

FOR PROFESSIONAL INVESTORS ONLY



## Carbon Neutral Real Estate Fund

BBP Climate Commitment  
net-zero carbon pathway

In partnership with



**STANHOPE**



# THE NET-ZERO CHALLENGE

# THE NET-ZERO CHALLENGE

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Climate change is one of the greatest challenges facing humanity, requiring rapid decarbonisation across the economy and long-term removal of carbon from the atmosphere. The greenhouse gases arising from buildings represent almost 40% of global emissions<sup>1</sup>, including the energy used in their operation and the manufacturing and transportation of materials used to construct and maintain them.

While new buildings are built to ever-increasing standards of energy efficiency and emissions performance, most of the buildings that exist today will still be standing in 2050, when net global emissions must reach zero. Real estate assets must evolve to meet this net-zero challenge, or they will ultimately become unattractive to tenants, risk breaching future legislation, and may become stranded.

More than ten years ago, the founding partners of the Low Carbon Workplace Fund (LCW), now called the Carbon Neutral Real Estate Fund (CNRE), established a common vision for the future of buildings. Together, Columbia Threadneedle, Stanhope, and the Carbon Trust recognised the need for a drastic change in how the market approaches existing building stock to deliver high-quality, revitalised workplaces coupled with significant reductions in operational and embodied emissions. The Fund was launched in 2010 specifically to address the commercial and technical barriers hindering progress in existing offices and to accelerate the transition to low-carbon real estate.

Our approach to sustainability has been highly effective thus far, and targeting net-zero carbon emissions is the natural next step. We signalled our commitment to this by signing the Better Buildings Partnership's Climate Commitment in 2019, pledging to deliver a net-zero-carbon real estate portfolio.

On top of this net-zero challenge, real estate now faces the Covid-19 pandemic and its potentially long-lasting impacts. Already, it has been essential for organisations to adapt buildings and working practices to new health and safety procedures and a mass migration to remote working. With a post-pandemic hybrid model of office where remote and flexible work styles are common, workplaces will have to be highly adaptable, responsive, and user-oriented. Fortunately, these requirements are well-aligned with carbon goals. The future of offices is healthy, sustainable, and net-zero.

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<sup>1</sup>Global Alliance for Buildings and Construction (Global ABC) at COP25 in Madrid in December 2019: [globalabc.org](https://globalabc.org)

# THE NET-ZERO CHALLENGE

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## NAVIGATING THIS DOCUMENT

In this document we explain our approach to tackling the net-zero challenge in five main sections.

1. **Our achievements:** Based on the three cornerstones of sustainability performance – accountability, technology & systems, and active management – we have delivered buildings that are low-carbon in construction and use, when compared to their peers. The Fund is rated 5 stars by GRESB, and operations of our buildings have been certified carbon neutral since 2018.
2. **Our vision:** Our vision for net-zero carbon is to reduce our lifecycle emissions on a Paris Agreement-aligned 1.5°C science-based trajectory, source all energy from renewables, and offset any residual emissions through certified greenhouse gas removals.
3. **Our emissions:** Our emissions come principally from building energy use, embodied emissions from construction, and emissions related to tenants' waste, water, and purchased products during occupation.
4. **Our approach:** To reduce emissions on a 1.5°C trajectory, we will create smart all-electric buildings to help us meet ambitious operational energy targets, reduce embodied emissions well below industry benchmarks, and work in new ways with tenants and suppliers to tackle value chain emissions.
5. **Our disclosures:** Clear and transparent communication of our annual progress against our targets will uphold the integrity of our commitment to achieving net-zero carbon. Absolute emissions, energy use and key metrics will be published each year at both portfolio and asset level.

In the appendices we also include detail on our emissions boundaries and footprint, annual reporting of emissions, and specific pathway actions, metrics and targets.

# OUR ACHIEVEMENTS

## OUR CORNERSTONES OF SUSTAINABLE, LOW-CARBON PERFORMANCE

The sustainable, low-carbon performance of the CNRE Fund is built on three cornerstones: accountability, active management, and technology & systems. All of the concepts must work in unison to ensure that the full potential of each refurbishment is realised. Missing even one of these three cornerstones leads to sustainability underperformance.



# OUR ACHIEVEMENTS

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## OUR CORNERSTONES OF SUSTAINABLE, LOW-CARBON PERFORMANCE

### **Accountability**

The Fund exists to tackle carbon and other sustainability challenges in existing UK offices, which is clear to the Fund's investors and all of its stakeholders. Indeed, it is in the Fund's name. All of the Fund partners are committed to, and accountable for, our portfolio and asset sustainability goals, which are embedded from end to end in all of our developments and operational activities. We are responsible for our carbon emissions across the whole portfolio, and we include our tenant's activities in our performance.

Our ownership of carbon emissions from acquisition and refurbishment through to operation and end of life drives us to exceed our targets so that we can continually improve against our expected outcomes. Sustainability is not just a nice-to-have feature of the Fund; it is at the core of what we promise to deliver alongside financial objectives. Without this full accountability, there is not the same drive and mandate to achieve maximum sustainability performance.

### **Technology & systems**

We believe that efficiency comes first; reducing energy use and emissions is our highest priority. Building upon the existing passive energy measures and characteristics of the asset, we use informed design from our post occupancy evaluation process to make the right choices for our systems. Adaptability, flexibility and responsive automated control backed by detailed monitoring data are core tenets that have allowed us to quickly respond to opportunities to avoid energy waste and reduce emissions. Without these high quality and effective systems, energy efficiency goals will never be truly realised, regardless of the time spent and efforts made to manage performance.

### **Active management**

Dedicated energy analysis and expertise in each individual building's systems and technology ensure that our portfolio is continually optimised. Our detailed occupancy and energy monitoring enable controls and equipment schedules to be matched to real building usage and rapidly respond to deviations to avoid waste and potential interruptions to tenant activities. Without active management, building operation will drift away from the targets and remain unchecked.

# OUR ACHIEVEMENTS

## SUSTAINABLE OUTCOMES HIGHLIGHTS



GRESB 5\* Fund



Detailed occupancy profiles enabling unique per person metrics from infrared people counting system



Carbon neutral performance<sup>2</sup> since 2018 with verified footprint and GGR offset



Extensive collaborative tenant engagement and support



All refurbishments achieve BREEAM Excellent and EPC B ratings



Responsive, occupancy-oriented, adaptable efficiency



Best single asset energy performance intensity of 124 kWh<sub>e</sub>/m<sup>2</sup> <sup>3</sup> against BBP benchmark for good performance of 168 kWh<sub>e</sub>/m<sup>2</sup> <sup>4</sup>



Refurbishment is inherently low-carbon, superstructure embodied emissions are 84% lower than typical <sup>5</sup>



100% energy data coverage and real-time monitoring, including tenant space and non-managed buildings through real-time monitoring

<sup>2</sup> Offset certified 2018 & 2019 footprints, 2020 to be finalised

<sup>3</sup> Measured energy performance of the Paul Street for 2019, refurbishment completed in 2016.

<sup>4</sup> Better Buildings Partnership Real Estate Environmental Benchmark, REEB 2019 Benchmarks, pdf, Energy Benchmarks – Offices – Air Conditioned, [https://www.betterbuildingspartnership.co.uk/sites/default/files/media/attachment/BBP\\_REEB%20Benchmarks%202019\\_0.pdf](https://www.betterbuildingspartnership.co.uk/sites/default/files/media/attachment/BBP_REEB%20Benchmarks%202019_0.pdf)

<sup>5</sup> WRAP Cutting embodied carbon in construction projects guidance, “Possible carbon savings in key buildings/project types” table, Office, Embodied Carbon <https://www.wrap.org.uk/sites/files/wrap/FINAL%20PRO095-009%20Embodied%20Carbon%20Annex.pdf>

# OUR ACHIEVEMENTS

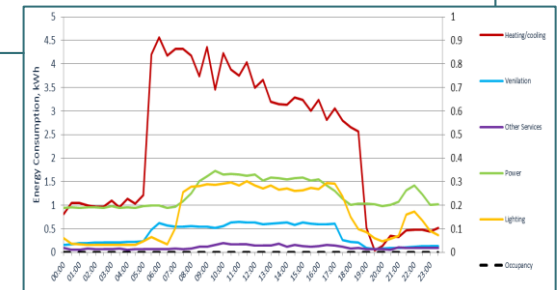
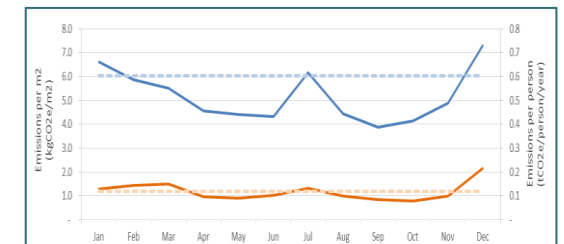
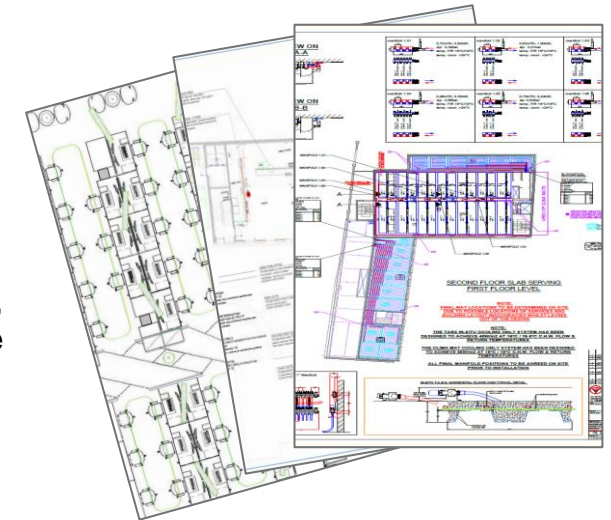
## OCCUPIER ENGAGEMENT JOURNEY

**Persistent sustainable performance can only be accomplished through partnerships; our tenants play a vital role in improving efficiency and reducing the environmental impact of our buildings.**

**The Tenant Charter** – we embed a foundation of commitment to sustainability at the very beginning with our tenants, through our Tenant Charter. Forming part of the lease, this is an agreement of cooperation towards the carbon targets applied to every building, under which we openly share data, regularly collaborate on broader operational greenhouse gas emissions reductions and align with the low carbon principles that each building is designed upon.

**Early engagement** – in person, expert technical guidance, prior to and during the tenant fit-out to ensure their office design is compatible with, and complementary to the sustainable operating strategy of the building. This reduces the need for removing, replacing, or reconfiguring the newly installed systems, and the outcome is an optimally performing and comfortable workspace. Encouraging our tenants to adopt circular economy principles in their fit-outs promotes the use of recycled and reused materials, while avoiding generating waste. Following the fit-outs, we deliver non-technical support to general building users to help them understand how their new offices work, and how to effectively interact with the new building systems and make the most of their new space.

**On-going support** – with detailed knowledge of each building, our support and analytics helps adapt the operation of the building to their particular needs and reduce energy consumption of our tenants as they settle into their new workplace. We distil detailed energy and occupancy analysis down into easy-to-digest visual summary reports that help to identify and drive action on energy saving opportunities, keeping all of our tenants informed about the progress towards our common sustainability goals. Building these strong relationships via common energy and carbon performance targets helps us to further engage with tenants on a wider sustainability agenda, using our influence to help them to reduce their other environmental impacts and collaborate on new initiatives.





# OUR VISION

# OUR VISION

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*OUR VISION FOR NET-ZERO CARBON IS TO REDUCE OUR LIFECYCLE EMISSIONS ON A 1.5°C SCIENCE-BASED TRAJECTORY, SOURCE ALL ENERGY FROM RENEWABLES, AND OFFSET ANY RESIDUAL EMISSIONS THROUGH CERTIFIED GREENHOUSE GAS REMOVALS.*

Our ultimate sustainable performance goal for the Fund is to achieve net-zero carbon through this definition and continue to transform existing real estate into assets that are fit for the future; delivering workspaces that enhance tenant productivity, health and wellbeing, while minimising our whole lifecycle environmental impacts.

## **Reduce emissions on a 1.5°C science-based trajectory**

Rapidly reducing emissions across all of our activities is central to achieving net-zero emissions, which is why we are adopting a Paris Agreement aligned 1.5°C scenario science-based target trajectory. Aligning with this reduction pathway will clearly demonstrate that our future emissions reductions over our whole value chain is accordance with net-zero emissions principles. Adopting this target is hugely challenging, requiring annual reductions of 4.2%, however our expertise and track record make us highly confident in successfully achieving our target. The success of the whole-building refurbishments we undertake on our acquisition are testament to that.

## **Source all energy from renewables**

As we optimise and reduce our energy consumption, we must mitigate the carbon intensity of our energy supply in parallel. Future refurbishments will be all-electric, and we will include minimum levels for on-site renewable energy systems. The existing portfolio will be assessed for additional renewable energy retrofit opportunities. We have implemented 100% renewable energy contracts for all our managed assets, however we need to go further to ensure that renewable energy we purchase is contributing to the decarbonisation of the UK grid. We will introduce power purchase agreements (PPAs), investing more directly in renewables, for our renewable electricity purchasing while working with our tenants in our non-managed buildings to incentivise adoption of renewable energy contracts as major contributors to our net-zero carbon journey. While we are in the process of phasing out gas use, we will roll out 'green gas' contracts for managed assets.

# OUR VISION

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## Offset residual emissions through certified greenhouse gas removals

Throughout our transition to net-zero, we believe it is essential to offset the emissions we have yet to reduce. Under our existing carbon neutrality strategy, we already offset 110% of our fund-level verified operational energy greenhouse gas emissions footprint<sup>6</sup>, for landlord and tenanted areas.

In our net-zero carbon targets, we will include our complete portfolio and value chain operational emissions (see 'Our emissions'), as well as one-off inclusions for the major refurbishment of new acquisitions. We are committed to purchasing Verified Emissions Reduction (VER) credits from rigorously certified<sup>7</sup> greenhouse gas removal (GGR) projects for our offsets. GGR projects are essential to achieving net-zero, by actually removing CO<sub>2</sub> from the atmosphere they can balance residual emissions that are difficult to avoid. We will continue to support nature-based solutions, such as reforestation, that deliver additional local socio-economic benefits as well as climate change impact, alternative technology-based solutions are still in relatively early stages of development and yield fewer additional benefits.

For transparency, our purchased offsets will be retired on the publicly available register for the certification scheme and the location published as part of our annual climate commitment disclosures.

Through annual offsetting we will continue our commitment to certified carbon neutrality<sup>8</sup> and contribute to driving demand for high quality projects forward helping to raise the bar for best practice in GGR project standards.

We acknowledge that net-zero carbon is a long-term undertaking, and our approach to achieving this will need to be flexible. New ideas and innovation will be essential to accelerating emissions reductions, generating clean energy for our buildings, and reaching our targets. We will disclose our progress with a full review of our targets after five years to ensure that they are still appropriate and representative of a net-zero carbon journey for the Fund.

<sup>6</sup> Our annual carbon footprint independently verified through ISO 14064-2

<sup>7</sup> Gold Standard or Verified Carbon Standard (VCS)

<sup>8</sup> Annually certification to the PAS 2060 Carbon Neutrality standard



# OUR EMISSIONS

# OUR EMISSIONS

## MEASUREMENT BOUNDARY

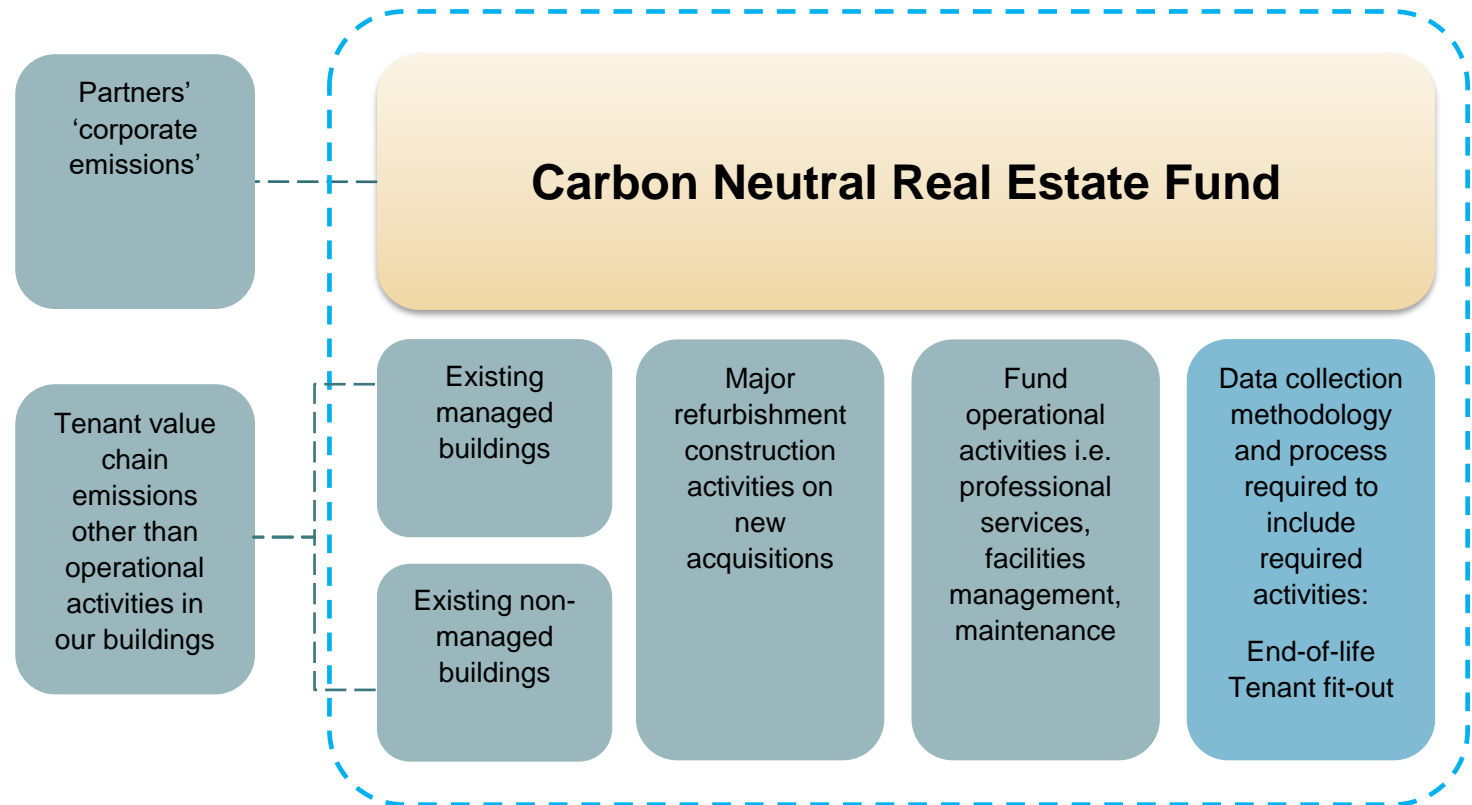
**Setting an appropriate boundary for the CNRE Fund will ensure that all of the activities under our influence and control are addressed under our net-zero carbon commitment.**

The boundary for our Fund encompasses all properties within the portfolio and the associated operational activities. With 100% of the portfolio covered by an automated metering system and engagement with all of our tenants we are able to accurately include the emissions arising from our tenant's activities beyond the typical capabilities in real estate.

Typical 'corporate emissions' of the Fund partners' organisations have not been included within the boundary, including sources such as emissions from running offices, business travel and commuting.

These emissions are being addressed through each partner's individual organisational programmes such as carbon neutrality and science-based targets.

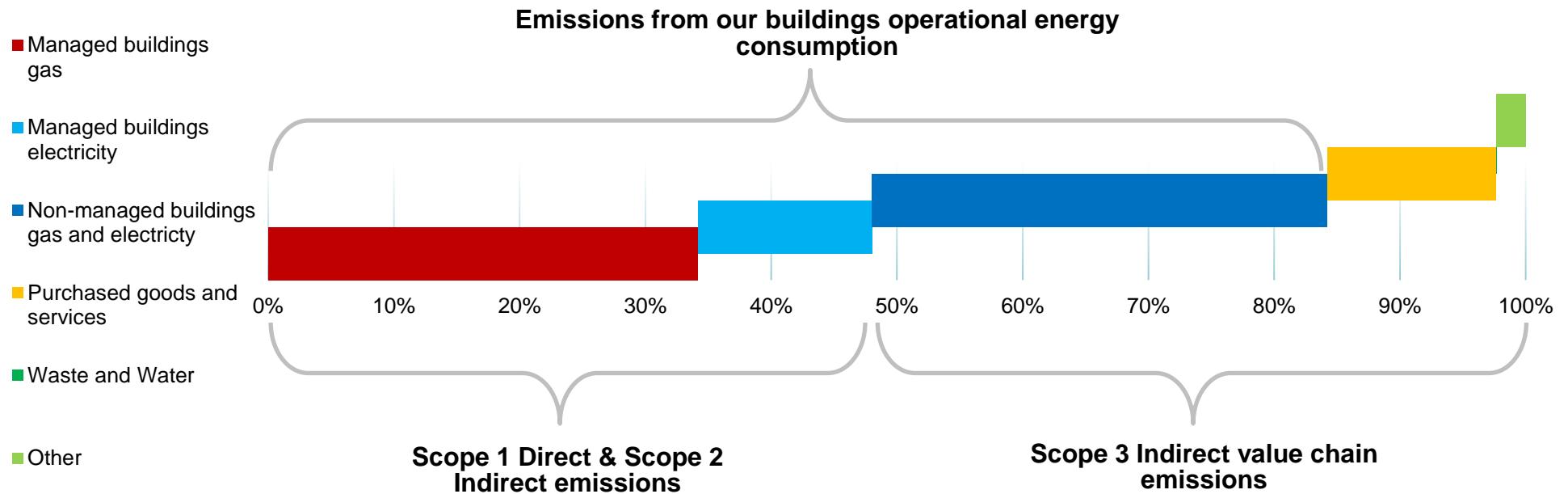
Emissions arising from tenant activities outside of our buildings will not be included as the Fund has no direct influence or control.



# OUR EMISSIONS

## OUR EMISSIONS BREAKDOWN

Within our boundary, we have measured our carbon footprint using data from our energy monitoring systems, tenant engagement and the Fund's operational expenditure. The following footprint is representative of our 2019 emissions baseline for our net-zero carbon targets.



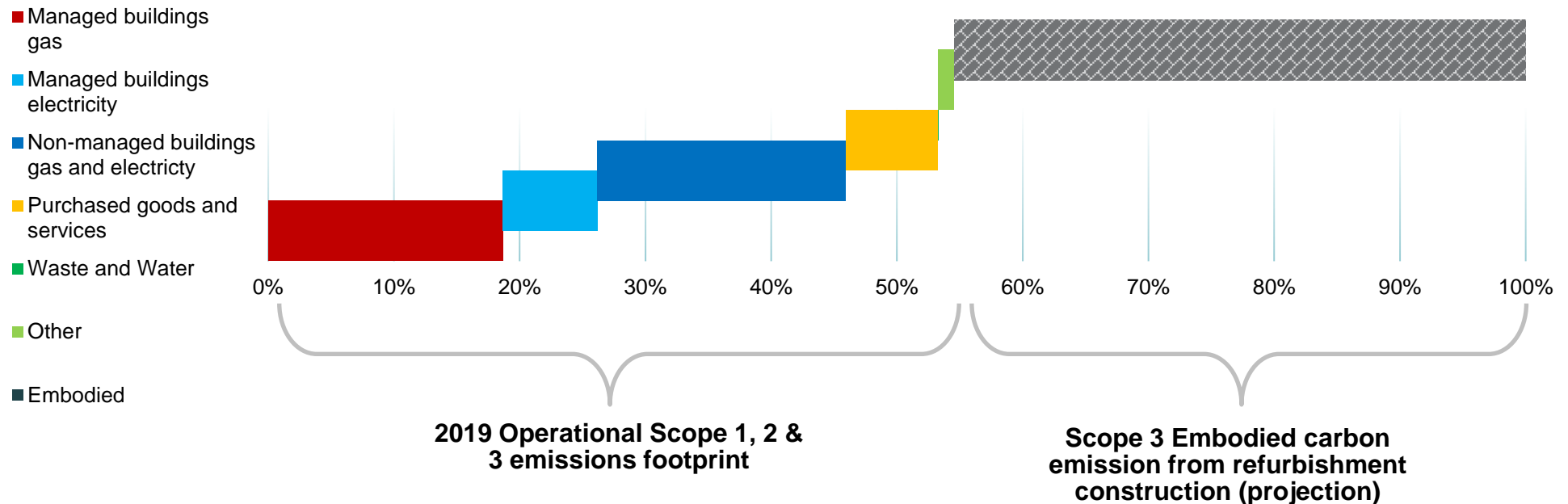
Energy consumption, from both managed and non-managed buildings, represents over 80% of our operational footprint. This comprises of natural gas for heating and hot water (scope 1), electricity use (scope 2) and tenant energy consumption (scope 3). As the largest element of our footprint this is our most significant challenge to address. The remaining 20% is from our value chain emissions (scope 3) arising from waste disposal, water use and purchased goods and services, such as facilities management activities, maintenance, and professional services.

# OUR EMISSIONS

## OUR EMISSIONS BREAKDOWN

During 2019, no acquisitions or major refurbishments were undertaken, but we recognise that a high proportion of our future emissions footprints could be attributed to this construction activity. In forthcoming years, when we undertake major refurbishments on newly acquired buildings, the total embodied emissions from the materials, transport and construction process will be allocated to our footprint in the year of completion.

Based on the embodied carbon analysis and calculations of three of our most recent refurbishments, we anticipate that the major refurbishment of a future acquisition would be approximately 2,400 tCO<sub>2</sub>e, based on a 4,000 m<sup>2</sup> GIA building with an embodied carbon intensity of 600 kgCO<sub>2</sub>e/m<sup>2</sup> GIA. This carbon intensity corresponds to the benchmark provided by the LETI Low Carbon Primer 2020 target construction embodied carbon intensity.



# OUR EMISSIONS

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## CHALLENGES

While there are enormous lifecycle advantages to refurbishing existing buildings, working within the constraints of predetermined layouts and structures limits the optimisation of new space compared to the design freedom of new build. Every asset presents a new performance problem to solve, our post occupancy evaluations (POE) feed back valuable insight into our design process helping to embed effective solutions for each unique situation, capitalising on the opportunities we do have.

### Enhancing our future emissions measurement processes

We have identified sources of emissions within our boundary that are requirements under the BBP Climate Commitment which we do not currently have data collection and calculation methodologies in place to develop sufficiently accurate benchmarks and reduction targets. As we improve the accuracy of our data, either by using real emissions measurements compared to industry benchmarking, or cost metrics with standard emissions factors, we will report our data for these emissions sources and seek to include them as part of our reduction targets at the earliest opportunity:

- **Tenant fitout:** The embodied carbon emissions from this source would normally be outside of the measurement boundary and to date we have not collected the relevant information or data. However, we have sought to encourage recycled materials, re-used products and low carbon alternatives during our engagement with tenants on their office design. To improve we will engage with future tenants on emissions impact of office fitouts during their design, and collect appropriate data that allows the calculation of their fitout embodied emissions footprint via the same modelling as our base-build embodied carbon emissions.
- **End of Life emissions:** As part of future major refurbishments, end of life (re-use, recycling and demolition) will be included as part of our whole life embodied carbon modelling. Current experience within the industry is relatively limited regarding this lifecycle phase and requires further development to establish a consistent approach that will help to adapt our designs a limit end of life impacts.





# OUR NET-ZERO CARBON APPROACH

# OUR APPROACH

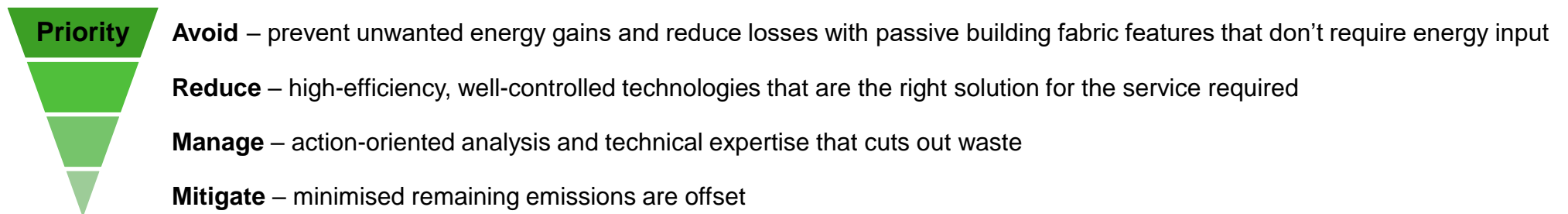
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*TO REDUCE EMISSIONS ON A 1.5°C TRAJECTORY, WE WILL CREATE SMART ALL-ELECTRIC BUILDINGS TO HELP US MEET AMBITIOUS OPERATIONAL ENERGY TARGETS, REDUCE EMBODIED EMISSIONS WELL BELOW INDUSTRY BENCHMARKS, AND WORK IN NEW WAYS WITH TENANTS AND SUPPLIERS TO TACKLE VALUE CHAIN EMISSIONS.*

## Operational energy

Emissions from operational energy use across all of our buildings are our highest priority for reduction; these emissions make up more than 80% of our total carbon footprint. In managed buildings we have the greatest level of control over building operations and energy purchasing to implement changes. But even in our non-managed buildings, we can still influence energy consumption thanks to our Charter, ongoing support and sharing of operational data, enabling us to have a greater impact on this aspect of our emissions compared to other funds and real estate companies.

Our approach to reducing operational energy emissions in our existing portfolio and future developments is rooted in our cornerstones of sustainability and adherence to the energy hierarchy when designing each refurbishment:



# OUR APPROACH

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## To reach net-zero in our existing portfolio we will:

- Develop asset-level trajectories for energy use intensity and emissions reductions, to set individual targets and clearly track progress
- Undertake a programme of detailed systems commissioning reviews and recommissioning actions to boost efficiency and enhance tenant comfort
- Certify assets to in-use building performance standards, establishing new energy efficiency improvement options
- Evaluate sites for additional renewable energy installations or upgrades to existing ones
- Transition away from fossil fuels used for heat, through electrification or renewable sources
- Roll out 'green gas' contracts to decarbonise our heating until the existing fossil fuel systems are phased out

# OUR APPROACH

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## For refurbishments on our future acquisitions we will:

- Use advanced energy modelling and design for performance approach to set a standard of 124 kWh<sub>e</sub>/m<sup>2</sup> NIA maximum whole building in-use energy, for all of our refurbishments. This target threshold has been set using our portfolio's best performing asset, verified as part of the 2019 footprint. This energy performance target is more stringent than the most recently published BBP REEB Good practice performance benchmark of 168 kWh<sub>e</sub>/m<sup>2</sup> NIA<sup>9</sup>. The target will be reviewed periodically and adjusted to reflect improvements in performance.
- Focus on complementary passive energy saving measures to enhance existing beneficial characteristics of the buildings, such as summer shading combined with thermal inertia to reduce cooling loads, improving tenant comfort, reducing energy consumption and requiring smaller cooling units at lower capital cost.
- Use smart technology, IoT and greater integration of systems than ever before to enhance real time data capabilities that will improve our energy efficiency and optimisation responses, better supporting our tenants.
- We commit to all-electric buildings, with no new installations of fossil-fuel-based systems. This will reduce system inefficiencies, take advantage of the UK's rapidly-decarbonising grid, and allow for more control and limit our exposure to emissions that are much harder to reduce.

<sup>9</sup> Better Buildings Partnership Real Estate Environmental Benchmark, REEB 2019 Benchmarks, pdf, Energy Benchmarks – Offices – Air Conditioned, [https://www.betterbuildingspartnership.co.uk/sites/default/files/media/attachment/BBP\\_REEB%20Benchmarks%202019\\_0.pdf](https://www.betterbuildingspartnership.co.uk/sites/default/files/media/attachment/BBP_REEB%20Benchmarks%202019_0.pdf)

# OUR APPROACH

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## Embodied emissions on future major refurbishments

The other major contributor to emissions is embodied carbon, particularly arising from the major refurbishments on our new acquisitions that are required to transform them into our vision of sustainable real estate. While our re-use and refurbishment of existing buildings avoids incurring carbon emissions associated with an entirely new building, some embodied emissions will inevitably be added through new materials, systems and products. Our aim is to further limit the amount of embodied carbon in our refurbishment through comprehensive actions:

- Our refurbishments will target 600 kgCO<sub>2</sub>e/m<sup>2</sup> GIA for embodied carbon, the LETI Low Carbon Primer 2020 target for whole life net-zero carbon, against the benchmark of 1,000 kgCO<sub>2</sub>e/m<sup>2</sup> GIA, the LETI Low Carbon Primer 'Business as usual' figure<sup>10</sup>. We will continually review and refine this limit on embodied emissions as we model our buildings and collect data in more detail over time.
- Whole life embodied carbon modelling at design stage, including end of life emissions. The models will be used to optimise use of the existing building and structure, reduce material use and design our waste
- Apply the principles of circular economy and an embodied carbon hierarchy. We commit to using low or zero emissions materials such as natural products that sequester carbon, reused components and recycled materials where possible rather than new products.

<sup>10</sup> LETI Embodied Carbon Primer, pdf, section 7.0 "Whole Life net-zero carbon – best practice targets", figure 7.1  
[https://b80d7a04-1c28-45e2-b904-e0715cface93.filesusr.com/ugd/252d09\\_8ceffcbcafdb43cf8a19ab9af5073b92.pdf](https://b80d7a04-1c28-45e2-b904-e0715cface93.filesusr.com/ugd/252d09_8ceffcbcafdb43cf8a19ab9af5073b92.pdf)

# OUR APPROACH

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## **Addressing our value chain emissions**

Our wider value chain emissions, the non-energy and non-embodied scope 3 sources, account for approximately 20% of our footprint. While normally challenging to measure, our engagement with our tenants and our monitoring systems means we have much better oversight of these emissions than is typical for the sector. We will develop new programmes to work closely with our tenants on an individual basis to set benchmarks using per unit area and per person metrics, backed by reporting and tracking dashboards, to deliver effective, tailored reduction plans.

Our scope 3 emissions from purchased good and services are the final challenge. While we have measured these emissions as part of our footprint, these have been calculated on a cost basis, with emissions factors allocated by the supplier's sector. The accuracy of this process needs to be improved so that we can develop and track a more meaningful reduction target. We will prioritise suppliers that have clearly demonstrated a commitment to a net-zero carbon journey, for instance by setting their own science-based targets or achieving carbon neutrality. We will work with others to encourage energy and emissions reduction strategies and improve their own carbon footprints.



# MONITORING AND DISCLOSURE

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Transparency and accuracy are integral aspects of our net-zero carbon process, which is why we will disclose our performance towards our targets at both portfolio and individual asset level<sup>11</sup>. Our annual emissions footprint will be independently verified to an international standard for assessing emissions (ISO 14064-2) coupled with PAS 2060 Carbon Neutrality certification to ensure that our emissions footprint is offset in full.

## **Our key annual reporting metrics at portfolio and asset level are:**

- Total emissions and emissions intensity for emissions arising from energy use (tCO<sub>2</sub>e & tCO<sub>2</sub>e/m<sup>2</sup> NIA)
- Total energy use and energy use intensity by energy type (kWh & kWh/m<sup>2</sup> NIA)
- Primary energy use and intensity (kWh & kWh/m<sup>2</sup> NIA)
  
- Total on-site renewable energy supplied and proportion of total energy use (kWh & %)
- Total Scope 3 emissions by source, and appropriate metrics:
  - Emissions from waste, total waste mass and waste mass per m<sup>2</sup> (kgCO<sub>2</sub>e, kg, kg/m<sup>2</sup> NIA)
  - Emissions from water, total water volume and water volume per m<sup>2</sup> (kgCO<sub>2</sub>e, m<sup>3</sup>, l/m<sup>2</sup> NIA)
  - Emissions from purchased goods and services (tCO<sub>2</sub>e)
  - Emissions from other energy activities, Well to Tank (WTT) and Transmission and Distribution Losses (T&D) (tCO<sub>2</sub>e)

<sup>11</sup> Individual assets will be anonymised to protect our tenant's data



# MONITORING AND DISCLOSURE

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## **When major refurbishments have completed we will report:**

- Design calculated embodied emissions and final measured embodied emissions for building lifecycle stages A1-A5<sup>12</sup> (tCO<sub>2</sub>e & kgCO<sub>2</sub>e/m<sup>2</sup> GIA)
- Proportion of natural, reused and recycled materials and components by weight/cost/avoided emissions (%)
- Calculated end of life emissions (tCO<sub>2</sub>e & kgCO<sub>2</sub>e/m<sup>2</sup> GIA)
- Design energy performance and carbon targets (kWh/m<sup>2</sup> NIA & kgCO<sub>2</sub>e/m<sup>2</sup> NIA)

## **The full details of our offsetting will be disclosed, publishing:**

- The offset project
- Verification scheme
- Total offsets purchased (tCO<sub>2</sub>)
- The public registry our offsets are hosted on, with link

<sup>12</sup> LETI Embodied Carbon Primer, pdf, section 7.0 “Whole Life net-zero carbon – best practice targets”, figure 7.1 [https://b80d7a04-1c28-45e2-b904-e0715cface93.filesusr.com/ugd/252d09\\_8ceffcbaafdb43cf8a19ab9af5073b92.pdf](https://b80d7a04-1c28-45e2-b904-e0715cface93.filesusr.com/ugd/252d09_8ceffcbaafdb43cf8a19ab9af5073b92.pdf)



# APPENDIX 1: DETAILED CARBON SCOPE TABLE & GREENHOUSE GAS PROTOCOL ALIGNMENT

# MONITORING AND DISCLOSURE

ADAPTED FROM THE BBP NET-ZERO CARBON PATHWAY FRAMEWORK APPENDIX 2<sup>13</sup>

Business Area	Sub-Area	GHG Protocol Reporting Category	Carbon Scope	Required in BBP Climate Commitment	Included in our Climate Commitment boundary	Further Comment
<b>Corporate</b>	Head-Office energy use	Company Facilities	1 & 2	Voluntary	No	Managed by partner organisations
	Company Vehicles	Company Vehicles	1	Voluntary	No	Managed by partner organisations
	Business travel (excluding commuting)	Business Travel	3	Voluntary	No	Managed by partner organisations
	Purchased Good and Services	Purchased Goods and Services	3	Voluntary	No	Managed by partner organisations
	Operational Waste Generated	Waste generated in operations	3	Voluntary	No	Managed by partner organisations
	Operational Water Use	Purchased Goods and Services	3	Voluntary	No	Managed by partner organisations
	Employee Commuting	Employee Commuting	3	Voluntary	No	Managed by partner organisations

<sup>13</sup> Appendix 2 - Detailed Carbon Scope Table & Greenhouse Gas Protocol Alignment, BBP net-zero Carbon Pathway Framework: <https://www.betterbuildingspartnership.co.uk/net-zero-carbon-pathway-framework>

# MONITORING AND DISCLOSURE

## ADAPTED FROM THE BBP NET-ZERO CARBON PATHWAY FRAMEWORK APPENDIX 2

Business Area	Sub-Area	GHG Protocol Reporting Category	Carbon Scope	Required in BBP Climate Commitment	Included in our Climate Commitment boundary	Further Comment
Managed buildings	Landlord purchased energy (electricity & fuels)	Investments (proportional to the investment)	1, 2, & 3	Yes	Yes	Scope 1 Direct Emissions (fuels) Scope 2 Indirect Emissions (Electricity) Scope 3.4 Other energy related activities (Well to tank & Transmission and distribution losses) Scope 3.13 Downstream Leased Assets (fuels and electricity)
	Tenant purchased energy (electricity & fuels)	Investments (proportional to the investment)	3	Yes	Yes	Scope 3.13 Downstream Leased Assets (fuels and electricity)
	Landlord refrigerants	Investments (proportional to the investment)	1	Yes	Yes	Scope 1 Direct Emissions
	Tenant refrigerants	Tenant Scope 3	3	No	No	Not within the Fund boundary
	Landlord purchased water	Investments (proportional to the investment)	3	Yes	Yes	Included in Scope 3.5 Emissions from Waste
	Tenant purchased water	Tenant Scope 3	3	No	Yes	Included in Scope 3.5 Emissions from Waste
	Landlord managed operational waste	Investments (proportional to the investment)	3	Yes	Yes	Scope 3.5 Emissions from Waste
	Tenant managed operational waste	Tenant Scope 3	3	No	Yes	Scope 3.5 Emissions from Waste

# MONITORING AND DISCLOSURE

## ADAPTED FROM THE BBP NET-ZERO CARBON PATHWAY FRAMEWORK APPENDIX 2

Business Area	Sub-Area	GHG Protocol Reporting Category	Carbon Scope	Required in BBP Climate Commitment	Included in our Climate Commitment boundary	Further Comment
<b>Managed buildings</b>	Visitors transport emissions	Tenant Scope 3	3	No	No	Not within the Fund boundary
	Tenant supply chain emissions	Tenant Scope 3	3	No	No	Not within the Fund boundary
	Landlord purchased capital goods & services	Purchased Goods and Services	3	Yes	Yes	Scope 3.3a/b Purchased Goods and Services (product/non-product)

# MONITORING AND DISCLOSURE

## ADAPTED FROM THE BBP NET-ZERO CARBON PATHWAY FRAMEWORK APPENDIX 2

Business Area	Sub-Area	GHG Protocol Reporting Category	Carbon Scope	Required in BBP Climate Commitment	Included in our Climate Commitment boundary	Further Comment
<b>Non-managed buildings</b>	Tenant purchased energy (electricity & fuels)	Investments (proportional to the investment)	3	Yes	Yes	Scope 3.13 Downstream Leased Assets
	Tenant refrigerants	Tenant Scope 3	3	No	No	Not within the Fund boundary
	Tenant purchased water	Tenant Scope 3	3	No	Yes	Included in Scope 3.5 Emissions from Waste
	Tenant managed operational waste	Tenant Scope 3	3	No	Yes	Scope 3.5 Emissions from Waste
	Visitors transport emissions	Tenant Scope 3	3	No	No	Not within the Fund boundary
	Tenant supply chain emissions	Tenant Scope 3	3	No	No	Not within the Fund boundary
	Landlord purchased capital goods & services	Purchased Goods and Services	3	Yes	Yes	Scope 3.3 Purchased Goods and Services (product/non-product)

# MONITORING AND DISCLOSURE

## ADAPTED FROM THE BBP NET-ZERO CARBON PATHWAY FRAMEWORK APPENDIX 2

Business Area	Sub-Area	GHG Protocol Reporting Category	Carbon Scope	Required in BBP Climate Commitment	Included in our Climate Commitment boundary	Further Comment
<b>Acquisition and Refurbishment</b>	New development	Purchased Goods and Services	3	Yes	Yes, construction embodied emissions A1-A5 <sup>14</sup>	Scope 3.3 Purchased Goods and Services (product/non-product)
	Refurbishments	Purchased Goods and Services	3	Yes	Yes, construction embodied emissions A1-A5 <sup>14</sup>	Scope 3.3 Purchased Goods and Services (product/non-product)
	Fit-out (landlord controlled)	Tenant Scope 3	3	Yes	Yes	Scope 3.3 Purchased Goods and Services (product/non-product)
	Fit-out (tenant controlled)	Tenant Scope 3	3	Yes	Yes	Scope 3.3 Purchased Goods and Services (product/non-product) Targets will be developed for 2030
	End of life	Tenant Scope 3	3	Not required	Yes	Scope 3.12 End of life treatment of sold products Targets will be developed for 2030

<sup>14</sup> EN 15978:2011 - Sustainability of construction works - Assessment of environmental performance of buildings - Calculation method, Figure 6 building life cycle, product and construction stages



# APPENDIX 2: DETAILED DELIVERY STRATEGY AND OUTCOMES



# DETAILED DELIVERY STRATEGY AND OUTCOMES

## OPERATIONAL EMISSIONS

Source	Action	Metric	Outcome
Operational energy	Adopt a science-based target for whole portfolio operational emissions that is aligned with the net-zero carbon 1.5 Degree Scenario trajectory.	tCO <sub>2</sub> e kWh/m <sup>2</sup> NIA kgCO <sub>2</sub> e/m <sup>2</sup> NIA	Reporting of annual total portfolio scope 1, 2 and 3 operational emissions. Year on year reduction absolute emissions of 4.2%
	We will develop building-level trajectories for energy intensity and emissions intensity reduction targets	kWh/m <sup>2</sup> NIA kgCO <sub>2</sub> e/m <sup>2</sup>	Individually monitored trajectories will help to ensure that the Fund is on track overall to deliver against the science-based target
	We will undertake new renewable energy systems assessments on our existing assets that have no renewable energy installations to determine potential for additional deployment and viability for the replacement of non-electrified heating systems.	% of portfolio with renewables installed % renewable energy generated	Viable systems will be installed on existing buildings to offset grid use and/or replace existing fossil fuel installations
	We will track peak demand for each asset as part of our energy monitoring programme and assess demand reduction opportunities.	Average kW demand kW/m <sup>2</sup> NIA metric for portfolio and asset with highest individual demand	Reducing demand will decrease grid stress on electrical distribution and mitigate capacity issues on our assets as we transition away from fossil fuel use in the portfolio.
	We will design all future major refurbishments with a whole building in use energy performance ceiling set at 125 kWh <sub>e</sub> /m <sup>2</sup> NIA. This design target will be managed using the Design for Performance process	kWh <sub>e</sub> /m <sup>2</sup> NIA	Design stage performance targets will enhance our ability to continually improve portfolio energy intensity performance and mitigate the effects of the Performance Gap
	No new installations of fossil fuel systems, both for replacement in existing portfolio and future acquisition refurbishments	% of total energy consumption from fossil fuels	Limit the exposure of the Fund and our tenants to possible future legislation and taxes against fossil fuel use and carbon emissions. Reduction in portfolio carbon emissions and total energy intensity through improved flexibility and adaptability.
	Renewable energy systems to be installed on-site as part of all new major refurbishments, either traditional external mounting or integrated into the building components.	% of portfolio with renewables installed % renewable energy generated	New refurbishments will rely less on grid supplied energy and lower grid capacity stress.
	All new major refurbishments with parking spaces shall install Electric Vehicle smart charging infrastructure for 100% of spaces up to 4, then 50% thereafter.	% car parking spaces with EV smart charging	Provide additional sustainable travel options for tenants and the potential for implementing energy demand reduction using smart charging technology.

# DETAILED DELIVERY STRATEGY AND OUTCOMES

## OPERATIONAL EMISSIONS

Source	Action	Metric	Outcome
<b>Refrigerants</b>	All new major refurbishments will utilise less environmentally harmful refrigerant gases in heat pumps and cooling systems. Building services design will minimise refrigerant volumes through limited pipe runs and enhanced in-use monitoring procedures	Annual total tCO <sub>2</sub> e from refrigerant fugitive emissions	Reduce our scope 1 operational emissions and scope 3 embodied emissions in our refurbishments impact arising directly from the installation and operation of heating and cooling systems in our portfolio
<b>Waste</b>	Develop building and tenant specific baselines and annual improvement targets for waste and recycling	kg/m <sup>2</sup> NIA kg/person kgCO <sub>2</sub> e/m <sup>2</sup> NIA	Reduction in total weight and volume of general waste, improvement in recycling rates and progression of waste through the higher tiers of recovery in the waste hierarchy
<b>Water</b>	Develop building and tenant specific baselines and annual improvement targets for water intensity	m <sup>3</sup> /m <sup>2</sup> NIA m <sup>3</sup> /person kgCO <sub>2</sub> e/m <sup>2</sup>	Reduction of total water consumption, development of clear benchmarking for the portfolio and individual assets and validate low water design
<b>Purchased goods and services</b>	Improve data collection and modelling of Fund operational purchased good and services across managed and managed buildings	tCO <sub>2</sub> /m <sup>2</sup>	Improved oversight of Scope 3 emissions footprint and identification of priority areas to improve

# DETAILED DELIVERY STRATEGY AND OUTCOMES

## EMBODIED CARBON AND RENEWABLE ENERGY

Source	Action	Metric	Outcome
<b>New Acquisition Refurbishment</b>	Embodied carbon modelling/mapping to be implemented at design stage to manage out embodied emissions at the beginning	tCO <sub>2</sub> /m <sup>2</sup> GIA design target	Maximise the benefits through identification of key embodied carbon reduction opportunities at the earliest stages in the building design. All major refurbishments will have an embodied carbon intensity limit of 600 kgCO <sub>2</sub> e/m <sup>2</sup> GIA, in accordance with the LETI 2020 target.
	Full major refurbishment embodied emissions across RICS stages A1-A5 to be measured, accounted for, reported and offset for all new acquisition refurbishments	tCO <sub>2</sub>	Transparent modelling of major refurbishment embodied emissions to be incorporated into the annual emissions footprint and included in the offsetting process.
	Embodied emissions intensity targets for all new acquisition refurbishments	kgCO <sub>2</sub> /m <sup>2</sup> GIA	Intensity targets will promote the advantages of refurbishment v new build and push for continual improvement in our design and construction processes.
	Implement principles of circular economy across construction, refurbishment and maintenance. Minimum level of re-used, recycled, natural or sequestering materials to be incorporated. Hierarchy of embodied carbon to be implemented: Avoid --> Minimise --> Alternative --> Compensate	% low/zero/negative materials as a reporting metric not minimum level (2030 for targets)	Enhance the whole life carbon performance of assets and the portfolio, minimise supply chain emissions and help to stimulate real estate circular economies.
<b>Energy tariffs</b>	Use of renewable energy tariffs for electricity and natural gas supply, across the whole portfolio.	% of total energy supplied by renewable tariffs % of total electricity supplied by renewable tariffs % of gas supplied by renewable tariffs	Existing managed assets have 100% renewable electricity, 'green' gas will be gradually introduced (by 2025) Engage with tenants through new programmes to encourage adoption of renewable electricity and gas tariffs across the non-managed assets (by 2030).
<b>Procurement</b>	Implementation of a PPA strategy to deliver a more robust approach for renewable energy in the portfolio.		Ensure that renewable energy used in the portfolio can clearly and transparently demonstrate additionality

# DETAILED DELIVERY STRATEGY AND OUTCOMES

## EMISSIONS OFFSETTING AND VERIFICATION

Aspect	Action	Metric	Outcome
<b>Offset volumes</b>	Purchase offsets equal to 110% of the annually measured operational energy and wider scope 3 emissions footprint. Embodied carbon emissions will be offset in full in the year that the refurbishments complete.	tCO <sub>2</sub> e offsets procured	Offsetting beyond the total footprint ensures that the Fund demonstrates best practice by accounting for any estimated emissions in the verified footprint and takes responsibility for the residual emissions that have not yet been reduced.
<b>Offset projects</b>	Only select accredited, GGR-type projects and assess management processes in place to evaluate longevity and effectiveness of sequestration	Disclosure of project details	Following the principles of net-zero carbon by focusing on credible, long-term removals of GHGs from the atmosphere
<b>Offset retirement</b>	All offsets to be retired annually on behalf of the Fund on a publicly accessible online register	Location of register or direct link to retirements	For transparency the full process of offsetting should be available, culminating in the retirement of the offsets in a public forum.
<b>Carbon footprint verification</b>	Independently verified Scope 1, 2 & 3 footprint to ISO 14064-2	Scope 1, 2 & 3 tCO <sub>2</sub> e	Transparently measured and verified footprint that can be publicly disclosed and demonstrate clear progress against our net-zero targets
<b>Offsetting verification</b>	Footprint is offset using GS or VCS certified carbon offsets, verified against the PAS 2060 Carbon Neutrality Standard	PAS 2060 Certification	We continue to achieve credible carbon neutral operation, but with a broader emissions scope matching our net-zero ambition

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