

Net-Zero Strategy for Clipstone Industrial REIT plc. Published April 2023.

Executive Summary

We have reviewed the scale of the challenge to implement a 2050 Net-Zero strategy. After further modelling, we have concluded we can achieve a 2040 target for Clipstone Industrial REIT plc (“Clipstone”). Clipstone Investment Management Ltd (“CIML”) is responsible for managing the assets owned by Clipstone. As managers, we have reviewed the factors which will enable the Company to meet the Net Zero objective. We summarise the determinants of our success below. Based on our analysis we are confident in achieving Net-Zero by 2040; we may be able to meet this objective even sooner.

Determinants of our success include:

- **Having an accurate and continually improving energy and carbon baseline.**
- **Understanding the energy and carbon transition, as the portfolio moves away from gas and embraces renewable technologies. Degasification alone is capable of delivering c.75% greenhouse gas (“GHG”) emission reduction.**
- **Understanding the rate of change and likelihood of achieving change that can deliver Net-Zero as soon as possible without disrupting the business model.**
- **Drawing on external expertise from modelers, energy specialists, and architects to provide the best possible understanding of the options available to the business in a commercial context.**
- **Setting clear and realistic targets against which to report our progress to our investors.**
- **Embracing new ideas delivering prototypical projects to gain a competitive market advantage and improve the quality and sustainability of our properties.**
- **Recognising the need to work collaboratively to educate and influence tenants about sustainability.**
- **Recognising that renewable power generation from our roofs is a commercial opportunity.**
- **Understanding that Carbon Offsetting is a valid route to address residual emissions and also represents a commercial opportunity through pre-purchase and onward selling to tenants.**
- **Continuing to explore innovative solutions as they emerge and play our part in stimulating change in response to climate challenge.**

1) Background and context

CIML is committed to addressing the climate challenge. We appreciate the need for timely action and response through taking direct steps to limit greenhouse gas emissions. The company appreciates that this requires the collective action across our business and includes our suppliers, tenants, and investors.

The industrial and warehouse sectors are behind many other sectors in their responses to the climate challenge. CIML has taken the opportunity to investigate best practice and to understand which areas of material progress can be applied from other sectors. In addition, we have commissioned new and original investigations to understand the impact of our activities when we refurbish units and we have established an understanding of the full carbon impact - both operational and embodied - across our portfolio.

CIML intends to align the business model for Clipstone to the 1.5-degree Paris Accord emissions commitment and seeks to ensure that its emissions are reduced consistently, using a science-based target approach. We appreciate that wider society and partners across industry also need to make a similar commitment and as such we hope our work will also serve as stimulation for others to follow.

The steps we have taken to address this challenge

During 2021-22 Clipstone has:

- Undertaken a detailed study of its emissions through a benchmarking study to establish the carbon footprint of the property portfolio.
- Modelled the carbon reduction trajectory of the businesses and in particular set targets for emissions reductions.
- Undertaken an assessment of the energy options for energy consumption.
- Developed a detailed set of Key Performance Indicators through which it can continuously monitor and report on its own progress and to use these to report to others.
- Reviewed the UK Green Building Council's report on carbon reduction (2021) and carried out its own assessment of building material improvements for refurbishments. It has established its own embodied carbon benchmark to compliment the operational carbon reduction strategy.
- Begun to assemble resources to support tenants achieve their own transition to energy and carbon reduction.

2) Operational impact – energy and carbon

EVORA Global (“Evora”) were commissioned to provide a carbon baseline for the 2019 and 2020 calendar years. The key findings of their study are summarised in the table below and show a reduction in total carbon emissions from tenanted properties dropping from a 2019 baseline of 4,206 tCO₂.

The rate of change and the types of interventions that can be undertaken will enable a significant progress against our GHG reduction commitment and allow a more useful carbon intensity statistic to be shown as opposed to gross emissions which are a factor of portfolio size, acquisitions, and disposals.

Operational Carbon Emissions

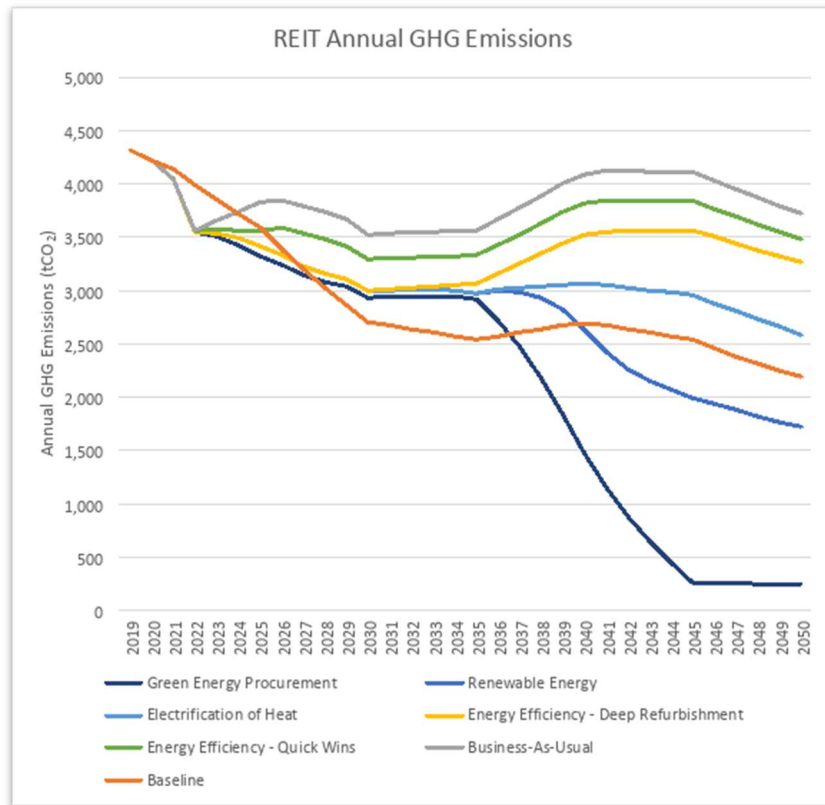
The expected baseline scenario carbon emissions for the portfolio are expected to fall gradually alongside the decarbonisation of the national grid. In 2019, the baseline emissions total was 4,206 tCO₂. This is estimated to fall to 2,706 tCO₂ per annum in 2030 This equates to 36% reduction by 2030 and 49% by 2050. 2019 baseline carbon emissions are equivalent to 26 tCO₂ per square foot (scope 1, 2 and 3), and 515 tCO₂ per £m income after administration costs.

With the business-as-usual (“BAU”) scenario the carbon emissions are shown to increase compared to the baseline (due to forecast net acquisitions). By 2050, the total carbon emissions for the portfolio are projected to be 3,717 tCO₂ per annum.

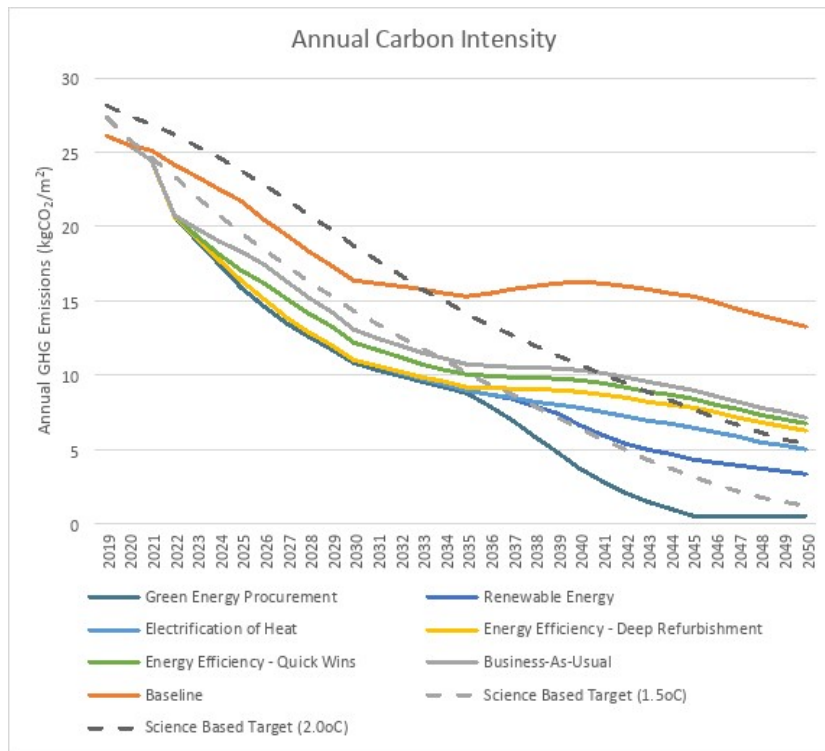
The impact of the energy efficiency measures is an overall reduction in carbon emissions to 3,261 tCO₂ in 2050; a 12% reduction from the BAU scenario.

Switching from gas heating to efficient electric heating further reduces carbon emissions to 2,585 tCO₂ in 2050.

Lastly, the use of photovoltaics (renewable energy generation) further reduces carbon emissions, but the effect is less pronounced further out in time as the benefit versus a decarbonised grid narrows. After including green energy procurement, the total carbon emissions for the portfolio total are forecast to be 244 tCO₂ in 2050. These are our residual emissions that cannot be eliminated.



The graph below summarises the expected trajectory based upon the model of 2050 Net-Zero.



3) Creating our own targets for change

Following the conclusion of the baselining study, we have developed and adopted targets across multiple delivery areas. These build on our existing commitment to improve EPC ratings by also addressing data quality for energy consumption through direct metering, improved refurbishment specifications and having an increased understanding of the opportunities around renewable technologies and embodied carbon impacts at refurbishment. We appreciate the importance of clear and unambiguous reporting, especially to investors who seek reassurance about the progress in decarbonisation.

Our targets are in the table below:

- The table sets out a series of statements that drive targets. Performance monitoring will be reported annually, with key performance indicators (KPIs) showing our progress against these targets.
- The high-level objective is to reach Net-Zero by 2040.
- Net-Zero assumes that residual carbon emissions can be addressed through high quality Carbon Offsetting as a last resort.
- We understand the importance of tenant engagement in the delivery of our scope 3 net-zero targets.

Performance area	Key deliverable	Target
1. Carbon emissions measurement and baselining	<p>The emissions have been measured through tenant meter readings and through proxy data based upon EPC data.</p> <p>The exercise was conducted by EVORA Global in 2022</p> <p>The impact of embodied carbon emissions in our refurbishment programme has been assessed through a pilot study with Sharman Grimwade (M&E) and Architype (Architects).</p>	<p>The Carbon baseline will be updated annually from 2026 to monitor progress in emission reduction (the next baseline will be 2026).</p> <p>From 2026 the carbon footprint will aim to also include accurate data for embodied carbon resulting from the refurbishment programme and aims to account for new fabric and M&E products where data is currently unavailable for the industrial and warehouse sector.</p> <p>The 2026 baseline will include operational and embodied carbon assessments.</p>

Performance area	Key deliverable	Target
<p>2. Improving the accuracy of Carbon emissions data collection</p>	<p>The low percentage of real data in the published baseline needs to increase to reduce dependency upon tenant reporting and proxy data otherwise the baseline will continue to be estimated with a risk of inaccuracy. To address this Clipstone owned smart meters will be installed into units.</p>	<p>Smart meters/data loggers will be rolled out across the Clipstone portfolio, with a target of over 50% coverage by floor area by the end of 2024.</p>
<p>3. Progress on plotting a trajectory to Net-Zero</p>	<p>The portfolio has a Net-Zero modelled trajectory resulting in Net Zero by 2050. This is an SBTi aligned target. We aim to improve this and achieve net-zero by 2040.</p> <p>The trajectories are modelled against the Paris agreement to hold temperature rise at 1.5 global temperature and does not take into higher rates of Global warming.</p>	<p>We will aim for a reduction in emissions exceeding 4% per annum, following the trajectory set out in the Evora Carbon Reduction Trajectory to meet or do better than the 2040 net zero target.</p> <p>Upon delivery of target no.2 (data accuracy) we will keep under review the arrangements for future SBTi validation.</p> <p>We will aim to bring emissions down to less than 10Kg CO₂ per square metre per annum mean value across all units by 2040.</p>
<p>4. Operational Energy and Carbon footprint reduction interventions - degasification</p>	<p>We will aim to remove gas from all units subject to:</p> <ul style="list-style-type: none"> • tenant engagement and • the deployment of suitable innovation including new technology enabled and efficient solutions. 	<p>The 'aimed for' target date for degasification through gas ambient heater and water heater removal is 2035.</p> <p>By 2024 there will be a fully accurate inventory of gas installations in all units to enable better prioritisation of interventions with tenants.</p> <p>By 2025 a proforma will be developed setting out alternative energy solutions for tenants to follow or adopt.</p>

Performance area	Key deliverable	Target
<p>5. Operational Energy and Carbon footprint reduction interventions – low energy lighting systems</p>	<p>Upon lease renewal or by agreement with tenants all premises will be converted to LED lighting as part of the standard refurbishment programme.</p>	<p>The Target date for conversion to LEDs is 2030 on all units</p>
<p>6. Proportion of locally generated renewable electricity and energy resilience</p>	<p>The proportion of locally generated and stored electricity will increase as a proportion of the total usage by unit as new and improved technologies become available and can be installed.</p> <p>We will seek to develop a model and draft contract structure selling energy generated from PV to tenants.</p>	<p>The percentage of locally generated electricity will increase. We will aim to increase the production of local renewable energy from solar power, targeting 2 PV system installations a year from 2024.</p> <p>We will aim to generate income from all PV installations.</p>
<p>7. Energy consumption in units- energy efficiency</p>	<p>Linked to our target to decarbonise, we will seek to improve efficiency across the board and set a stretched target for energy consumption across all units.</p>	<p>By 2027 we will operate to a stretched target of 40kWh per square meter mean annum electricity consumption across the portfolio.</p>
<p>8. Embodied Energy and Carbon – Building Fabric and Refurbishment</p>	<p>The carbon impact of building works during construction and refurbishment needs to be reduced as up to 42% of UK emissions are from this source.</p> <p>Contractors and Designers and QS teams will be advised to specify sustainable/low carbon materials. While we may alert contractors to potential product substitutions for liability reasons the specifications and warranties will apply to the contractor.</p>	<p>We will aim for all refurbishment projects to measure and account for their embodied carbon impact and seek to achieve a target of less than 300 Kg CO₂ per square metre. The embodied carbon target will apply to the ‘in construction phase ‘A1-A5’ in order to reduce the carbon impact of refurbishments. This may also enable better life cycle and building life to be achieved.</p> <p>The outcomes of the Architype embodied carbon pilot study will enable a revised refurbishment</p>

Performance area	Key deliverable	Target
		specification to be adopted to assist with this aim from 2023 .
9. Embodied Energy and Carbon -Circular Economy and Waste	<p>We will require our contractors to have a waste minimisation policy and strategy and will apply a target 'waste to landfill' for all projects.</p> <p>Re-use and recycling will be encouraged, and product warranties can be renewed or upgraded by suppliers according to UKGBC guidance to enable re-use.</p>	<p>Subject to further research we will adopt a target Waste to Landfill metric/upper permissible limit and a linked reporting cycle.</p> <p>We will develop a Circular Economy Policy and Strategy for practical application and set a percentage of re-used or recycled materials per annum as a target from 2024 and once the feasibility of this approach has been evaluated.</p>
10. Embodied Energy and Carbon- M&E systems	All new installations of M&E systems must be checked for GHG emission data from refrigerants before installation to avoid unnecessary GHG emissions during use and at end of life.	Annual reporting will from 2024 include numbers and type of new M&E installations and confirm compliance with CIBSE standards for minimising high GHG refrigerants and apply the TM65 calculation methodology.
11. Green procurement – imported embodied carbon/ethical and supply chain	Ensure all sub-contractor contracts contain provisions for green and ethical procurement and establish an audit framework for reviewing all contracts.	By the end of 2024 we will develop an approach to encourage best practice with sub-contractors and to monitor this commitment from our sub-contractors.
12. EPC improvements	We use EPC ratings as an important indicator for our individual units.	By 2028 all refurbishments will be EPC B with C as an absolute minimum.

Performance area	Key deliverable	Target
13. Tenant Engagement	A systematic programme of events and seminars will be made available to encourage greater knowledge and commitment from tenants for driving change in their own businesses	<p>A tenant engagement policy with support materials and online engagement will be targeted for 2024 launch through working with third party providers.</p> <p>An annual tenant engagement metric will be set of circa 10 businesses per annum to include new and existing business supports.</p> <p>A tenant engagement manual will be written and supplied to tenants before the end of 2023 to initiate the engagement process.</p>

4) Carbon reduction – operational energy and carbon

Renewable heating systems and lighting

One of the challenges associated with industrial and warehouse units is the absence of ‘off the shelf’ M&E replacement strategies for gas heating in large void spaces. To address this challenge, we investigated the use of air source heat pump technology combined with radiant heating panels engaging Sharman Grimwade to produce a case study.

Using a typical industrial unit of just over 1,000 sqm as a case study, Sharman Grimwade calculated the change from gas to an ambient air source heat pump system using ceiling mounted radiant panels would reduce the annual carbon emissions from **24,458 kgCO₂** to **6,096 kgCO₂** amounting to a **75%** reduction based on a direct replacement and no fabric improvements.

This approach represents a solution that tenants can adopt should the heating of void spaces be essential.

In most cases, we will remove gas when a unit is refurbished leaving void spaces unheated, and lighting will be changed to LED. In office spaces we will install efficient electric heating. The commitment is to move away from gas boilers and inefficient direct electric solutions to heat pump-based, or other

efficient electric solutions. We will aim to include clauses in new leases prohibiting new gas heating installations. Many leases already include a prohibition against tenants doing anything that would make the EPC rating of the building worse, which is likely to prohibit new gas installations as well. Where tenants do require warehouse heating, we will provide information on electrically powered solutions where appropriate.

Where tenants take the lead on installing renewable heating systems it is important that they understand the risks associated with high GHG refrigerant types and that they appreciate the inherent embodied carbon impacts of M&E equipment if it is 'over' engineered for the application. We will look to include guidance on warehouse heating in our tenant handbook (see section 10).

We have explored the possibility of district heating systems and ground source heat pumps for multiple units but the constraints at sites and the desire to have individually managed tenancies has mitigated against such an outcome. While this has been discounted as an option in the short term it is not ruled out for medium- and long-term consideration for estate wide infrastructure solutions on new or existing assets.

5) Solar power – photovoltaics (PV)

There is a compelling case for the introduction of PV panels on warehouse roofs where roofs have sufficient structural integrity to support any installation. This may not be possible where over-roofing has already taken place. With the increased technology readiness for onsite battery storage, the off-grid capability could exceed 50% of demand. This area of work will be kept under review, and we will continue to appraise the commercial opportunity of being a PV solar energy supplier to tenants and the possibility of having multi-unit solar installations. While we have considered smart export opportunities, power purchase agreements and contract sleeving, there are insufficient precedent examples to base a business case on at this time. We will keep this under review, and this may form part of the future work priorities. In the meantime, we will continue to introduce local PV generation where possible as part of our net-zero commitment.

6) Carbon reduction – Embodied Carbon

While this subject is still in its infancy in industrial and warehouse projects it is an accepted fact that the carbon cost of materials used in refurbishment and in re-equipping energy infrastructure with low carbon energy sources is part of the overall carbon accounting for any refurbishment. There are very

few projects in existence where the embodied carbon from a retrofit has been systematically studied and hitherto none in the sector in which we invest.

As a result, Architype were commissioned in late 2022 to study the embodied carbon footprint of different refurbishments strategies on a typical unit. They were asked to review on a life cycle analysis basis the carbon cost of different refurbishment strategies, designed in turn to enable the Clipstone team to further refine the refurbishment specification.

The key findings of this study are set out below:

The embodied carbon analysis has illustrated that there are some elements of a refurbishment which contribute significant amounts of embodied carbon to the total, while others are typically much less significant. The most significant items are:

- Mechanical, electrical, and plumbing installations, although based on an estimate, are likely to be a significant element due to the predominance of metals in components.
- Floor finishes, in particular the epoxy floor paint in the warehouse, has a high embodied carbon impact due to the quantity of it, and the short replacement cycles.
- Roof build-up, in particular the corrugated steel roof finish, and pressed steel liners. Options to be explored would be lighter weights of steel, as well as lower carbon materials.
- Aluminium window frames. Embodied carbon can be reduced significantly by using a timber-aluminium composite frame, due to the lower quantity of aluminium used, whilst keeping it as an external finish to provide durability.

The analysis shows that a standard refurbishment approach, including replacing the gas boiler with an air source heat pump, makes a modest whole life carbon improvement, with a small, embodied carbon investment. This can be improved on by focusing on a fabric-first approach and improving all the external fabric to meet high levels of thermal insulation and airtightness, as well as minimising other energy uses.

For a small extra amount of embodied carbon, this can deliver a significant further improvement in whole life carbon.

The final big step in getting close to net zero whole life carbon is through adding PVs to the roof, which assuming 50% coverage and if the initial two steps of degasification and fabric-first upgrade have happened, would get a typical unit close to net zero whole life carbon. The benefits of biobased, or alternative low carbon materials, are more modest in comparison, although there is a significant benefit in the upfront carbon, i.e. the material and energy cost spent now, rather than in the future. This is arguably more beneficial to a world facing an imminent climate crisis than notional carbon savings in several decades. The use of alternative materials though is likely to present some issues in terms of durability, fire, insurance, and other risk areas, so these need to be carefully considered alongside the potential embodied carbon saving. Alternative materials are also more expensive.

An embodied carbon target of 300Kg per square metre has been shown to an appropriate target that will be met in most refurbishments.

Subject to ongoing investment appraisal it may be able to reduce this further to less than 200Kg per square meter.

7) Residual Emissions and Carbon Offsetting

We are confident that by applying a consistent and assiduous effort to reduce scope 3 carbon emissions (i.e. emissions generated from tenant operations) from tenanted units that we can meet or improve upon the 2050 target and achieve a 2040 target that we have set, and this target will be inclusive of both operational and embodied carbon. However, there is a significant dependency upon the carbon intensity of imported power which in turn relates to grid decarbonisation. Even allowing for higher levels of local energy generation from renewables it is considered unlikely that all GHG emissions will be zeroed off and there will need to be some investment in alternative carbon offsetting strategies. The Architype study has raised the possibility of using renewable power locally generated from PV arrays on units as a valid route to offset the embodied carbon associated with refurbishment process. This is a valid option, and we will now actively investigate the possibility of bringing forward a more detailed PV power generation plan.

8) Carbon Offsetting through Carbon Credit purchasing: - our policy and practice

We can see the benefits of engaging with high quality carbon offsetting. Two immediate beneficial outcomes are that investment in pre-issuance carbon offsetting provides a medium-term insurance to net off residual emissions as part of our strong commitment as well as a potentially realisable investment in Carbon Credits. In addition, we wish to support new projects leading to carbon capture and storage. Following on from the commitment to Science Based targets alignment we would only use Carbon Offsets when all direct emission reduction strategies have been exhausted.

The source and reliability of Carbon Credits and the issues around integrity are a major issue that we have navigated by opting for Carbon Credit schemes that have been adopted by the EAUC Carbon Coalition.

The principles adopted by the COP26 working group and implemented by the EAUC Carbon Coalition are summarised here.

- Offsetting should only be used for emissions that cannot be reduced any further or as part of a net-zero plan to achieve a more ambitious target year.
- The carbon credit market is a complex one and currently our ideal offsetting solution – 100% carbon removal with storage – is currently not economically viable. The EAUC has developed a robust scoring and ethical stance on ensuring the use of the highest quality offsetting projects that are currently available on the market.
- Purchasers can be assured that they are investing in the highest quality carbon credit projects available on the market. The scoring methodology has been devised by climate experts, scientists, and sustainability practitioners.

Given we have a robust Carbon reduction plan which will improve annually, based upon estimates of the residual emissions from the Evora study, and given our current understanding of carbon removal rates from available and credible offsetting schemes, we will explore the possibility of pre-purchasing Carbon Credits (pre-issuance units). These can be retired between 2040 and 2050 thereby enabling Clipstone to close the gap between its 2040 projected emissions and zero. This number may vary from the current estimate of c.2,500 tons and require adjustment once the accuracy of the baseline has been improved and the trajectory in practice against the modelled trajectory has been validated.

9) Working with our suppliers

We want to ensure that suppliers and sub-contractors apply good standards of supply chain audit and reporting and that they can supply EPD (Environmental Performance Documents) to verify the carbon footprint and sustainability of products supplied. This is of particular importance when sourcing materials for refurbishments. In future we will verify the carbon footprint of products and services when placing tenders. Care will be applied to material supply chains to avoid excessive imported embodied carbon and M&E equipment with poor EPD credentials.

10) Tenant engagement strategy:

We understand the high level of dependency that exists in our scope 3 emissions on the actions taken by our tenants. The difficulty in obtaining energy data from some tenants and the importance of landlord-tenant relationships emphasised the need to engage with tenants directly on Net-Zero strategies for their own businesses.

We intend to engage directly with tenants by offering Net-Zero workshops and training sessions once we have identified a suitable provider for these services.

The key elements of our tenant engagement strategy will consist of:

- A handbook and resource guide, with links to suppliers and standards to accompany green lease and legal documents. In the first instance this will be a guide to resources that companies can access.
- In due course and subject to identifying a suitable provider we will look to provide Net-zero workshops for tenant companies to encourage them to adopt their own climate and carbon reduction policies which in turn will be reported under our ESG reporting.

11) Recommendations for future work:

The following areas have been identified as priority actions for future work – subject to further evaluation and prioritisation:

- Following on from the Archetype study the potential exists to carry out a fully net-zero exemplar unit refurbishment designed to evaluate through commercial testing the practicalities of applying our design methodology. This would involve putting into practice our

design specification derived from the findings of the Architype study and assessing in practice the investment return given the current difficulty in pricing the improvements accurately.

- The installation of PV systems with associated power purchase agreements. This would enable us to supply 100% green energy to our tenants on a sub-contracted basis. A full feasibility study would be required. Subject to practicality and cost we would aim to link this with energy storage. This would reduce dependency upon imported grid electricity.
- The assessment of pre-purchased carbon credits. These will be required to meet our 2040 target and it may prove prudent to acquire these in the near future to mitigate against future price increases. Any unused credits could be sold, potentially at a profit.