or wind power, though. Sometimes energy must be procured either via a green tariff from a utility provider, or through corporate power-purchase agreements, whereby corporates forward-fund investment in large renewables projects.

“Not all global markets are deregulated, allowing customers to choose renewable sources,” says Tony Smedley, head of private equity Europe at Heitman. “Buyers in regulated markets may therefore be limited to non-renewable credits.” Nevertheless, since no ‘green gas’ exists, gas-heated buildings must work with offsets. Neutralising offsets, like planting trees for carbon mitigation, are considered a last resort.

“Offsets bring no financial benefits, as do the energy cost reductions at the top of the hierarchy,” Carruth points out. On the other hand, Winterburn says, offsets amount to “hundreds of thousands of pounds, and not millions”.

Landlords are already responsible for common areas, like large tracts of shopping centres, office buildings with car-parking garages, and logistics parks with outside space. Smedley explains how his firm heats and lights common areas of its European portfolio in the UK, Ireland, France, Germany and the Netherlands with 75% renewable energy. PV panels in storage buildings have been a “huge win”, giving the firm more control over energy use.

Tenants buy Heitman’s energy, which can also potentially be sold into the grid. In fact, Heitman’s tenants now require the assets to be environmentally efficient as a condition of signing. In the past, some were suspicious of their landlords buying



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energy and charging it back, so they preferred to retain control of procurements. Trust has evolved between parties, and renewables have improved. The bar is shifting as tenants choose the most energy-efficient buildings. Some Heitman tenants, like Facebook and Walmart, are setting their own net-zero goals, which helps bring landlord and tenant into alignment.

It is expensive to make older buildings energy efficient, and landlords must cover for it in tenants' rent. However, occupiers like modern buildings, which are more efficient to operate. "Clever tenants appreciate the benefits because, although rents are slightly higher, operational costs should be lower," Winterburn notes.

She predicts that building owners may not see

upward valuations today, but will reap rewards in a future world where regulation is coming. Some assets will be stranded, too, for falling short of net-zero target levels. After all, "definitions of net zero can be fudged, or at worst, offset," Winterburn says. "But, in five years' time, further changes may be required that would have been easier if undertaken sooner."