

# Energy Strategy Addendum

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## 1. Introduction

This document has been produced as an addendum to the energy strategy (27141-HYD-XX-XX-RP-Y-5002) submitted to Cherwell District Council as part of the Reserved Matters planning application for the Himley Village development. This has been produced in response to comments on the above report provided by Bioregional in October 2023, and following a meeting held between Bioregional, Cherwell District Council, Hydrock and Cala Cotswolds on 7th February 2024.

### 1.1 Existing Energy Strategy and Operational Carbon Assessment

The current existing operational carbon assessment for the Himley Village development consists of the following:

- » Achieving an **87.6%** improvement in operational carbon emissions (regulated and unregulated carbon)
- » Achieving a **100%** improvement in regulated emissions (those from heating, hot water production, lighting, ventilation and auxiliary power).
- » On-site PV array **of 2.47 MW** which will generate **2,064 MWh** of renewable electricity annually.
- » Efficient building fabric and heating / hot water provided by a mix of ASHPs / GSHPs across the site.
- » An EUI **of 55 kWh/m<sup>2</sup>/yr**.

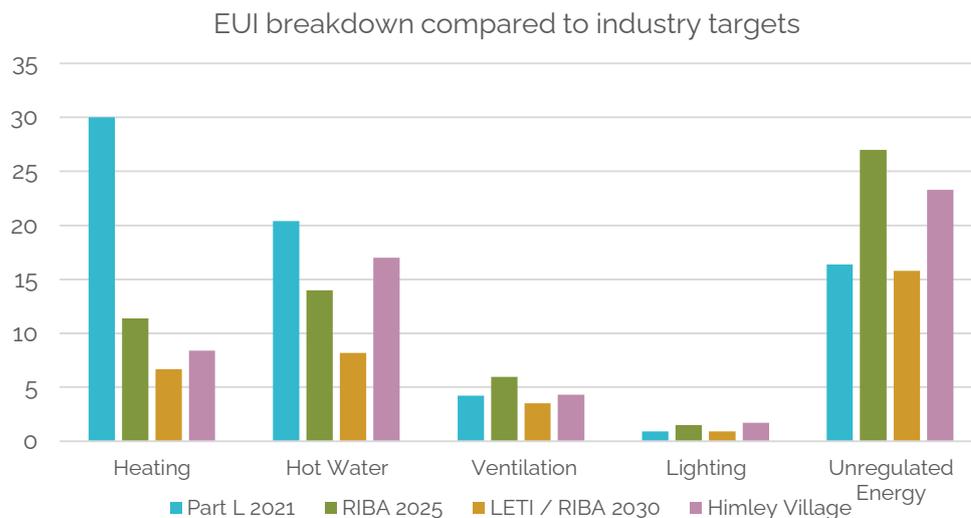


Figure 1 - Existing EUI breakdown for the Himley Village site

## 1.2 Application of District Heating at the Site

During the meeting held with Bioregional and Cherwell District Council on 7<sup>th</sup> February, the approach to district heating was agreed upon and confirmed that, in this instance, the installation of localised ASHPs and communal GSHPs across the site is acceptable. The key reasons for this were outlined in a separate Technical Note by Hydrock (27141-HYD-XX-XX-TN-Y-5006), but for ease have been summarised below:

### Connection to wider NW Bicester Heat Network

- » NW Bicester heat network is currently powered by natural gas which would significantly impact the ability of the site to meet Part L of the UK Building Regulations.
- » Until this heat network is decarbonised the ability to connect will be limited.

### Himley Village Site Heat Network

- » Whilst the outline application stated that a district heat network should be installed on-site, this is significantly out of date (2014).
- » Technology has significantly changed in that time and there is no longer a significant carbon benefit from gas-powered CHP (as suggested in the outline application).
- » Locking the wider 1,700 homes into a heat network may lock developers into stranded technology.
- » Embodied carbon implications of DH network pipework and temporary plant need to be considered as well as any operational carbon savings that may be achieved.
- » In Hydrock's experience, recent calculations and feasibility studies undertaken on sites in the UK indicate that connection to a DHN can result in higher carbon emissions than localised ASHPs in the region of 15-20% depending on the losses occurred in transmission.

## 2. Updated Energy Strategy and Operational Carbon Assessment

Following the above meeting with Bioregional and CDC, Hydrock and Cala Homes have updated the energy strategy and operational carbon assessment.

The updated energy strategy includes a more efficient ASHP with a winter efficiency of 342%. As seen in Figure 2, this has significantly reduced the hot water demand for the development to be closer to the RIBA 2025 and 2030 targets. (Heat pump used is Daikin Altherma ERGA04DAV3A+ which has been agreed by Cala Homes).

The unregulated energy demand has also been reassessed to bring the average EUI down from 23.3 kWh/m<sup>2</sup>/yr to 18.65 kWh/m<sup>2</sup>/yr by updating occupancy profiles and equipment efficiencies to be in line with the current market. Unregulated energy is notoriously difficult to calculate based on the heavy reliance on occupant behaviour and green purchasing habits. Furthermore, the addition of periods spent away from the home with limited energy use (such as holidays) can have a large impact on the overall EUI and are difficult to estimate. It is worth noting that this is based on an average of unregulated energy use across the site and some dwellings may have a lower EUI. Where occupiers are particularly energy conscious, or occupancy is below the average the unregulated energy use may be lower than 18.65 kWh/m<sup>2</sup>.

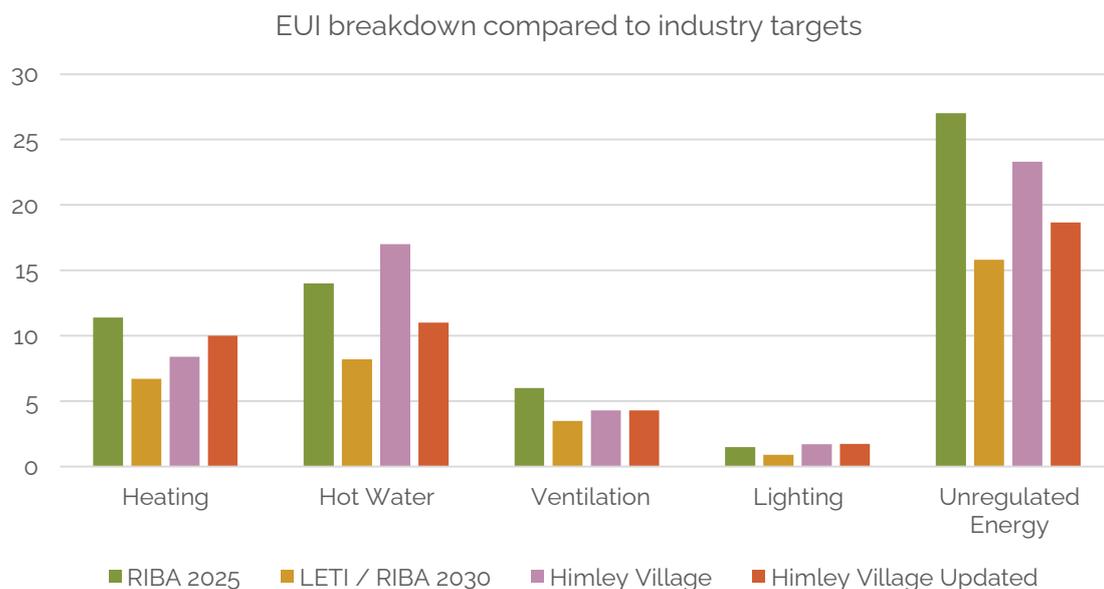


Figure 2 - Proposed EUI breakdown for the Himley Village development

**The above changes to the energy strategy will result in a total 103% reduction in operational carbon emissions.**

### 3. Summary

**The changes made to the energy strategy resulted in a decrease in EUI from 55 kWh/m<sup>2</sup> to 46 kWh/m<sup>2</sup>, and a total operational carbon emissions reduction of 103%.**

**The site is meeting the EcoTowns PPS policy requirement for operational net zero carbon within the boundaries of the site.**

At the time of the site allocation, the UK Governments Ecotowns Planning Policy Statement was still in use. One of the key objectives of this document was to ensure that households and individuals in eco-towns are able to reduce their carbon footprint to a low level and achieve a more sustainable way of living. The EcoTown PPS was dropped when the National Planning Policy Framework (NPPF) was adopted and replaced the existing policy guidance in 2012. The NPPF has a presumption for sustainable development and has been updated multiple times since its adoption in 2012.

The planning policy landscape in the UK at the time of adoption of the Ecotown PPS was significantly different from today. This came shortly after the introduction of Part L of the UK Building Regulations and the forward thinking "Merton Rule". The aim of this was to promote sustainable development in the U.K. and ensure communities were built with the environment and health & wellbeing of residents at the heart of design. There has been a significant shift in the construction industry over the last 15 years towards sustainable development and what would have been deemed "exceptional" and "industry-leading" at the time the PPS was written, is now embedded within building design. The proposed development at Himley Village Phase 2A is not only going above and beyond what would have been considered exceptional at the time the PPS was adopted, the site is achieving energy demand reduction and operational carbon emissions reduction that is significantly beyond the performance of the majority of the residential sector at present.

Furthermore, the design of the site has sought to reduce energy use as far as practical and this level of performance **is exemplary** compared to housing schemes throughout the U.K. The carbon emissions of the site are only one of many considerations in determining the planning application and should be viewed holistically.

