

# Stag Brewery. Be Seen.

## 1. Be Seen.

The final section of the strategy considers additional measures that will be adopted during operation to ensure the risk of performance gap is reduced and high energy performance as designed is maintained throughout the Proposed Development’s lifetime.



Figure 1: Be Seen.

The “Be Seen” stage is acknowledged as a crucial element of the national net-zero commitment. Energy will be monitored and reported to a level of granularity consistent with “Be Seen” requirements.

### 1.1 Monitoring and Reporting.


Effective energy metering in line with Be Seen requirements will be enabled by the provision of suitable infrastructure within the buildings services systems.


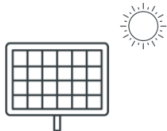


### 1.2 Development Monitoring and Reporting Plan.


The developed strategy will allow for an exhaustive metering of all the various energy usage in the Proposed Development. Electrical meters will be provided on the main central Air Source Heat Pump(s), providing data on plant energy consumption throughout the year. Each area of high energy load will be sub-metered monitor energy consumption in greater granularity and facilitate reporting. All the main sub-systems (i.e. small power, lighting etc) will be separately monitored and their energy usage separately accounted. Energy intensity and carbon emissions will be monitored and reported annually. The Applicant will also complete the GLA’s suggested “Be Seen” energy reporting protocols via the appropriate web portals, at the appropriate stage if required.

Table 1 includes a high-level summary of the reporting requirements for the three ‘be seen’ stages for all reportable units (RU) types. This table intends to capture the overarching similarities between various stages and RUs.

Table 1: Performance indicators for Be Seen.

Indicators	Planning stage	As-built stage	In-use stage
 <b>Contextual data</b>	<ul style="list-style-type: none"> <li>- Location Unique Property Reference Number (UPRN) or Address (if no UPRN available)</li> <li>- Site plan</li> <li>- Typology / Planning Use Class (all included)</li> <li>- GIA (m<sup>2</sup>) for each Typology / Use Class</li> <li>- Anticipated target dates for each ‘be seen’</li> </ul>	<ul style="list-style-type: none"> <li>- Updates of contextual data provided at planning stage, if necessary</li> <li>- GIA (m<sup>2</sup>) for each RU</li> <li>- Confirmation that a verified metering plan is in place</li> </ul>	<ul style="list-style-type: none"> <li>- GIA (m<sup>2</sup>) update for each RU, if necessary</li> </ul>

Indicators	Planning stage	As-built stage	In-use stage
	reporting stage (i.e. 'as-built' and 'in-use')		
 <b>Building energy use</b>	<ul style="list-style-type: none"> <li>- Grid electricity consumption (kWh)</li> <li>- Gas consumption (kWh)</li> <li>- Other fuels consumption (kWh)</li> <li>- District heating/cooling consumption (kWh) (if applicable)</li> </ul>	<b>(SAME AS PLANNING STAGE plus)</b> <ul style="list-style-type: none"> <li>- <i>Predicted</i> DEC grade and rating (for non-residential RUs only)</li> </ul>	<b>(SAME AS PLANNING STAGE plus)</b> <ul style="list-style-type: none"> <li>- <i>Measured</i> DEC grade and rating (for non-residential RUs only)</li> </ul>
 <b>Renewable energy use</b>	<ul style="list-style-type: none"> <li>- Energy generation (kWh)</li> </ul>	<ul style="list-style-type: none"> <li>- Renewable electricity generation (gross) (kWh)</li> <li>- Solar thermal heat generation (kWh)</li> </ul>	<b>(SAME AS AS-BUILT STAGE plus)</b> <ul style="list-style-type: none"> <li>- Renewable electricity exported (kWh)</li> <li>- Renewable energy used on site (kWh)</li> </ul>
 <b>Energy storage</b>		<ul style="list-style-type: none"> <li>- Net electricity flow to EVs (kWh)</li> <li>- Battery storage capacity (kWh)</li> </ul>	
 <b>Plant parameters</b>		Energy centres: <ul style="list-style-type: none"> <li>- Grid electricity, Gas and/or other fuel consumption</li> <li>- Delivered efficiency of each heating/ cooling) generation plant (%)</li> <li>- % of heat supplied from each heating/ cooling generation plant</li> <li>- Predicted losses from heat/cooling distribution pipework (kWh)</li> <li>- District heating/cooling energy import/export (kWh)</li> </ul> Residential and non-residential: <ul style="list-style-type: none"> <li>- District heating energy exported (kWh)</li> <li>- District cooling energy exported (kWh)</li> </ul>	Energy centres: <b>(SAME AS AS-BUILT STAGE plus)</b> <ul style="list-style-type: none"> <li>- Energy input/output to/from each heating/ cooling energy conversion plant (kWh)</li> <li>- Total district heating/ cooling output from production centre (kWh)</li> <li>- Total district heating/ cooling supplied to customers (kWh)</li> </ul> Residential and non-residential: <b>(SAME AS AS-BUILT STAGE)</b>

Indicators	Planning stage	As-built stage	In-use stage
 <b>Carbon</b>	<ul style="list-style-type: none"> <li>Carbon emissions estimates (tonnes CO<sub>2</sub>/m<sup>2</sup>) for residential and non-residential uses separately as well as the whole development</li> <li>Carbon shortfall for the entire development (tonnes CO<sub>2</sub>)</li> <li>Estimated carbon offset amount (£)</li> </ul>	<ul style="list-style-type: none"> <li>Carbon shortfall for the entire development (tonnes CO<sub>2</sub>)</li> <li>Confirmation of carbon offset amount (£)</li> </ul>	

### 1.3 Operational cost: space heating and DHW.

Operational costs for end users are an important consideration when appraising Energy Strategy options. Focussing solely on carbon emissions can lead to unintended consequences in the form of higher-than-expected occupant energy bills if capital and operation expenditure of the energy systems and networks are passed on to end users.

This section provides an appraisal of potential end user costs for both boiler-led communal heating, and communal heat-pump strategies. A summary of the appraisal is shown in Table 2.

The applicability of Renewable Heat Incentive payments relies specifically on two inputs: The efficiency of the ASHP in heating mode, and whether or not the ASHP is designed to provide cooling.

For this assessment, it has been assumed that the same efficiency (3.0) in heating mode can be achieved, and no cooling will be provided.

It should be noted here that funding for the Renewable Heat Incentive is currently confirmed by the government to be available for installations made prior to March 2022. This was confirmed by the Chancellor, Rishi Sunak, in the recent Budget. This is an extension by one year compared to the previous confirmed date of March 2021. It is currently not confirmed whether installations made after this date will be able to make use of this grant. Consumer cost estimates with and without RHI are given below.

Table 2: Operational Cost Appraisal Summary

System:	Estimated Cost per Unit of Heat (pence/kWh)	Notes / Basis of Assessment:
Communal gas boiler (for comparison)	7.8p / kWh	District heating network, no local thermal storage.
ASHP with Renewable Heat Incentive (RHI) included	5.1p / kWh	ASHP system + local storage with immersion. Renewable Heat Incentive (RHI) included.
ASHP with <b>no</b> Renewable Heat Incentive (RHI)	7.7p / kWh	ASHP system + local storage with immersion. Renewable Heat Incentive (RHI) not included.

It is expected that the actual running cost for the DHW system will fall between the two estimated costs calculated in Table 2, provided the Renewable Heat Incentive is still available to the scheme at the time of project completion.

Details of the cost assessment for each scenario, including assumptions, are shown below.

Table 3: Cost Assessment Global Inputs. Unit cost source: BEIS (September 2021).

Global inputs		
Commercial gas	p/kWh	4.82
Commercial electricity	p/kWh	17.74
Dwelling gas	p/kWh	2.86
Dwelling electricity	p/kWh	14.53
ASHP RHI	p/kWh	2.81
Communal riser air temperature	C	20
Cold water temperature	C	10