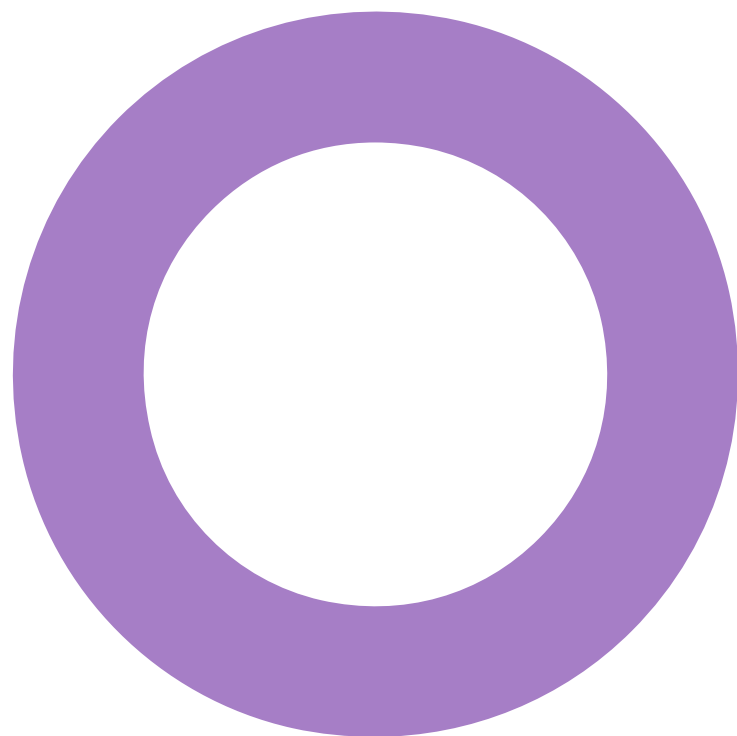


# Net Zero Carbon Strategy. Summary Report. 2020/21 Assessment.

HOARE LEA  
NET ZERO CARBON

REVISION 00 - 19 APRIL 2022



## Audit sheet.

Rev.	Date	Description of change / purpose of issue	Prepared	Reviewed	Authorised
00	19/04/2022	First issue of summary report	W.D.M. Naismith	A. Bateson	A. Bateson

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## Executive summary.

This report summarises Hoare Lea's net zero carbon strategy and carbon emissions assessment for 2021/21 (May 2020 – April 2021). In accordance with best industry practice our assessment follows the approach established by the UK-Green Building Council. We have referred to the UKGBC Zero Carbon Building Framework and our assessment was independently verified by an external auditor.

The assessment describes our approach to evaluating, reducing and offsetting carbon emissions arising from building energy use, business vehicle emissions and fugitive emissions (i.e. refrigerant gas leakage), as defined by international Greenhouse Gas Protocol for scope 1 & 2 greenhouse gas emissions.

### Our commitments.

Hoare Lea is a signatory of the World Green Building Council Net Zero Buildings commitment and the UN Race to Zero.

Hoare Lea is also a signatory of the Building Services Engineers Declaration of the Climate and Biodiversity Emergency. As such, we are committed to reducing our environmental impact and targeting net zero carbon emissions. This aligns with our purpose to be a planet conscious and human centric business.

### Our baseline emissions.

Our Scope 1 and 2 emissions baseline for 2020/21 was 475 tCO<sub>2</sub>e. Of this, 77% resulted from building sources and 23% from vehicles sources.

We used building energy consumption data from a previous typical year (2019) using the data collected in our Energy Saving Opportunities Scheme (ESOS) report. We did this because 2020/21 was an unusual period for office energy consumption, due to the pandemic conditions and low office occupancy. We have therefore taken a higher emissions baseline than likely to be expected in 2020/21.

The Hoare Lea offices included within the assessment were:

Abu Dhabi	Glasgow
Birmingham	Leeds
Bournemouth	London
Bristol	Manchester
Cambridge	Oxford
Cardiff	Plymouth

The building emissions were assessed using building energy consumption data and assumed fugitive emissions for cooling plant (arising from refrigerant leakage), as required by Greenhouse Gas Protocol. The vehicle emissions were based on partner vehicles and employee vehicles used for business purposes.

### Governance

Central to our net zero strategy, developing appropriate governance structures are critical to achieving robust, permanent and managed emissions reduction. Our governance strategy will involve increasing engagement, assigning responsibility and embedding net zero in our current practices. To oversee and promote our net zero buildings, we have formed a Net Zero Governance Group, who will provide guidance to office carbon managers, a newly created role for implementing energy savings measures in each of our offices.

### Reducing energy demand

Energy audits of the significant areas of energy use, including all our UK offices, were conducted by our Property Services team as part of the route to ESOS compliance and their findings inform our energy demand reduction strategy. We also set out our approach for cutting vehicle emissions.

### Dealing with residual emissions

We are taking the leadership approach to offset our residual emissions by establishing a net zero transition fund. In addition, we have secured a high-quality green electricity tariff to replace our current supplies where lease agreements allow.

### Offsetting

Following the UKGBC's offsetting guidance for demonstrating net zero leadership, our carbon price was set to the HM Treasury Green Book non-traded central scenario. For 2021, this is £70/tCO<sub>2</sub>e. Based on our emissions of 475 tCO<sub>2</sub>e, we have established a transition fund of £33,250 for 2020/21. The transition fund is comprised of two parts:

- Our baseline emissions were offset through an approved international carbon standard (we purchased Gold Standard certified offsets in a Nicaraguan afforestation programme at a cost of £13,250)
- The remainder of the transition fund will be spent on community carbon reduction projects that contribute towards the transition to net zero (this fund is £20,000)

### Transparency and verification.

We consider transparency and disclosure vital tools to securing robust net zero claims.

This report and its appendices have been audited by a third party to verify the approach and calculations used to determine our net zero balance.

We have also taken the step of publishing a summary of this report on our website. This will ensure our work remains visible to our people and collaborators, relevant to our industry and demonstrates alignment with our values.

### Strengthening our commitment.

Our net zero declaration is not a one-off exercise; we must achieve significant reductions in our underlying emissions, continuously improving the energy performance of our offices and broadening the scope of our emissions boundary in the coming years.

The forthcoming update to our Sustainable Procurement Policy will phase in our identification and reduction of Scope 3 emissions.

We work across different scales, sectors and geographies. To understand the impact of our consultancy on the built environment and organisations, we have also begun to collect data for measuring the energy performance of our completed projects.

### Useful Links.

- Greenhouse Gas Protocol <https://ghgprotocol.org/>
- World Green Building Council Net Zero Commitment <https://www.worldgbc.org/thecommitment>
- UKGBC Net Zero Buildings Framework <https://www.ukgbc.org/ukgbc-work/net-zero-carbon-buildings-framework/>
- Building Services Engineers Declaration of the Climate & Biodiversity Emergency <https://www.buildingservicesengineersdeclare.com/>

## 1. Introduction.

Tackling the climate change requires action. As an engineering consultancy, we deeply understand the impact that the built environment can have on our planet. We are therefore a proud signatory of the WorldGBC's Net Zero Buildings Commitment.

We strive for sustainability in all that we do. As such, this commitment to become net zero in our firm's operations is a natural step, and one that we are already embarking on with determination and pride.

We are looking forward to putting this written commitment into practice and playing our part in accelerating the transition to a net-zero carbon future.

This report is a condensed version of our full net zero strategy, which sets out how we will meet our WorldGBC Net Zero Buildings Commitment for the period FY 2020/21, detailing our approach, methodology and supporting evidence.

We have structured this report to give our responses to four key questions:

- **Why net zero?**  
We provide context for this report and the basis for our net zero commitment.
- **What we are trying to achieve?**  
We set out our approach to realising a net zero future, with the key theme of our response to climate change informed by UKGBC and WorldGBC guidance.
- **What is our baseline and emissions boundary?**  
We establish our boundary condition, emissions sources and baseline, followed by an analysis of the current energy performance of our offices and the wider energy landscape.
- **How we will achieve net zero carbon?**  
We explore the net zero emissions target and the three strands of our response: reducing energy demand, decarbonisation of heat and offsetting residual emissions.

Our answers provide the basis for our net zero claim and are further expanded upon in the appendices, where we also set out our position on offsetting in the built environment and our strategy for improving data collection.

### 1.1 Setting the scene.

Climate change is the most important issue facing our planet today. In response, the world came together to set a common goal; the Paris agreement, negotiated between 194 countries and the European Union, committed signatories to keeping the average global temperature to “well below” 2 °C above pre-industrial levels, and if possible 1.5 °C. We are almost at that limit. In 2020, global warming was 1.2 °C above pre-industrial levels, maintaining the upwards trajectory seen in recent years<sup>1</sup>.

The environmental, economic and social impacts have already been severe: continued biodiversity loss threatens global food production, extreme weather events have caused billions of pounds in damage and the climate migrant crisis is escalating.

What is more, the future impacts of climate change will be unevenly distributed. Most of the harm will almost certainly be felt by those who are the most vulnerable to the impacts of climate change, with threatening the livelihoods and lives of countless people worldwide. The frequency and severity of extreme weather events is expected to increase, meaning stronger winds, heavier rainfall and more regular flooding and droughts.

The Intergovernmental Panel on Climate Change published their pivotal report, Global Warming of 1.5 °C, in 2019, showing that current commitments by the Paris Agreement signatories will be insufficient to prevent the world's average temperature rising 2 °C above pre-industrial levels<sup>2</sup>. Scientists in the report are clear: we have a decade to radically alter our current trajectory and embark on a more sustainable path or suffer the most devastating impacts of climate change. Avoiding climate tipping points will require rapid decarbonization across the world by 2030, uniting people, businesses and governments. COP 26, held this year in Glasgow, kept the ambition of limiting global to 1.5 °C alive.

### 1.2 Our role in a net zero future.

Encouragingly, two thirds of the global economy is now covered by net zero pledges despite the idea being relatively unheard of only a decade ago<sup>3</sup>.

These voluntary commitments are pushing more and more buildings to be net zero carbon. This makes sense: the IEA (International Energy Agency) calculates that constructing and operating buildings consumes 36% of the world's energy and contributes 40% of energy-related carbon emissions<sup>4</sup>.

We are at the forefront of the net zero transition; advocating for ambitious energy reduction targets, developing comprehensive net zero frameworks with industry partners, and committing ourselves to releasing ambition climate targets.

#### Our corporate responsibility strategy

This is evident in our corporate responsibility strategy.

We are a climate-conscious, human-centric consultancy. Our corporate responsibility strategy aligns with our sense of purpose; both in terms of how we operate as a business and how we add value to society<sup>5</sup>.

Our ambitions have been developed through the lens of our five capitals framework, to ensure we consider: 1. the physical environment 2. our natural world 3. human wellbeing 4. social impact 5. economic benefit. This holistic approach means our responsibility in these areas is an opportunity rather than a challenge to overcome, with all five pillars aligning with our net zero commitment.

#### World Green Building Council's Net Zero Carbon Buildings Commitment

Acting on our corporate responsibility strategy, to mark the start of World Green Building Week 2020, we were proud to announce that we became signatories to the World Green Building Council's (WorldGBC) Net Zero Carbon Buildings Commitment<sup>6</sup>.

As our Managing Partner Justin Spencer explained:

*“Tackling the climate and biodiversity emergency requires action. As an engineering consultancy, we deeply understand the impact that the built environment can have on our planet. We are therefore a proud signatory of the WorldGBC's Net Zero Buildings Commitment.”*

#### Building Services Engineers Climate and Biodiversity Declaration

We are also proud also be one of the founding signatories of the Building Services Engineers Climate and Biodiversity Declaration<sup>7</sup>. The initiative, backed by 100 other organisations, calls for better knowledge sharing and awareness, elevating the role of sustainability in all our work and redrawing the criteria for success.

Our Head of Sustainability, Ashley Bateson, is the Declaration's steering group chair. By extending our influence within the industry and our advocacy role outside it, we can enable the construction sector to take centre stage in mitigating environmental harms and collaborate for a sustainable future.

<sup>1</sup> [https://library.wmo.int/index.php?lvl=notice\\_display&id=21880#.YS9LAI5KhaR](https://library.wmo.int/index.php?lvl=notice_display&id=21880#.YS9LAI5KhaR)

<sup>2</sup> <https://www.ipcc.ch/sr15/>

<sup>3</sup> <https://eciu.net/analysis/reports/2021/taking-stock-assessment-net-zero-targets>

<sup>4</sup> <https://www.iea.org/topics/buildings>

<sup>5</sup> <https://hoarelea.com/about-us/corporateresponsibility/>

<sup>6</sup> <https://hoarelea.com/2020/09/21/our-net-zero-carbon-commitment/>

<sup>7</sup> <https://www.buildingservicesengineersdeclare.com/>

## 2. What we are trying to achieve?

### 2.1 Defining net zero: WorldGBC commitment.

Launched in 2018, the Net Zero Carbon Buildings Commitment is a mechanism developed by the WorldGBC to encourage organisations, cities and states to demonstrate climate leadership<sup>8</sup>.

The five stages of our commitment include<sup>9</sup>:

1. **Commit:** Commit to only occupying assets that are net zero carbon in operation by 2030. We have opted to occupy net zero buildings in 2021.
2. **Disclose:** Measure and disclose energy consumption and emissions data, made publicly available via annual report.
3. **Act:** Develop a firm wide carbon reduction strategy and action plan for all occupied assets. Identify and implement feasible energy saving and efficiency opportunities, and on-site renewable energy sources, and invest in off-site renewables or carbon offsets for the balance.
4. **Verify:** Verify emissions data annually via third party verification.
5. **Advocate:** Continue to contribute to research and publications on net zero carbon. Increase commitment to share knowledge on net carbon to clients and other stakeholders, including as chair of the Building Services Engineers Climate Emergency Declaration initiative.

### 2.2 UKGBC Net zero framework and guidance.

Country specific Green Building Council's, such as the UKGBC, have in turn produced frameworks setting out how these ambitious net zero targets should be met. We have followed the UKGBC Net Zero Carbon Building Framework to make our own net zero claims.

#### Net Zero Carbon Buildings: A Framework Definition

The UKGBC sets out the following definition for operating net zero buildings<sup>10</sup>:

*"When the amount of carbon emissions associated with the building's operational energy on an annual basis is zero or negative. A net zero carbon building is highly energy efficient and powered from on-site and/or off-site renewable energy sources, with any remaining carbon balance offset."*

#### Net zero carbon: energy performance targets for offices

The UKGBC have also published guidance on the levels of energy performance that offices, both new and existing, should target to achieve net zero<sup>11</sup>.

#### Renewable Energy Procurement & Carbon Offsetting

The UKGBC have also developed guidance on the procurement of renewable energy and how to robustly deal with residual emissions<sup>12</sup>. The key messages in the guidance are that the only zero carbon energy available for procurement is electricity supplied via 'high quality' green tariffs (defined in the guidance) and that the netting off of any residual emissions must be through the use of offset credits which meet a specific set of criteria which ensure their quality.

The guidance also establishes other important principles such as the use of a transition fund where organisations set an internal carbon price each year which is above the market cost of good quality offset credits. Part of the fund is to be used for the procurement of offsets equal to measured annual residual emissions with the remainder being spent on other activities which support the move to net zero.

<sup>8</sup> <https://www.worldgbc.org/thecommitment>

<sup>9</sup> [https://worldgbc.org/sites/default/files/Hoare%20Lea%20LLP%20Indesign%20Profile\\_Final.pdf](https://worldgbc.org/sites/default/files/Hoare%20Lea%20LLP%20Indesign%20Profile_Final.pdf)

<sup>10</sup> <https://www.ukgbc.org/ukgbc-work/net-zero-carbon-buildings-a-framework-definition/>

## 3. What is our emissions boundary and baseline?

Two important concepts when considering organisational carbon emissions are the boundary condition, (i.e. what operational emissions are to be reported) and the baseline against which progress can be measured. The boundary condition for this study was set out in the WorldGBC and UKGBC guidance documents and has been subsequently refined by our net zero steering group and according to the availability of data.

### 3.1 Emissions scopes.

Greenhouse gas (GHG) emission sources are categorised into three scopes to ensure responsibility for emissions can be accurately allocated and so that emissions are not double counted across organisations, as encapsulated by Figure 1. We have focused on Scope 1 and Scope 2 building energy emissions, as required by WorldGBC. We have also elected to include the Scope 1 emissions from our corporate fleet vehicles and refrigerants. Electricity export (e.g. excess generation by photovoltaic panels) and the contribution of EV charging has been omitted from the baseline, but this is likely increasing our baseline emissions than otherwise would be the case with their inclusion.

#### Direct:

**Scope 1:** Emissions resulting from activities under the direct control of your organisation, such as gas boiler emissions, fleet vehicle emissions and on-site refrigerant leakage.

#### Indirect:

**Scope 2:** Emissions arising from energy purchased by your organisation for its operations, such as power or district heating

#### Secondary indirect:

**Scope 3:** Emissions arising from associated activities not directly controlled by your organisation, such as leased assets, procurement of equipment, employee commuting, water use, and waste management.

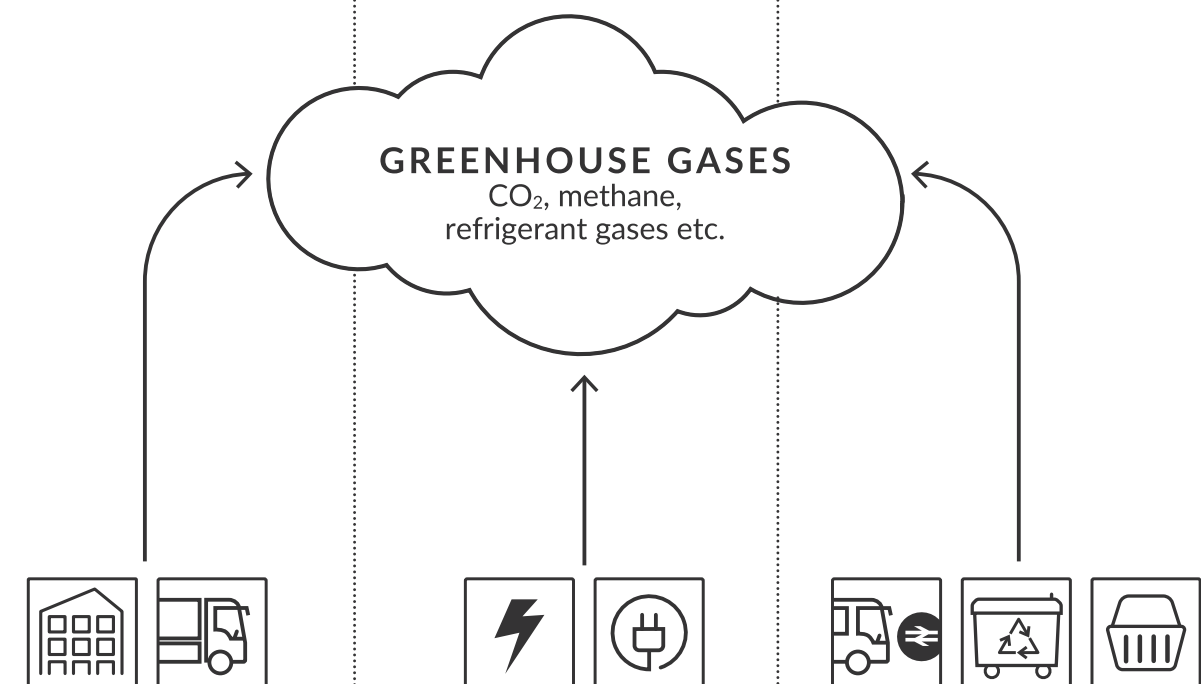


Figure 1: Diagram emissions scopes and responsibilities. Alongside the three scopes, some emissions are required to be reported as out of scope. No out of scope emissions are considered relevant to Hoare Lea.

<sup>11</sup> <https://www.ukgbc.org/ukgbc-work/net-zero-carbon-energy-performance-targets-for-offices/>

<sup>12</sup> <https://www.ukgbc.org/ukgbc-work/renewable-energy-procurement-carbon-offsetting-guidance-for-net-zero-carbon-buildings/>

### 3.2 Operational control.

As well as emissions sources, the organisational boundary should also be defined in terms of the assets and activities to be included. We have applied the operational control approach as defined by the HM Government Environmental Reporting Guidelines (which are in turn based on the World Resource Institute Greenhouse Gas Protocol) which set out the best practice approach to reporting. This control approach effectively says that if you have operational control of the emissions sources, it is reasonable that you should be responsible for those emissions.

### 3.3 Boundary.

The emissions sources included within the boundary condition are summarised in Table 1:

Table 1: Emissions sources.

Scope	Included in boundary	Excluded from boundary as outside of WorldGBC scope
1	<ul style="list-style-type: none"> <li>Fossil fuels</li> <li>Fugitive emissions (arising from refrigerant gas leakage)</li> <li>Fossil fuels used fleet vehicles for business use</li> </ul>	<ul style="list-style-type: none"> <li>Fossil fuel used in equipment (such as external maintenance equipment)</li> <li>Fossil fuels used in fleet vehicles for personal use</li> </ul>
2	<ul style="list-style-type: none"> <li>Purchased electricity (including EV charging).</li> <li>Purchased district/ communal heating and cooling.</li> </ul>	<ul style="list-style-type: none"> <li>Other purchased energy</li> </ul>

#### Data

For our offices, we have calculated Scope 1 and 2 emissions using data collected over the period August 2018 to July 2019. The data has been sourced from the Energy Saving Opportunities Scheme (ESOS) report prepared in February 2020 by our Property Services Group.<sup>13</sup> Whilst we recognise that this approach raises questions about our net zero claim for FY 2020/2021 the pandemic had the following consequences for our emissions reporting:

- We were not able to access our offices to take meter readings to record gas, electricity and heat consumption, meaning that we have incomplete data for the pandemic period
- We were focussed on dealing with the impacts of the pandemic and not office energy consumption
- Whilst we cannot be certain until we analyse the data, it is likely our Scope 1 and 2 emissions will have decreased over the preceding 18 months.

Weighing up the above factors, we believe our use of the August 2018 to July 2019 ESOS data provides a more realistic baseline and is entirely reasonable in this instance.

Fugitive or refrigerant emissions have been determined based on equipment nameplate rating for refrigerant type and charge, with annual average leakage rates assumed according to the product types detailed in CIBSE TM65 Table 4.4<sup>14</sup>.

For our vehicles, we have calculated Scope 1 emissions associated with partner vehicles from May 2018 to April 2019, captured as part of financial reporting, and for our other vehicles, August 2018 to July 2019 as part of the ESOS data.

### 3.4 Baseline

Our emissions baseline for May 2020 to April 2021 (FY 2020/21) is shown in Figure 2 for our Scope 1 and 2 emissions with a total emissions of 475 tCO<sub>2</sub>e. Of this, 77% resulted from building sources and 23% vehicle emissions.

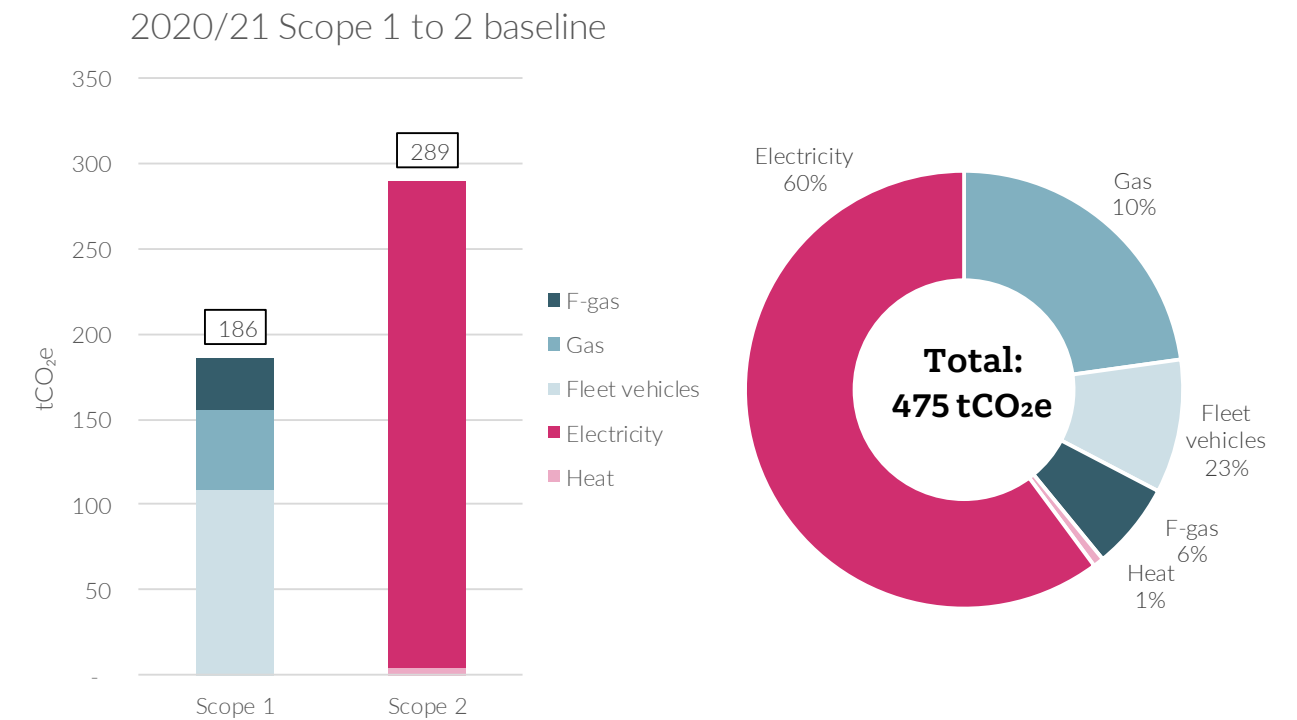


Figure 2: Scope 1 and 2 baseline emissions for FY 2020/21.

For a breakdown of our baseline emissions, see Appendix A: Baseline and emissions factors.

For a tabular summary of the energy consumption and resulting emissions from our offices aligned with the UKGBC accounting framework, see Appendix B: Net zero carbon buildings – operational minimum reporting template.

### 3.5 Metering and reporting.

Underpinning all of our work on net zero is the need to ensure that the way in which we report our impacts and progress toward reducing them aligns as closely as possible to best practice guidance (as defined by the HM Government Environmental Reporting Guidelines and the GHG Protocol).

To enable improved data capture and quality, we have surveyed our existing electricity, gas and heat meters. We have engaged a specialist firm to undertake automatic meter reading (AMR) upgrades where we control meters and will push for the same for our landlord submeters.

<sup>13</sup> Our Abu Dhabi office is located within shared co-working space, with energy costs included in rent. Based on our 15 m<sup>2</sup>, we have benchmarked consumption on Real Estate Environmental Benchmark Air Conditioned Typical Practice value and applied a 30% penalty to estimate consumption.

<sup>14</sup> <https://www.cibse.org/knowledge/knowledge-items/detail?id=a0q3Y00000IPZOHQAP>

## 4. How we will achieve net zero carbon?

### 4.1 Emissions reduction trajectory.

It is important to recognise that there is a practical (and economic) limit to how close to zero emissions any organisation can come. A question flowing from the understanding that we cannot, at least in the short term based on currently anticipated technology, reasonably expect to get to absolute zero, is how far we should aim to decarbonise before using offsetting.

For our offices, we have defined an upper energy use intensity limit according to UKGBC guidance and a number of our buildings are failing to meet the 2020-25 UKGBC energy use intensity targets. To ensure continuous improvement, the UKGBC also tighten energy use intensity requirements over time, shown by Figure 3, whilst concurrently requiring fossil fuels to be phased out.

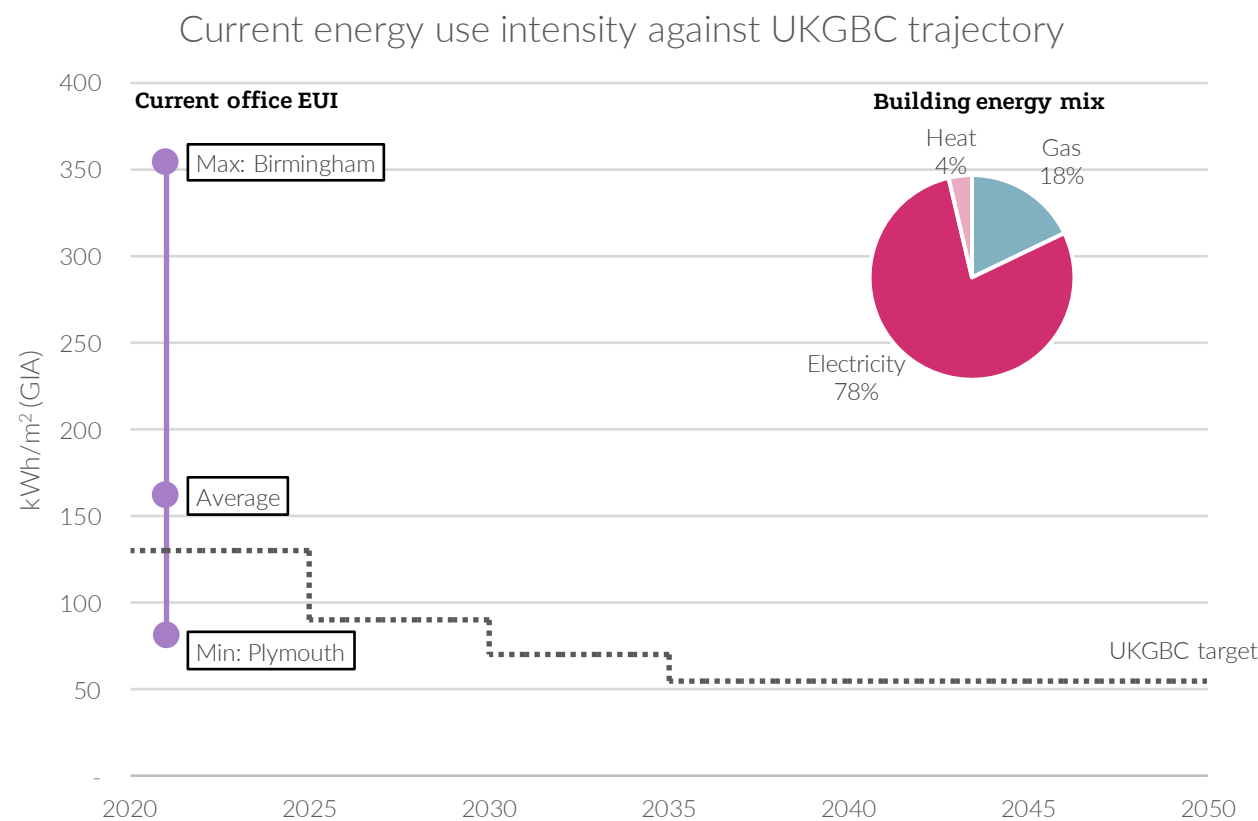


Figure 3: Range of current office energy intensity against the UKGBC trajectory (not shown kWh<sub>e</sub>/m<sup>2</sup>) to 2050 (Abu Dhabi office included in assessment but not shown here). The pie chart in the top right shows the current building energy mix by fuel type.

In recognition of this shortcoming, we have developed a comprehensive action plan, setting out how the UKGBC target will be met in subsequent years. We will focus our time and financial resource on the worst performing offices first, as these will likely offer the biggest and most cost-effective savings. In the coming years, we will set specific, measurable targets for energy demand reduction so that all offices can meet the UKGBC trajectory in the future.

### 4.2 Governance.

Mobilising governance gives us the best chance of realising meaningful, long-lasting, and comprehensive positive impact on sustainability outcomes. Without an organisational focus on reducing carbon emissions, at best the breadth of impact is reduced, and at worst we are mostly relying on serendipity. With focus, we can create intent which leads to specific, considered, purposeful outcomes. We have proposed a series of policies

and actions, although we know this does not guarantee outcomes on its own (setting policy ≠ compliance with policy). Therefore, we must not only establish how decisions are made but how compliance is monitored.

### Engagement

Active support will greatly increase the chances of successfully operating net zero buildings. We want to use the leadership position we have taken on net zero buildings to enable every member of staff to know what and how they can get involved to achieve this ambition.

### Responsibility

Creating high level accountability means that objectives can be cascaded both broadly across Hoare Lea and at all levels of responsibility. The cascade of responsibility is critical to ensure that the net zero targets are visible to all staff and that they have a flexible way of playing their part in the response. A key aspect of our governance changes is to align primary work-related goals with carbon reduction for all members of staff.

### Delivering net zero buildings

We have established a steering group to help oversee our net zero buildings. This is not in lieu of the integrated approach set out above but is intended to bring all our actions together. This group will respond to all in-scope emissions sources, managing the implementation of our emissions reduction strategies and administering our transition fund, whilst also monitoring the refinement of data collection and reporting.

The steering group will collaborate with Environmental Management (EM) representative in each office to bolster data collection as they have a key role in promoting awareness and compliance with the firm's EM systems, and in engendering an environmentally conscious culture within their office and the firm as a whole.

To implement the carbon reduction strategy put forward in this report, each Hoare Lea office has designated an Office Carbon Project Manager to work with the steering group on reviewing and project managing the implementation of office energy saving measures (see below).

### 4.3 Reducing energy demand.

For any strategy, it is essential to focus on reducing demand whether that be energy or any other resource; only using what we need is a key cornerstone of carbon management. It typically involves implementing energy conservation measures (ECMs). Disregarding the associated carbon benefit, ECMs are often good value for money. The ESOS report details the ECMs identified by our Properties Services team. Where judged to be technically and financially feasible, we will implement ECMs over the next three years, after which time we will review the list of recommendations. Implementing ECMs will be our first priority for reducing energy demand.

### 4.4 Minimising the impact of F-gases (refrigerants).

Acknowledging technical limitations and views of building owners, we will explore possibility of replacing refrigerants with low GWP alternatives at the end of their system life or potentially during re-gassing.

### 4.5 Increasing renewable supply.

In consultation with building owners, we will continue to explore opportunities to boost our renewable energy supply. Installations are mutually beneficial, reducing our electricity related emissions and costs whilst cutting the owner's Scope 3 emissions and raising the property's market value.

### 4.6 Moving towards more sustainable modes of transport.

Vehicle emissions constitute approximately 23% of our baseline. Both the amount we travel and the way we do it play a part in our overall climate impact. This is a national problem; transport accounted for 27% of UK emissions in 2018. Recognising the need to decarbonise this sector, we must do everything possible to both reduce travel and encourage a shift to sustainable modes. In both respects, transport patterns are being disrupted by wider societal trends. The hard pivot to homeworking enforced by the pandemic taught us an industry that we are able to adapt and ultimately succeed in conducting virtual meetings. As lockdown restrictions ease, we expect this transition to become permanent, with routine meetings conducted virtually. We aim to ensure that all of our offices are equipped with showers and changing rooms and we are exploring a



number of strategies to further enable cycling and walking. Other sustainable transport options such as buses, trains, and ride-hailing are all close to our offices. Lastly, the most imminent and significant disrupter of the UK's transport is the widespread use of electric vehicles (EVs), for which we will provide options on the company car selection, and locate charging points at our offices.

#### 4.7 Phasing out fossil fuels in buildings.

Gas accounts for over 10% of our emissions and is used for provision of space heating and hot water, meaning that significant emissions reductions could be achieved by switching to different technologies. However, it is also a challenge as the majority of buildings have their building services infrastructure geared around the use of fossil fuels for heat, meaning that significant changes are required to enable the use of other systems. Nonetheless, the combustion of fossil fuels is inherently unsustainable both in terms of its supply and its impact on climate change as well as being undesirable in terms of impact on local air quality. Currently, the best solution is to use electrically derived heat, whether by connecting a heat main powered electrically, or using local solutions such as heat pumps.

Where we operate gas-fired boilers, we aim to transitioning to electrically derived heating (subject to lease conditions and landlord agreement). Where we work in a tenant demise, our ability to firmly commit and plan for the phasing out of fossil fuels is limited. However, we will push for public policy change and engage with building owners.

#### 4.8 Dealing with residual emissions.

Our long-term aspiration is to occupy net zero buildings by reducing energy demand as far as possible and sourcing the energy that is required from high quality renewable sources. Realising this goal in 2021 has proved very ambitious, compressing our timescales for implementing measures discussed above.

As a consequence, we have opted to set out detailed plans for implementing these items in the coming years, as previously discussed for ECMs and phasing out fossil fuels. This issue also applies to renewable energy procurement, where our data reporting period and length of existing of contracts have precluded us from implementing this step of the UKGBC guidance in the first year of our net zero carbon reporting. We have established the process for purchasing electricity via a high-quality green tariff with Ecotricity in future years and we will collaborate with landlords where we do not control the supply to facilitate the transition.

This has meant we are relying on carbon offsetting to deal with our residual emissions, including electricity, for FY 2020/21. We are, however, taking the leadership approach to carbon offsetting by establishing a transition fund to further support the transition to net zero.

#### Transition fund

Following the UKGBC's offsetting guidance for demonstrating net zero leadership, our carbon price was set to the HM Treasury Green Book non-traded central scenario. For 2021, this is £70/tCO<sub>2</sub>e. Based on our emissions of 475 tCO<sub>2</sub>e, we have established a transition fund of £33,250 for 2020/21<sup>15</sup>. The transition fund is comprised of two parts:

- Our baseline emissions were offset through an approved international carbon standard (we purchased Gold Standard certified offsets in a Nicaraguan afforestation programme at a cost of £13,250)
- The remainder of the transition fund will be spent on community carbon reduction projects that contribute towards the transition to net zero (this fund is £20,000)

#### Carbon offsetting

Accepting that we are going to be making an ongoing investment in offsetting, we want to ensure that the investment has maximum impact. As far as possible, we want our investments to align with the Oxford Principles for Net Zero Aligned Carbon Offsetting but to also maximise non-carbon benefits in line with our

<sup>15</sup> 475 tCO<sub>2</sub>e is rounded up to 476 tCO<sub>2</sub>e

<sup>16</sup> <https://www.smithschool.ox.ac.uk/publications/reports/Oxford-Offsetting-Principles-2020.pdf>

corporate responsibility strategy<sup>16</sup>. In the context of our corporate responsibility strategy, investing in carbon removal projects such as afforestation, a Nature Based Solution, would both remove carbon from the atmosphere and support other ecosystem benefits; planting trees sustains biodiversity, provides active water filtration and generates employment. For these reasons, we purchased offsets generated by The Nicaforest High Impact Reforestation Program, using the Gold Standard. The offset certificate is provided in the appendix.

The Nicaforest Program has 490 hectares of land under management and aims to contribute to the creation of a sustainable value-chain by working closely with local landowners in a Shared Benefit Scheme. The program plants teak and other valuable species for future sustainable timber production and added-value wood production as well as other measures aimed at increasing resilience in the local municipalities. The forests offer a natural habitat for native animals and plants, protect and enrich the soil, save and filter water and contribute to the mitigation of the greenhouse effect. The Nicaforest Program is certified by Gold Standard and Forestry Stewardship Council (FSC). This program has already planted approximately 360,000 trees.

As of the end of 2018, this program sequestered 45,624 tCO<sub>2</sub>e with availability for future sequestering of 32,460 tCO<sub>2</sub>e. The tree planting programme uses deforested land only.



#### Remainder of the transition fund

As an engineering consultancy, we recognise the role the built environment has to play in mitigating its ~40% contribution to the national carbon footprint and have decided to pledge the remainder of our transition fund in support. Specifically, we will use the money to implement energy efficiency improvements or enable the retrofit of LZC technologies in one or more community projects, such as school, charity or community buildings. As an example, school buildings are at the forefront of the government's push to decarbonise the UK; all new Department for Education schools must be designed as net zero.<sup>17</sup> We have approximately £20,000 available in our transition fund for community projects after purchasing offsets.

#### 4.9 Extending our influence and ambition.

Our net zero declaration is not a one-off exercise; we must achieve significant reductions in our underlying emissions, continuously improving the energy performance of our offices and broadening the scope of our emissions boundary in the coming years. The WorldGBC require that organisations demonstrate leadership to support the transition towards net zero carbon. In response, we anticipate expanding our net zero claim to cover Scope 3 emissions in the coming years. As precursor, the forthcoming update to our Sustainable Procurement Policy will aim to influence and reduce Scope 3 emissions and give consideration to the embodied carbon of refurbishments.

<sup>17</sup> <https://www.gov.uk/government/publications/output-specification-generic-design-brief-and-technical-annexes>

#### **4.10 Verifying our net zero balance.**

A critical facet of any net zero strategy is disclosure - inviting scrutiny should help establish the robustness of our net zero building claim and increasing transparency will ensure consistency across reporting organisations, making it easier to assess progress. The full version of this report and its appendices have been audited by a third party to verify the approach and calculations used to determine our net zero balance in line with UKGBC and WorldGBC requirements. Their letter of confirmation is included in Appendix D: Third-party audit letter.

We currently propose to submit the audit verification letter alongside our own report to the WorldGBC when the submission window is next open. Regardless, disclosure of our net zero claim should be made through publicly accessible information and we are opting to 'show our working' by publishing this condensed version of our report on our website. By committing to openness, we risk our collaborators and clients identifying shortcomings in our net zero claim. We welcome all comments – continuous improvement and refinement of reporting is a central tenet of carbon management.

## Appendix A: Baseline and emissions factors.

### Baseline.

Table 2 sets out the breakdown of the emissions baseline for May 2020 to April 2021. The emissions factors applied are detailed in the next section.

Table 2: 2020/21 emissions baseline breakdown.

Emission source	Data	Emissions tCO <sub>2</sub> e	% of baseline	Notes
<b>Scope 1</b>				
Mains gas	Energy, kWh	47.0	10%	Combination of metered and unmetered data
Fleet vehicles	Distance, miles	108.3	23%	Partner and non-partner vehicles reporting timelines do not coincide
Fugitive emissions	Mass of refrigerant, kg	30.5	6%	Estimated
<b>Scope 1 totals</b>		<b>185.8</b>	<b>39%</b>	
<b>Scope 2</b>				
Grid electricity (Location based)	Energy, kWh	285.7	60%	Combination of metered and unmetered data
Heat	Energy, kWh	3.7	1%	Connection to King's Cross district heating network
<b>Scope 2 totals</b>		<b>289.5</b>	<b>61%</b>	
<b>Scope 1 and 2 total</b>		<b>475.3</b>		
<b>Intensity metrics</b>	Gross area	8,764 m <sup>2</sup>	0.054 tCO <sub>2</sub> e/m <sup>2</sup>	
	Staff FTE	898	0.529 tCO <sub>2</sub> e/FTE	

### Emissions factors.

#### Energy

In line with UKGBC carbon accounting guidelines, emissions factors have been sourced from the of the UK Government Greenhouse reporting conversion factors. With the exception of the King's Cross heat network (as set below), emissions factors have been sourced from the 2019 version as it covers the period over which the energy data was recorded.<sup>18</sup>

As the emissions factors for gas has remained relatively constant from 2019 to 2021, it is considered acceptable to use these figures. For electricity, the emissions factors have decreased significantly in recent

years (17% reduction from 2021 to 2019), and so we are overestimating the emissions associated with electricity use should we have repeated our consumption over the past year.

The emissions factor for the King's Cross district heat network, which is CHP led, has been set as 0.0719 kgCO<sub>2</sub>e/kWh in the King's Cross Utilities Guide prepared by The King's Cross Central Limited Partnership.

This value was calculated in 2016 and was the most recent available at the time of preparing this report. The possibility of using an updated factor will be investigated for future years.

#### Abu Dhabi office

The electricity emissions factors for the Abu Dhabi office have been sourced from the Dubai Electricity and Water Authority 2019 Sustainability Report.<sup>19</sup> Without access to a more reflective value, the emissions factor for gas is assumed to be the same as the value for the UK.

#### Electricity – market-based factors

The UKGBC also requires that dual reporting is undertaken for electricity, covering both location-based and market-based factors. The UK Government Greenhouse reporting conversion factors discussed above are location-based factors.

For market-based factors, the UKGBC state that electricity sourced from renewable electricity procurement mix<sup>20</sup> has an emissions factor of 0.000 kgCO<sub>2</sub>e/kWh, with all other electricity assigned the residual grid emissions factor. BEIS does not publish this value, and the UKGBC recommend that it is sourced from the Association of Issuing Bodies, which publishes an annual residual grid emissions factor for Great Britain (Northern Ireland and Ireland are combined).<sup>21</sup> We have not able to source market-based factors for our Abu Dhabi office and so location-based factors have again been used.

#### Fugitive emissions

100-year time horizon industry standard global warming potential values (GWP) have been used for the R410a (2088), R22 (1810), R407C (1774) and R134a (1430) refrigerants in our HVAC systems.

#### Transport

For partner vehicles, an average emissions factor was calculated according to emissions per kilometre (kgCO<sub>2</sub>e/km) values sourced from by Driver and Vehicle Licensing Agency according to vehicle registration number. This average value was calculated as 0.148 kgCO<sub>2</sub>e/km as part of our annual reporting.

For non-partner vehicles, the same approach was taken where vehicle registration number was provided. Where this data was not available, annual average factors were sourced from the of the UK Government Greenhouse reporting conversion factors for 2019, depending on car size and fuel. The average value was calculated as 0.095 kgCO<sub>2</sub>e/km as part of the ESOS reporting.

<sup>18</sup> <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>.

<sup>19</sup> <https://www.dewa.gov.ae/~media/Files/Customr/Sustainability%20Reports/DEWA%20Sustainability%20Report%202019%20EN.ashx>

<sup>20</sup> The renewable energy mix includes electricity sourced from onsite owned generation, an onsite PPA with new unsubsidised (private wire), an offsite PPA with new unsubsidised generation, high quality green tariffs, an offsite PPA w/ new subsidised, low quality green tariffs and electricity combined with unbundled REGOs

<sup>21</sup> [https://www.aib-net.org/sites/default/files/assets/facts/residual-mix/2019/AIB\\_2019\\_Residual\\_Mix\\_Results.pdf](https://www.aib-net.org/sites/default/files/assets/facts/residual-mix/2019/AIB_2019_Residual_Mix_Results.pdf)

## Appendix B: Net zero carbon buildings – operational minimum reporting template.

Table 3: Operational minimum reporting template for UK offices. Adapted from the UKGBC Renewable Energy Procurement & Carbon Offsetting guidance, pages 35 & 36.

OVERVIEW	
Dates of achievement	May 2020 – April 2021
Verified by	Stephen Ward, AECOM Limited
Building location	Detailed in full report
Building type	E/ Offices
Building description	Detailed in full report
Energy scope	Detailed in full report
Assessed area	8,764 m <sup>2</sup> total (Full report shows building level breakdown with a combination of GIA and NLA used)
Percentage of total building area	N/A due to mix of building contained within portfolio
Data sources	ESOS report and references therein: REP-HL ESOS Office energy saving opportunities Feb2020-rev01

### ENERGY – OVERALL

Indicator	kWh	kWh/m <sup>2</sup>
Total annual energy consumption	1,423,048	162
Total annual electricity consumption	1,115,574	127
Total annual fuel consumption (all other sources e.g. natural gas, 'green gas', heat network) per fuel/delivery type	307,474	35
Total annual electricity exported by renewable energy sources minus storage losses (e.g. photovoltaic)	0	0

### RENEWABLE ELECTRICITY PROCUREMENT

Indicator	kWh	%
Onsite owned	0	0%
Onsite PPA w/ new unsubsidised (private wire)	0	0%
Offsite PPA w/ new unsubsidised	0	0%
High quality green tariffs	0	0%
Offsite PPA w/ new subsidised	0	0%
Low quality green tariff	567,468	51%
Unbundled REGOs	0	0%
Landlord tariff or quality unknown	547,107	49%
	<b>Total</b>	<b>100%</b>

#### SUPPLEMENTARY NARRATIVES REQUIRED:

- Where interim EUI targets have not been met: an action plan setting out how the target will be met in subsequent years.

Refer to Section 4.3.

- For existing buildings utilising fossil fuel based heating, hot water, and cooking: a trajectory plan setting out how fossil fuels will be phased out by its next system replacement cycle. The plan should also indicate how all other energy systems will be compatible with being powered from renewable energy sources by their next system replacement cycle.

Refer to 4.7.

- Supporting procurement information, e.g., supplier and green tariff name, REGO registry entry (Refer to Table 9-10 of the Renewable Energy Procurement & Carbon Offsetting guidance).

Refer to Section 4.8 (note: tariff not yet commenced and considered outside of current claim but included for reference).

### CARBON

	Dual reporting			NZCB Framework Definition approach	
	Scope 1	Scope 2 (location-based)	Scope 2 (market-based)	Scope 1	Scope 2
Total annual direct CO <sub>2</sub> e emissions from self-generation and consumption	0 tonnes			0 tonnes	
Total annual indirect CO <sub>2</sub> e emissions from imported electricity		285.7 tonnes	191.0 tonnes		285.7 tonnes
Total annual direct CO <sub>2</sub> e emissions from combustion of fuel (e.g. onsite gas) per fuel type	47.0 tonnes			47.0 tonnes	
Total annual indirect CO <sub>2</sub> e emissions from combustion of fuel (all other sources, e.g. heat network) per fuel type		3.7 tonnes	3.7 tonnes		3.7 tonnes
Total annual CO <sub>2</sub> e for Scope 1 + 2 emissions		289.5 tonnes	194.7 tonnes	47.0 tonnes	289.5 tonnes

For net calculations:

Total annual displaced CO <sub>2</sub> e emissions from electricity exported by on-site renewable energy sources minus storage losses	0
Total annual displaced CO <sub>2</sub> e emissions from international carbon offsets	337 tonnes
Total annual displaced CO <sub>2</sub> e emissions from domestic carbon units	0
Total annual net CO <sub>2</sub> e emissions	0

### OFFSETS

Carbon offset approach used	Transition fund
International carbon offset standard used, amount and type of offset credit procured Registry link	Standard: Gold Standard Amount: 476 credits (also covering sources outside of UKGBC scope as detailed in main report) Type of offset credit: Reforestation Registry Link: <a href="https://registry.goldstandard.org/credit-blocks/details/218292">https://registry.goldstandard.org/credit-blocks/details/218292</a>
Domestic carbon unit standard used, amount and type of offset unit procured Registry link	N/A
Weighted average cost per tonne of CO <sub>2</sub> e for carbon credits/units bought	£28.31/tCO <sub>2</sub> e
Transition Fund – carbon price, cost per tonne of CO <sub>2</sub> e (if applicable)	£70/tCO <sub>2</sub> e

#### SUPPLEMENTARY NARRATIVE REQUIRED:

- For Transition Fund approach – narrative on projects / schemes invested in, how it supports a transition to net zero, with evidence of projected or measured carbon savings. If there are any remaining funds, how these will be spent in the upcoming three years with a rolling fund figure update.

Refer to Section 4.8.

Table 4: Carbon Accounting for 'Net Zero Carbon – in Operation'. Adapted from the UKGBC Renewable Energy Procurement & Carbon Offsetting guidance, pages 56 & 57.

**CARBON ACCOUNTING FOR 'NET ZERO CARBON – IN OPERATION'**

Building	Area (m <sup>2</sup> )	Gas (kWh)	Heat (kWh)	Electricity (kWh)	Renewable electricity procurement mix – consumption (kWh)							Electricity (kWh)	Exported generation (kWh)	Scope 1	Scope 2: location-based	Scope 2: market-based	Scope 1	Scope 2: location-based
					Onsite owned	Onsite PPA w/ new unsubsidised (private wire)	Offsite PPA w/ new unsubsidised	High quality green tariffs	Offsite PPA w/ new subsidised	Low quality green tariff	Unbundled REGOs							
Abu Dhabi	15	1,950	0	3,705								3,705	0	0.4	1.5	1.5	0.4	1.5
Birmingham	590	111,396	0	97,490						97,490			0	20.5	24.9	0.0	20.5	24.9
Bournemouth	1085	42052	0	101,482								101,482	0	7.7	25.9	35.3	7.7	25.9
Bristol	1983	24,432	0	268,382								268,382	0	4.5	68.6	93.4	4.5	68.6
Cambridge	291	28,227	0	42,522						42,522			0	5.2	10.9	0.0	5.2	10.9
Cardiff	568	0	0	66,361								66,361	0	0.0	17.0	23.1	0.0	17.0
Glasgow	187	0	0	15,341						15,341			0	0.0	3.9	0.0	0.0	3.9
Leeds	371	0	0	64,717								64,717	0	0.0	16.5	22.5	0.0	16.5
London	2087	0	52,095	287,995						287,995			0	0.0	77.4	3.7	0.0	77.4
Manchester	766	47322	0	68,821						68,821			0	8.7	17.6	0.0	8.7	17.6
Oxford	283	0	0	55,299						55,299			0	0.0	14.1	0.0	0.0	14.1
Plymouth	538	0	0	43,460								43,460	0	0.0	11.1	15.1	0.0	11.1
<b>Total</b>	<b>8,764</b>	<b>255,379</b>	<b>52,095</b>	<b>1,115,574</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>567,468</b>	<b>0</b>	<b>548,107</b>	<b>0</b>	<b>47.0</b>	<b>289.5</b>	<b>194.7</b>	<b>47.0</b>	<b>289.5</b>
				%	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>51%</b>	<b>0%</b>	<b>49%</b>						

Gross scope 1 + 2 combined (tCO <sub>2</sub> e)	336.4	241.7	<b>336.4</b>
Exported generation (tCO <sub>2</sub> e)	0.0	0.0	<b>0.0</b>
Net combined (tCO <sub>2</sub> e)	336.4	241.7	<b>336.4</b>
<b>Min. offset credits required</b>			<b>337</b>

## Appendix C: Carbon offsetting certificate.



## Appendix D: Third-party audit letter.



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23 November 2021

Ashley Bateson  
Partner  
Hoare Lea

**Third Party Review of Net Zero Carbon Report**

Dear Ashley,

I write to confirm that following my review of your net zero report, I am satisfied that the report, and your subsequent purchase of Gold Standard carbon offsets, meet the requirements for achieving **net zero carbon in operation** for Hoare Lea's occupied offices, **as per the definition set out in the UKGBC document "Net Zero Carbon Buildings: A Framework Definition"**, April, 2019 and its supporting documents. This is for the reporting period of May 2020 to April 2021.

My review was limited to the contents of the report and associated appendices only and I did not review or verify any meter readings, or any energy bills. My review process consisted of the following stages:

- Initial video call with you and your team on 8<sup>th</sup> September, 2021 and subsequent email clarifications
- Review of report entitled "REP-Our net zero commitment-Hoare Lea-20210901-Rev01" and issue of review comments and recommendations for amendments
- Review of amended report entitled "REP-Our net zero commitment-Hoare Lea-20210901-Rev02"

I commend you on the leadership you are demonstrating in this area and wish you well with your net zero journey!

Yours sincerely,



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