# Hafod Decarbonisation Strategy 2023-2036

## Context

The consensus on climate change is unanimous and mitigating the worst effects of rising CO2 levels requires coordinated global action at unprecedented scale. According to the Inter-Governmental Panel on Climate Change (IPCC), CO2 emissions will need to reduce by half by 2030 and reach net zero by 2050 to avoid catastrophic and irreversible change to Earth's climate and corresponding threats to ecosystems and human life.

The Welsh Government, under the 2016 Environment (Wales) Act has committed to the net zero 2050 target and in 2021 brought forward its target for the public sector to 2030. Accounting for electricity use within homes for appliances and lighting, residential buildings in Wales account for 15% of greenhouse gas emissions (Wales Centre for Public Policy, 2023). As providers of c.150,000 homes in Wales, this underscores the pivotal role of housing associations in addressing carbon emissions. Given most existing homes were not designed with carbon reduction in mind, and people's lifestyles are carbon intensive, there is a significant challenge to be overcome in achieving net zero. It is this challenge the de-carbonisation strategy seeks to address.

The legislative framework around de-carbonisation in social housing in Wales is:

- Environment (Wales) Act 2016, part 2 and Climate Change (Wales) Regulations 2021 (12 March 2021)
- The Environment (Wales) Act 2016
- The Well-being of Future Generations (Wales) Act 2015
- The Public Contracts Regulations 2015
- The Public Procurement (Amendment etc.) (EU Exit) Regulations 2020

It should be recognised from the outset that achieving net zero carbon is a huge undertaking for a single organisation, let alone an entire sector, the Welsh economy and the nation. Zero carbon lifestyles will look significantly different from the lifestyles people live now, and the shifts people will need to make are both monumental and permanent.

While our strategy conveys our commitment to supporting our customers in making the transition, there are many unknown quantities, pivotal factors and contingencies in reaching net zero, some of which we have little or no control over. Chief amongst these are:

1. a viable financial model for retrofitting existing homes, which is the single biggest undertaking in our path to net zero

2. the global decarbonisation of energy infrastructure and availability of affordable, low carbon alternatives to fossil fuels

3. the carbon emissions in our supply chains, which we have limited control over, but need to be mindful of in assessing our own emissions

While we can play our part in ensuring our homes and services are as energy efficient as possible, these macro-level factors are not ones we can influence alone. As such, our strategy does not exist in isolation from the efforts of sector peers and a raft of public and private partners, who we will work alongside and collaborate with openly. Decarbonisation is not a challenge in which we can afford to prioritise organisational interests or act in isolation to meet our own objectives. Collaboration is one of our core principles of de-carbonisation and one we must adhere top if we have any hope of achieving the goal of net zero.

## Net Zero by 2036

This strategy sets out the steps Hafod will take between now and 2036, the year we aim to be a net zero organisation. What this means for us is reducing our carbon emissions we have control over to as close to zero as possible, then taking measures to re-absorb our remaining emissions through forestry for example. Balancing these opposing flows of carbon will bring our net emissions to zero.

The realisation of this objective will require not only enormous investment in our physical assets. It will also require investment of time and resources to change the attitudes and behaviours of our customers and colleagues, as well as the suppliers and contractors who provide services and products to us. As such it will target scope 1, 2 and 3 carbon emissions, to different extents at different stages.

## Carbon reducing principles

- We will approach de-carbonisation with an emphasis on our customers, aiming to mitigate negative impacts and make the low carbon transition as easy as possible

- We will collaborate openly where this means we can accelerate progress collectively and achieve our own goals quicker and more effectively.

- We will maximise opportunities to reduce our carbon consumption, in line with the principles of the Well-being of Future Generations (Wales) Act

- We will weigh all future decisions, investments and spending against our net zero target
- We will experiment with new technologies and solutions and be led by what we learn

## Our starting point

We will adhere closely to the de-carbonisation principles, but in line with our organisational ethos, we will also view this strategy through a customer lens. While achieving net zero is an indisputable goal and necessity, we need to pursue that goal in an ethical and fair way which does not overly disadvantage customers, by compounding fuel poverty, for example. At the same time, moving to low carbon heating is currently a more expensive option than sticking with fossil fuels.

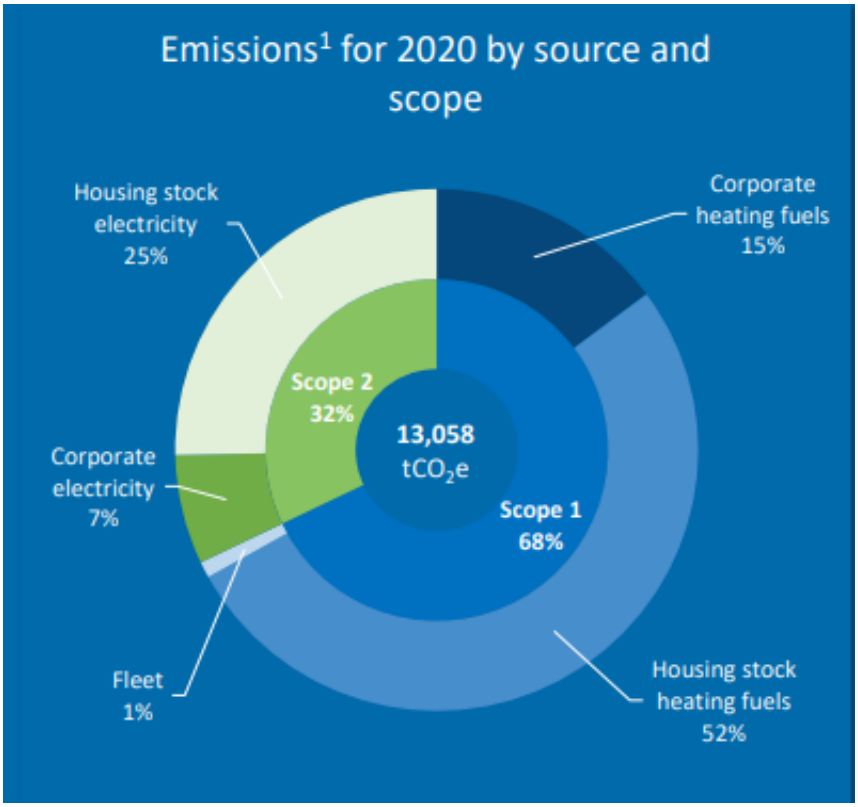
The strategy extends across our geography and our customer base. For customers in care, the strategy will play out in parallel with the care roadmap, which acknowledges some of the challenges in de-carbonising our care facilities. Providing care is inherently carbon intensive (as reflected in our 2021 carbon footprint report) and while we will seek every opportunity to reduce energy consumption and increase efficiency, we need to accept we may fall short of net zero in this area and rely more on offsetting than in other areas.

An audit of our decarbonisation strategy in late 2022 suggested we have the foundations in place, are part of the relevant discussions in Wales and beginning to experiment with solutions for the long-term. It also highlighted the need to accelerate and coordinate our efforts across the organisation, supported by strong leadership at Board and Executive level and a group of committed colleagues and champions across functions. Progress has already been made against the recommendations and this strategy document brings all the components together in one place for the first time.

Our approach is underpinned by a baseline carbon consumption report commissioned from the Carbon Trust in 2021, with a baseline of 2020. While there is a need to update this baseline position to gauge progress towards our targets, the report provides a robust and validated estimate of scope 1 and 2 emissions, which we can measure against.

The baseline assessment quantifies Hafod's scope 1 and 2 carbon emissions, which includes energy used heating homes, care facilities and corporate buildings. At 13,058 tCO2e, Hafod's carbon consumption offers significant scope for reduction.

Scope 3 emissions were not in scope for the baseline assessment, and this includes important carbon contributors, such as procurement of goods and services, business travel and commuting. These will be included in future baseline assessments.




Importantly the carbon footprint is broken down by sources and sites, allowing us to target locations and activities where efforts are most needed and will achieve the greatest impact.

## Links to other strategies

There are dependencies and overlaps with several other strategies and it is important we ensure strategies are complementary and additive, rather than contradictory or too overlapping.

## Asset management

The overlaps between decarbonisation and assets arguably the biggest and most significant. The decarbonisation strategy sets out what is required to decarbonise existing homes and the high-level approach we will take. The Assets strategy, however, contains more detail and timescales of how we will resource, plan and deliver decarbonisation, as part of our planned maintenance programme.

## Procurement and Contract Management Strategy

Procurement is one of the main levers available to mitigate carbon emissions. Published in March 2021, the Wales Procurement Policy Statement set out 10 principles for procuring well-being for Wales. While the statement in its entirety supports decarbonisation, principle 6 specifically states:

'*We will act to prevent climate change by prioritising carbon reduction and zero emissions through more responsible and sustainable procurement to deliver our ambition for a net zero public sector Wales by 2030*'

Hafod's procurement strategy governs our approach to how we procure, providing a framework to allow the right decisions to be made which supports our ambitions. Procurement is pivotal in helping Wales, and Hafod, reduce its scope 1, 2 and 3 emissions.

- Scope 1 Emissions include fuel combustion, company vehicles and fugitive emissions
- Scope 2 Emissions include purchased electricity, heat and steam
- Scope 3 Emissions include purchased goods and services such as business travel, employee commuting, waste disposal, use of sold products, transportation and distribution (up- and downstream), investments, leased assets and franchises

Procurement is not only an enabler to achieve our objectives, it underpins each of the themes within this strategy and ensures we meet our legislative requirements, its supports decarbonisation in the following ways:

- **Collaborative Procurements** – working with other Welsh based organisations to maximise our buying power to incentivise suppliers to commit to making changes to the way their business operates to support our goals to de-carbonise Wales
- **Training and Awareness** – educating procurement colleagues and internal stakeholders on our commitments as an organisation to ensure that sustainability is prominent in every decision we make
- **Spend Analysis** – to understand where we are spending our money, categorising our spend by commodity type to support us in making the biggest impact

- **Challenging Specifications** – to ensure the right sourcing decisions are made that contribute to our objectives
- **Lifecycle Analysis** – ensuring that whole life costs are taken into consideration, selecting the right supplier which provides the least environmental impact
- **Innovation** – Encouraging suppliers to propose innovative solutions that can support us in achieving our goals
- **Social Value** – ensuring that decisions are not made on price alone, considering our corporate social responsibility and ensuring that added value is provided where it matters
- **Supplier Engagement** – including environmental criteria into our procurements encourages suppliers to consider alternative sustainable products and services
- **Local Suppliers** – Prioritising local suppliers not only supports keeping the £ in Wales but can reduce transportations emissions and supports the local economy
- **Contractual Relationships** – Integrating carbon reduction goals into contracts ensures our suppliers contribute to our decarbonisation efforts
- **Performance Metrics** – Implementing Key Performance Indicators into our contracts, allows us to measure and report on improving our carbon emissions
- **Supplier Management** – Fostering positive working relationships with our suppliers ensures that they deliver their commitments and share best practise to improve our service offering

**Development/Regeneration strategy** – this strategy governs our approach to developing new homes and regenerating spaces. This strategy is broader than de-carbonisation but addresses low carbon design as part of the requirements for delivering new, affordable homes. The approach outlined is referenced in this document.

**Digital transformation and data** – the overlap here is in terms of how digital solutions can help us measure progress towards net zero, how we can redesign services to reduce travel and paper consumption, how we can support low carbon working styles and reduce the carbon footprint of hardware and off-site services.

**People** – there is an overlap here in terms of embedding low carbon priorities into organisational culture and learning about decarbonisation, but also in the low carbon and retrofit skills agenda, which impacts on our workforce planning and recruitment processes.

**Care and Support Roadmaps** – these roadmaps capture several considerations around care and support services, some of which impinge on de-carbonisation. Collecting data on the stock condition, particularly in support, is important where we have ownership of facilities and responsibility for moving them towards net zero. Where we do not have ownership and direct responsibility for the buildings, we have a responsibility to 1) work with partners to understand their own de-carbonisation plans; and 2) drive carbon emissions out of service delivery as far as possible.

**Social Value** – provides the framework on how our suppliers contribute to supporting us in achieving economic, social and environmental sustainability for the local area. Our communities are at the heart of this, to ensure that all activity drives positive outcomes in the local areas in which we operate, and customers are invited to participate in any environmental projects that enhance their local community.

## Strategic focus

Our strategy is formed around five themes, each with a series of key actions to move us towards net zero by 2036:

Theme 1: Building our picture
Theme 2: Decarbonising existing homes
Theme 3: De-carbonising new homes
Theme 4: Low carbon service delivery
Theme 5: The carbon literate organisation

The following sections outline and develop these themes in more detail.

## Theme 1: building our picture

### Where we want to get to

We will develop our data to build up a richer picture of the condition of our assets, carbon use and customer perspective, with the intention of supporting customers in moving to net zero.

## Context

The availability of high quality, timely and validated data is pivotal to Hafod's net zero effort and supporting customers to make what could be a difficult transition to net zero. At present we have a partial picture of how we as a business and our customers consume carbon, but no means of understanding the impact of investment decisions and initiatives on carbon usage and customer experience. Investing effort in data development, therefore, will help us in several ways:

- Tell us how customers feel about living in energy efficient homes and how retrofit works have impacted on their lives
- Develop a deeper understanding of our carbon footprint across all emission categories, and the scope for reducing it
- Better understand the performance of our assets
- Set realistic carbon reduction targets
- Develop meaningful measures that customers and colleagues across the business can relate to
- Inform investment decisions
- Monitor and evaluate progress towards eventual net zero and our intermediate targets

Hafod's stock condition data is now a major focus for the Assets function and more resources have been channeled into its improvement and expansion, to give a clearer basis for future stock investment and planned maintenance. The sector is also aligned in its desire to develop stock condition data capacity, which means competition for qualified resources will be stiff and

## Actions – how we will get there

| Actions | Timeline |
|---|---|
| Implement recommendations of Carbon Baseline report regarding data quality and validity | 2023/24 |
| Revisit baseline with Carbon Trust to incorporate Scope 3 emissions and update carbon footprint | 2024 |
| Implement alternative measure to EPC-A/SAP 92+ when developed and implemented | 2023-2025 |
| Select and roll out carbon calculation tools for business use and communication | 2023/24 |

| | |
|---|---|
| Evaluate Switchee (and equivalent technologies) as a source of data on environments within homes and customer experience | 2023/24 |
| Continue partnership work with Cwm Taf Healthy Housing Alliance on cold homes and health | 2023-2025 |
| Develop models to forecast pathway to net zero and potential shortfall | 2025 |
| Continue rolling stock condition data gathering to 5 -year frequency | Ongoing |
| Key deliverables/outputs:<br>• Refreshed carbon baseline in 2024<br>• Carbon calculator sourced and implemented<br>• Fully populated and updated stock condition database<br>• Switchee trial implemented in 50 homes | |

## Theme 2: Decarbonising existing homes

### Where we want to get to

We will make our customers' homes warmer, dryer and more energy efficient, to combat fuel poverty and promote better physical and mental health. To achieve this, we will, over time, bring our existing homes up to the highest energy efficiency standards they can achieve through retrofitting.

### Context

Cold, inefficient homes are known to be detrimental to people's health and well-being in many ways. As such, creating warm, efficient homes that help protect people's health is a key objective of de-carbonisation. We understand that by improving the energy efficiency and thermal comfort of a person's home, we can't prevent disease and ill-health altogether, but we can go some way to mitigating its worst effects. The focus of this theme is technical and focused on assets, but the outcomes we seek are very much about our customers' well-being and health.

**2023-2029 – working towards WHQS 2023**

Trialing and evaluating retrofit solutions and technologies in collaboration with the Welsh Government (through the Optimised Retrofit Programme), peer organisations and industry partners. Although this crucial experimental phase will allow us to maximise low carbon performance in in a sample of homes and locations, its main purpose is to:

- learn what solutions will work at scale;
- develop our data capability;
- grow or acquire the skills necessary to implement retrofit solutions;
- develop a workable financial model; and
- benefit from large scale 'greening' of energy infrastructure.

As a principle, optimised retrofit requires solutions that do not impose costs that push households into fuel poverty, a challenge made even more difficult during high inflation and persistently high energy costs. Low carbon measures and cost do not correlate in a linear way and as such our evaluations need to take account of ongoing costs to customers as well as the organisation's ability to service the resulting debt.

**2029-2036 – working towards net zero**

Implementing Target Energy Pathways across Hafod properties. It must be emphasised this is an incredibly complicated undertaking as every type, location, aspect, age and pre-existing condition of property means it has a unique pathway to meet net zero and a unique set of works and modifications required to achieve and maintain the standard.

As an indication of the likely retrofit investment required, the table below sets out some scenarios, although with no indication of the timescale over which the investments would be repaid. Although estimates vary, the Welsh School of Architecture posited an average cost of £18,500 per property on top of planned component replacements, which represents there is a major gap in current funding.

Hafod's 30-year business plan is based on £20,000 per property to achieve low carbon standards, which (prudently) is at the upper end of current estimates. The range of financial impact for different unit costs is illustrated on the next page.

| Average retrofit cost per property | Estimated funding requirement |
|---|---|
| £15,000 | £75m |
| £17,500 | £92.5m |
| £20,000 | £100m |

***Illustrative impact based on 5,000 properties requiring retrofit**

The mechanisms for raising this funding are subject to ongoing debate and discussion, so until a clearer picture materialises nationally, the strategy will need to be fluid and responsive to change. Pressure on public finances will mean that grants will not be sufficient to close the funding gap, but the sector is also constrained by borrowing covenants.

Amongst the options we will consider as part of our strategy are:

- Bidding for increased shares of grants made available by Welsh or UK Governments. For example, it is possible that additional grant funding will accompany WHQS 2023.
- Partially recovering costs through rent and service charges (e.g. increasing service charges to cover the costs of PV and battery arrays), which could only work if energy costs to customers fall significantly and we were still able to satisfy affordability requirements.
- Off-balance-sheet borrowing through special purpose vehicles, which will allow for the injection of private finances without compromising existing loan covenants.
- Disposal of properties is no longer an option, even where achieving the WHQS is uneconomical or not feasible.

This phase will also require us to validate the net zero status of retrofitted properties, which is a significant undertaking alongside installing the low carbon measures.

**Actions – how we will get there**

| Actions | Timeline |
|---|---|
| Prepare Hafod application for Optimised Retrofit 3 programme | 2023 |
| Whole stock condition assessment to inform Target Energy Pathway development | 2025 |

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|---|---|
| Develop plan for Target Energy Pathways for Hafod properties, in line with WHQ 2023 | 2023-2027 |
| Deliver WHQS 2023 EPC-C (SAP 75) requirement for all homes | 2029 |
| Continue trialling and evaluating retrofit technologies to gauge what works | 2023-2028 |
| Maximise availability of stock condition and energy performance data to inform costing and planning of retrofit | 2023-2036 |
| Work with customers, sector partners, government stakeholders, lenders and private sector partners to develop and implement a viable financial model and long-term business plan for retrofit | 2023-2029 |
| Re-cast rent and service charging model in line with changing household costs and need to recover costs of retrofit | 2023-2036 |
| Engage in national retrofit skills and labour agenda and consider future needs as part of Hafod people strategy | 2023-2029 |
| Upgrading all Hafod properties from EPC-C to EPC-A+ (SAP 75-SAP 92+) | 2029-2036 |
| Capitalise on opportunities to switch to renewables or low carbon energy sources | 2023-2036 |
| Key deliverables/outputs:<br>• ORP 3 application and funding<br>• Financial model/instrument to fund retrofit<br>• Retrofitted homes to EPC-C by 2029 and EPC-A+ according to Target Energy Pathways | |

## Retrofitting case study: Thornhill

In 2023 Hafod completed a £2.1m retrofit project on c.150 homes in Thornhill, Cwmbran, comprising mainly of 3 or 4-bed houses, with around 14 flats. Properties here are elevated and exposed to heavy rain and snowfall. Low roof pitches and cavity wall insulation have led to historical problems with damp and condensation in a number of properties.

Properties' walls were blanketed in 100mm solid insulation, rendered over to provide a brick-like finish, or clad in brick-shaped tiles. Windows and doors were replaced to Performance Assessment Standard 24 (PAS24), which give high levels of thermal insulation and ait-tightness. Rooflines were extended to accommodate the external wall insulation and capped with 300mm of insulation, beneath specialist replacement tiles for low-pitch roofs.

Mechanical ventilation systems were upgraded in the bathrooms and kitchens and positive pressure ventilation systems were also installed, to regulate humidity and reduce the risk of condensation and mould.

On average the works resulted in an Energy Performance Certificate (EPC) rating of C for the homes, significantly upgraded from their previous rating of D or worse. The works, carried out by Sers on behalf of Hafod, have been nominated for a CIH Welsh Housing Award for sustainability.

# Theme 3: De-carbonising new homes

## Where we want to get to

We will continue to build homes to high standards of energy efficiency and drive carbon out of the construction supply chain. We will do this to create affordable, warm spaces that help protect and promote people's health and well-being.

## Context

From a customer perspective, there is abundant evidence that warm and efficient, as well as affordable homes, are far more likely to promote good health and mitigate the worst effects of ill-health. This is at the forefront of new home design at Hafod. With the construction of new homes comes the opportunity to address building fabric, energy systems and lifestyle considerations from the outset. And although the financial viability of developments can be compromised by over-investment in carbon-reduction technologies and design elements, there are many aspects of construction where we can reduce or eradicate carbon.

Hafod's 2021 Regeneration Strategy (currently under review) set out its ambitions in relation to developing new homes and how these impact on de-carbonisation. The overlap between decarbonisation and the Regeneration Strategy is considerable, as developing new homes and place-making are prime opportunities to deliver net zero by design, rather than through retrofit. But also creating new homes and spaces is a carbon-generating activity and every home has a long-term carbon lifecycle that must net out to zero by 2050.

There is growing consensus in UK and Welsh Government guidance that a whole life cycle approach to carbon consumption is required. There are four forms of carbon generation which we need to take account of over the lifecycle of a home:

1. Carbon generated during the construction process itself
2. Embodied carbon – within construction materials, fixtures and fittings
3. Operational carbon used in heating, cooling and living within the home
4. Carbon generated during the disposal or demolition of the home

High sustainability standards come at a cost and affordability and viability considerations need to be balanced against sustainable design. Encompassing net zero specifications in building design results in higher per-unit costs, which affect site viability calculations and rental yield, and in turn long-term business planning. Early evidence from the Welsh Government's Innovative Housing Programme suggests the 'uplift' cost per property to achieve net zero are falling, with some associations reporting uplift costs between £15,000 and £20,000, compared to £30,000 to £40,000 five years ago.

As a bare minimum we will ensure all new homes (including any new integrated care facilities, which are not covered by the standard) meet the carbon reduction targets that existing homes will be subject to through WHQS 2023. In reality most (if not all) homes built in very recent years should reach or far exceed that standard and not require further modifications. As part of this we will need to agree and define what net zero means to us, which may go beyond the basic requirements for EPC-A/SAP 92+ at a point in time, if viability allows (e.g. future-proofing electrical systems, providing EV charging facilities, installing solar-ready roof constructions). We have a track record in developing some of the first Passivhaus standard homes in Wales, in Rhiw Wennol Ddu, Bridgend, and we will consider adopting Passivhaus principles, or a similarly stretching sustainability standard for new homes.

We will take a fabric first approach, driving down carbon consumption through the fundamental components of a home, as opposed to the technological adaptations we will use in existing homes, which may have a finite life span or become less effective over time.

The 2021 Regeneration Strategy (adopted by the Board, but soon to be superseded by a new development strategy) references Off Site Manufacturing (OSM) / Modern Methods of Construction (MMC) and set very ambitious targets. Hafod recoginses the major contribution OSM and MMC can play in achieving net zero and speeding up the build process. These construction methods allow us to significantly improve the thermal performance (by reducing the 'Performance Gap') of our homes where we are increasingly concentrating on a fabric first approach to the de-carbonisation of our new homes. Quality and safety can also be enhanced and there is a strong link with the ability to grow the Welsh timber industry given the de-carbonisation benefits of focusing on timber for more elements of the build. The evolution of the OSM and MMC supply chain is relatively new, and it would be remiss to set further targets that we know we cannot achieve with the current constraints. However, we will continue to support and be at the forefront in the development of OSM/MMC techniques and the supply chain.

Beyond fabric-based approaches to drive down carbon at-source, we will also consider how new home designs will drive down operational carbon through the lifecycle. Hafod is a relatively late adopter in exploring renewable energy and reducing customers' dependence on the grid for energy. Our commitments in the first phase of our strategy, therefore, are to actively explore the viability and reach a clear position on:

- Grid-independent and renewable energy sources, with the intention of driving down energy costs for customers and reducing life-time carbon consumption within homes
- Electric vehicle (EV) charging points in new homes, where grid capacity and site layout allow
- Green roof and similar technologies to support better drainage, increase biodiversity and, crucially, better regulate heat within homes and reduce carbon demand. This will complement our approach to Sustainable Urban Drainage, which is not strictly a carbon reducing measure
- Sourcing of low-carbon materials and components from suppliers, as part of our net zero standard for new homes

We will also need to gather evidence and data from new homes to ensure our assumptions about their performance are accurate and to ensure they meet customers' needs and expectations. We need to understand as much as possible about people's experiences, including the unintended consequences or downsides, and refine our approach accordingly.

**Actions – how we will get there**

| Actions | Timeline |
|---|---|
| Establish a clear low carbon construction standard for all new homes, encompassing the emerging WHQS 2023 guidance as a minimum | 2023/24 |
| Revisit procurement strategy and supplier relationships to affect a move to local or sustainable sourcing of materials (e.g. locally sourced timber) and reduce reliance on materials with high embodied carbon (e.g. brick and concrete) | 2023-2026 |
| Develop a plan for evaluating and implementing renewable technologies (such as PV and battery arrays, air source heating) and low carbon customer benefits, such as EV charging and in-home monitoring systems. | 2023/24 |

| | |
|---|---|
| Engage in national construction skills and labour agenda and consider future needs as part of Hafod people strategy | 2023-2027 |
| Monitor industry developments in emerging technologies - hydrogen fuel cells, ground source pumps and heat networks - which are improving, becoming more reliable and will reduce in cost | 2023-2026 |
| Key deliverables/outputs:<br>• New efficiency standards embedded and being implemented in new developments<br>• Feasibility analysis of photovoltaics, electric vehicle charging and other low carbon technology<br>• Low carbon supply chain being driven through procurement strategy | |

## Theme 4: Low carbon service delivery

### Where we want to get to

We want to seize every opportunity to reduce or eradicate carbon from the way we deliver services, without compromising customer expectations.

### Context

The types of services Hafod provides are fundamentally carbon intensive: the nature of domiciliary care, floating support, neighbourhood services and home maintenance and upgrades require extensive vehicle travel. Also fixed locations such as care homes, extra care schemes and static support services require colleagues to commute to and from work, incurring significant mileage and carbon expenditure.

Most of our sites are currently heated and powered by fossil fuels and many of our buildings are inefficient and in need of significant upgrading to reduce carbon demands. Our business is largely managed and administered through digital systems and while the direct carbon impact of cloud-based technologies is off-site, we need to account for the carbon overhead of an increasingly digital business.

This business model is dually unsustainable - both in terms of the carbon demand it generates and the financial burden it imposes on the business. The unprecedented inflation in energy costs because of the Ukraine-Russia conflict has seen our unit costs for gas and electricity increase three-fold, which creates further impetus to switch to low carbon alternatives.

The pandemic shifted our model to hybrid working and reduced both commuting and in-work travel significantly. This obviously had a major impact on our carbon usage, and we opted to set 2020 as our baseline year, with the ambition of replicating the lower carbon consumption in subsequent years.

The primary measures we can take around service provision involve de-carbonising our energy sources and fleet, as well as addressing behaviour and culture (within Theme 5). As a minimum we will increase the proportion of our power sourced from renewables over the next four years, to be 100% renewable by 2027.

The leasing deal for our internal fleet of vehicles is due for renewal in 2026 and at that point we will aim to convert to electric vehicles, if the charging infrastructure and renewable energy sources to support it are viable. In the meantime the flexible nature of the leasing contract allows us to swap to electric vehicles, so if progress is made ahead if 2026 on infrastructure, we will be able to effect the move sooner. There are lots of variables in the equation for this to make sense, including the future of our main sites and offices, which we will review, and the nature of how we deliver services, which is also likely to evolve in that time.

Our digital strategy is also important in the context of decarbonisation. New digital services will organically reduce the need for travel and face-to-face contact while improving quality and outcomes. Although this is not the explicit aim of the digital strategy, we will consider digital investments in the light of decarbonisation and seek to maximise opportunities where they exist. One such opportunity is process re-engineering, which we are investing in to remodel customer transactions and redesign services: carbon reduction will be one of the key facets of this work.

The targets we have set are ambitious and there are lots of dependencies and moving parts we need to synchronise in order to deliver them. The ultimate aim of decarbonisation to net zero is to reduce the demand for fossil fuels to as close to zero as possible and achieve a net zero balance by offsetting the remaining carbon. However, offsetting, primarily through tree planting which traps CO2, should be a last resort after all other measures have been maximised.

Although offsetting schemes are plentiful, their effectiveness is variable and few meet the accredited standards, which ensure offsetting schemes are protected, managed and measurably remove greenhouse gases from the atmosphere. While offsetting is a last resort, realistically it is something we will need to consider in the latter stages of the strategy if we are to achieve net zero.

This is why our strategy includes a 3-year period beyond the target completion data for retrofit works (2033), in which we can focus on driving the remaining carbon out of our assets and operations or offsetting the remainder if necessary.

**Actions – how we will get there**

| Actions | Timeline |
|---|---|
| Expand carbon baseline to include the procurement of goods and services, commuting and business mileage (Scope 3) and set ambitious reduction targets | 2023-2025 |
| Switch to green tariffs and/or renewable electricity supply at Hafod-controlled locations | 2023-2025 |
| Conduct option appraisal for electrification of heating at Hafod locations, recognising the limited lifespan of gas technology | 2023-2026 |
| Review leasing of Hafod fleet with aim of moving to electric vehicles and accompanying infrastructure | 2025-2026 |
| Identify opportunities to digitise and strip carbon from service delivery (e.g. paperless tenancy contract sign-ups) via process re-engineering and innovation coaching | Ongoing |
| Calculate carbon offset requirements as part of net zero projections | 2028 onwards |
| Key deliverables/outputs:<br>• Refreshed carbon baseline report<br>• Low carbon or electric vehicle fleet launched<br>• Evidence of direct carbon reduction through digitisation of services<br>• Greening of electricity supply in viable locations | |

# Theme 5: The carbon literate organisation

## Where we want to get to

To support our customers to move to net zero, Hafod needs to be a carbon-literate organisation, where carbon reduction is embedded as a principle and colleagues can make it easier for customers to make low carbon lifestyle choices.

## Context

This theme extends across colleagues and customers and underpins themes 1-4. Making sufficient progress on the other themes depends in no small part on a conducive environment where decarbonisation is visible, supported and embedded in decision-making.

The main strategic driver is the need to build more visibility of the de-carbonisation agenda amongst colleagues throughout the business and create the conditions for carbon-saving ideas and initiatives to surface. But there is also evidence that this is improving. For this purpose, we have created Green Champions network, in place of the former Decarbonisation Strategy Steering Group. Colleagues have self-selected to be involved, based on personal interest in the issues, and this aligns with evidence of what works in building internal movements. The Network comprises 10 colleagues from a range of front-facing and back-office functions and has so far met three times to help shape the Decarbonisation Strategy and define the role of the network. We will continue to develop the Green Champions and use them to disseminate the main messages in this strategy as they relate to colleagues.

To build knowledge and understanding of the de-carbonisation context and challenge, in both personal and working lives, we will continue to roll out our carbon literacy training, which has so far reached in excess of 100 colleagues and been well received. This was developed as part of a sector-wide consortium with the accreditation of Manchester Metropolitan University. We evaluated the impact of the programme internally in 2022 and will build this learning into subsequent phases, where we aim to educate further cohorts of colleagues. We will also open up these opportunities to customers who wish to become carbon literate.

There is already evidence that the influence of the Green Champions and a decarbonisation 'lens' on decision-making is ramping up and this has led to some worthwhile outcomes in the short-term:

- Energy audits at care homes in 2022, leading to insulation works, adjustments to heating controls and other small interventions intended to save costs and cut carbon.
- Replacement of around 150 lighting points in St Hilary Court with LED alternatives in late 2022, reducing energy consumption and costs
- Temperature reductions and automation of lighting at St Hilary Court
- Reinstatement of the photovoltaic panels on the roof of St. Hilary Court, which will offset electricity demand and make a positive contribution to the grid
- The decision to supersede quarterly paper rent statements to all contract holders with email equivalents in June 2023

The impact of these small but significant interventions will be evidenced through the updated carbon baseline in 2023/24. Further ideas are surfacing in relation to future use of St Hilary Court; sustainable travel options for colleagues; and the potential to reduce heating demand in high-efficiency buildings such as Golau Caredig.

Internal communication is another key area, in terms of encouraging people to think about carbon-cutting in everyday decisions and sharing our progress towards net zero. The Green Champions Network will develop a year 1 communications plan alongside this strategy, to ensure the early messages are communicated in ways that make sense to colleagues, energise and motivate and reach all corners of the business. The plan will incorporate communications at key colleague touchpoints, such as application packs, induction, appraisals and objective-setting. It will also aim to highlight areas of good practice in carbon-cutting, champion colleagues' efforts and create a simple mechanism for sharing ideas. Where a more structured approach would add value, we will develop ideas through innovation coaching to ensure we learn and understand the impact of new initiatives.

Hafod's People Strategy has a major overlap with decarbonisation, particularly around skills development and embedding carbon-cutting into the way the organisation works. We will explore these overlaps and ensure the two strategies are complementary.

In relation to customers, emissions from heating and powering homes are incorporated in our carbon baseline. While retrofitting existing homes and building new homes with high thermal efficiency will mitigate a proportion of energy consumption, we recognise people's behaviours and habits will also need to change to realise net zero. Although there is recognition that changing behaviour at scale would accelerate progress towards net zero, some of the latest research suggests only small to moderate levels of behaviour change are realistic and technological solutions should be prioritised (Wales Centre for Public Policy, 2023).

Our 2022 research at St. Mellons, in collaboration with Hubbub, reinforces this view. While customers were concerned about climate change and willing to cut carbon from their lifestyles, spiralling cost-of-living pressures divert attention away from the issue and push climate change further down people's priorities. However, we also learned that framing carbon-cutting messages around saving money is a more effective way of engaging people, especially when combined with community action. We used this learning in the design of our cost-of-living support website and distributed a series of guides, featuring St. Mellons residents, on how to stay warm and save money at home.

We will continue using this research to shape customer communications, but we will also need to engage customers in other important ways:

- Gathering feedback from customers in retrofitted homes, to gauge their acceptability and impact on living costs
- Learning from people's experiences of living in newly built high-efficiency, low-carbon homes, including impact on living costs
- Discussing customers' low-carbon pledges through carbon literacy training
- Communicating key carbon-saving measures and achievements to our customers and stakeholders, as seen recently with the decision to shift to electronic rent statements

**Actions – how we will get there**

| Actions | Timeline |
|---|---|
| Develop and deliver year 1 internal communication plan to accompany decarbonisation strategy | 2023/24 |
| Implement next phase of carbon literacy training to be delivered to a further cohort of colleagues, incorporating learning from 2022 evaluation | 2023-2024 |

| | |
|---|---|
| Deliver carbon literacy training to customers, dependent on demand | 2024-2025 |
| Develop forward programme of research to accompany retrofitting schemes and handover of new homes | 2023/24 |
| Prepare and deliver customer communications for winter 2023/24, based on Hubbub/St. Mellons learning | 2023/24 |
| Explore overlaps between decarbonisation and People Strategy | 2023/24 |
| Key deliverables/outputs:<br>• Communications plan to accompany decarbonisation strategy<br>• Refreshed carbon literacy package with participation extended to customers<br>• Results of Switchee and AwareTag trials to inform retrofit programme<br>• Winter 2023/24 energy saving tips/communications<br>• People strategy reflecting de-carbonisation challenges, such as workforce and skills development | |

## How will we know we are succeeding?

The strategy is outcome and customer focused. Ultimately it aims to improve (or at least maintain) the health, well-being and prosperity of customers through decarbonisation, while maintaining focus on the ultimate goal of net zero.

| If we can (outputs) | Then we expect (measure) | Then we have (outcome) | Targets | Validation source |
|---|---|---|---|---|
| Deliver on the actions set out in themes 1-5 | Carbon emissions should reduce incrementally, relative to the 2020 baseline of 13,058 tCO2e | Reached net zero carbon by 2036 | • 40% by 2028<br>• 80%+ by 2033<br>• 100%+ by 2036 | Sequential carbon footprint reports to be commissioned from Carbon Trust |

| | | | | |
|---|---|---|---|---|
| De-carbonise new and existing homes to EPC-C efficiency standard set out in WHQS 2023 | 100% of Hafod homes to achieve SAP 75/EPC-C as a minimum by 2029 | Provided all Hafod customers with energy efficient, healthy homes | • 100% by 2029 | EPC or equivalent data for Hafod properties |
| De-carbonise homes to higher efficiency standards (EPC-A/SAP 92+) in accordance with Target Energy Pathways | The % of homes meeting SAP 92+/EPC-A to increase over time | Provided all Hafod customers with energy efficient, healthy homes to the highest standard we an achieve | • 100% of Target Energy Pathways created by 2027 | EPC or equivalent data for Hafod properties |
| Source alternatives to fossil-fuel-generated energy at affordable tariffs | % of electricity sourced from renewables at Hafod-operated buildings | Taken major step towards chieving net zero | • 50% by 2025<br>• 75% by 2028<br>• 100% by 2030 | Energy billing data |
| Educate and motivate colleagues around carbon reduction | The proportion of overall carbon savings delivered through colleague-led initiatives should increase | Become a carbon literate organisation and moved closer to net zero | • 10% of total carbon reduction per year | Carbon-saving calculator data |
| Convert our fleet to non-fossil-fuel or electric | % of Hafod business miles driven in EV's powered by renewables should increase | Moved closer to net zero | 50% of all business miles by 2028 | Payroll, leasing and energy billing data |

| | | | | |
|---|---|---|---|---|
| Make homes warmer, more efficient and comfortable to live in | A growing % of customers should report improved satisfaction and/or lower energy bills | Customer satisfaction | 90% of survey respondents each year | New contract holder follow-up survey; post-retrofit follow-up survey (to be designed) |
| Develop a compelling ESG offer and assure lenders our decarbonisation strategy is robust | At least one sustainability linked KPI in future borrowing | Financial viability of the organisation | Quantifiable pricing reduction | Loan agreement documents |
| Develop our data linkage relationship with partners to understand the links between health outcomes and decarbonisation | To see some attributable health benefits accruing over time (acknowledging the cause-and-effect problem is difficult) | Comparative health outcome data for people in homes with different energy efficiency levels/levels of comfort | Not suitable for targets | Linked data sets with partners |
| Embed carbon reduction plans in all contracts over £5m and carbon-related KPIs in contracts | To see Scope 3 emissions reduce quicker | Moved closer to net zero | 10% reduction compared to 2021 | Carbon baseline reports and supplier carbon emissions data |

## How will we know we are succeeding?

The strategy is outcome and customer focused. Ultimately it aims to improve (or at least maintain) the health, well-being and prosperity of customers through de-carbonisation, while maintaining focus on the ultimate goal of net zero.

To maintain accountability to the Board, progress on the strategy will be monitored in several ways:

1. through regular reporting to the Hendre and Hafod Boards on the headline indicators, as part of the strategic plan reporting
2. following up the 2022 audit report through the internal audit programme
3. through monitoring the organisation's strategic risk around decarbonisation
4. through a more detailed annual report on the strategy, which will measure progress against all measures and include a narrative on progress and other considerations
5. through self-evaluation

It should be noted that while governance of the strategy is important, ultimately it needs to deliver better outcomes for Hafod customers and communities. As such there needs to be a strong customer influence on how we judge the success of the strategy, and this will be built into the governance approach.

The Green Champions will own the dissemination and communication of the strategy and will regularly review its relevance and publish updates as necessary (e.g. if new guidance is published or national targets are revised).


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