



Site address

Former Nestlé Factory  
Nestles Avenue, Hayes UB3 4RF

# Energy Statement

Prepared by

BBS Environmental

For

SEGRO plc and Barratt London

Date

September 2017

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Report prepared by: Ken Thomas BSc CEng

A handwritten signature in black ink that reads "Ken Thomas". The signature is written in a cursive style with a large, stylized 'K' and 'T'.

29th September 2017

Assessment type: Full Planning Application

# 1. Introduction

This covering report has been prepared for the joint Applicants, SEGRO plc and Barratt London Ltd, by BBS Environmental, a construction consultancy specialising in sustainability, energy conservation and the application of renewable energy technologies. It has been prepared to accompany a detailed planning application for the redevelopment of the former Nestlé factory site in Hayes in the London Borough of Hillingdon.

The proposals for the whole site comprise the part-demolition of existing factory buildings and associated structures, and redevelopment comprising 120,487 sqm (GEA) of residential floorspace to provide 1,381 dwellings (Use Class C3), office, retail, community and leisure uses (Use Classes A1/A3/A4/B1/B8/D1/D2), 22,663 sqm (GEA) of commercial floorspace (Use Classes B1c/B2/B8 and Data Centre (sui generis)), amenity and playspace, allotments, landscaping, access, service yards, associated car parking and other engineering works.

The joint applicants are leading developers in their respective field of operations, which are very different, and each employ Design Teams which are composed of architects and consultants who specialise in their particular types of development. So, while there will be a single planning application based on a single masterplan, there have been two contributing teams, and the Energy Statement for the site necessarily comprises two parts. This brief covering report brings together the two sets of results, and presents them as prescribed in guidance issued by the GLA in March 2016<sup>(1)</sup>.

It shows that the selected technologies will result in an on-site reduction in emissions from the whole development of 38.73% compared to a Part L1A/L2A: 2013 baseline, and an on-site saving in emissions of 799 Tonnes of carbon dioxide per year. In presenting this information this Energy Statement demonstrates that the proposed development will fully satisfy the applicable planning policies relating to energy conservation, distributed energy networks and renewable energy.

Reference should be made to the individual sections within the following report for further details of the strategy, technologies and systems proposed for the two parts of the development.

Note 1: *Energy Planning: GLA Guidance on preparing energy assessments*, GLA (March 2016)

## 2. Executive Summary

### 2.1 Introduction

This summary sets out the carbon dioxide emissions targets proposed for the development in the three stages of the London Plan 2016 energy hierarchy.

The concept of the hierarchy is that in the first instance passive energy efficiency measures, such as building topology and orientation, and improved insulation, together with certain active measures such as using plant with higher efficiency, should be employed to reduce the energy demand as far as is feasible. The energy hierarchy then requires that the potential for decentralised energy systems and combined heat and power (CHP) is considered. Finally, there is a requirement to evaluate the possible application of renewable energy technologies such as solar panels or wind turbines.

The London Plan 2016 sets targets for and requires evaluations of regulated energy use – i.e. energy related to building services such as heating and lighting. Other energy use is classed as unregulated and covers energy used by the building occupants, for, in the case of dwellings, cooking and appliances, and in the case of other buildings, equipment and other process energy. The assessment methods do not allow the residential energy use to be influenced by the Applicant.

### 2.2 Key results

**Table 1: Carbon dioxide emissions (domestic) at each stage of the energy hierarchy**

Stage	Domestic Buildings Carbon dioxide emissions (Tonnes CO <sub>2</sub> /yr)	
	Regulated	Unregulated
<i>Building Regulations compliant</i>	<b>1,395.86</b>	<b>1,662.23</b>
<i>After efficiency measures</i>	<b>1,353.76</b>	<b>1,662.23</b>
<i>After CHP</i>	<b>1,031.52</b>	<b>1,662.23</b>
<i>After renewable energy systems</i>	<b>882.44</b>	<b>1,662.23</b>

**Table 2: Regulated emissions savings (domestic) at each stage of the energy hierarchy**

Stage	Domestic Buildings Carbon dioxide emissions (Tonnes CO <sub>2</sub> /yr)	
	(T CO <sub>2</sub> /yr)	Percentage
Savings from efficiency measures	<b>42.10</b>	<b>3.02%</b>
Savings from CHP	<b>322.23</b>	<b>23.09%</b>
Savings from renewables	<b>149.08</b>	<b>10.68%</b>
Cumulative on-site savings	<b>513.42</b>	<b>36.78%</b>
Annual savings to be from offset payment	<b>882.44</b>	<b>63.22%</b>
30-year savings from offset payment	<b>26,473 Tonnes</b>	

**Table 3: Carbon dioxide emissions (non-domestic) at each stage of the energy hierarchy**

Stage	Non-domestic Buildings Carbon dioxide emissions (Tonnes CO <sub>2</sub> /yr)	
	Regulated	Unregulated
Building Regulations compliant	<b>668.15</b>	<b>131.98</b>
After efficiency measures	<b>471.80</b>	<b>131.98</b>
After CHP	<b>458.16</b>	<b>131.98</b>
After renewable energy systems	<b>382.19</b>	<b>131.98</b>

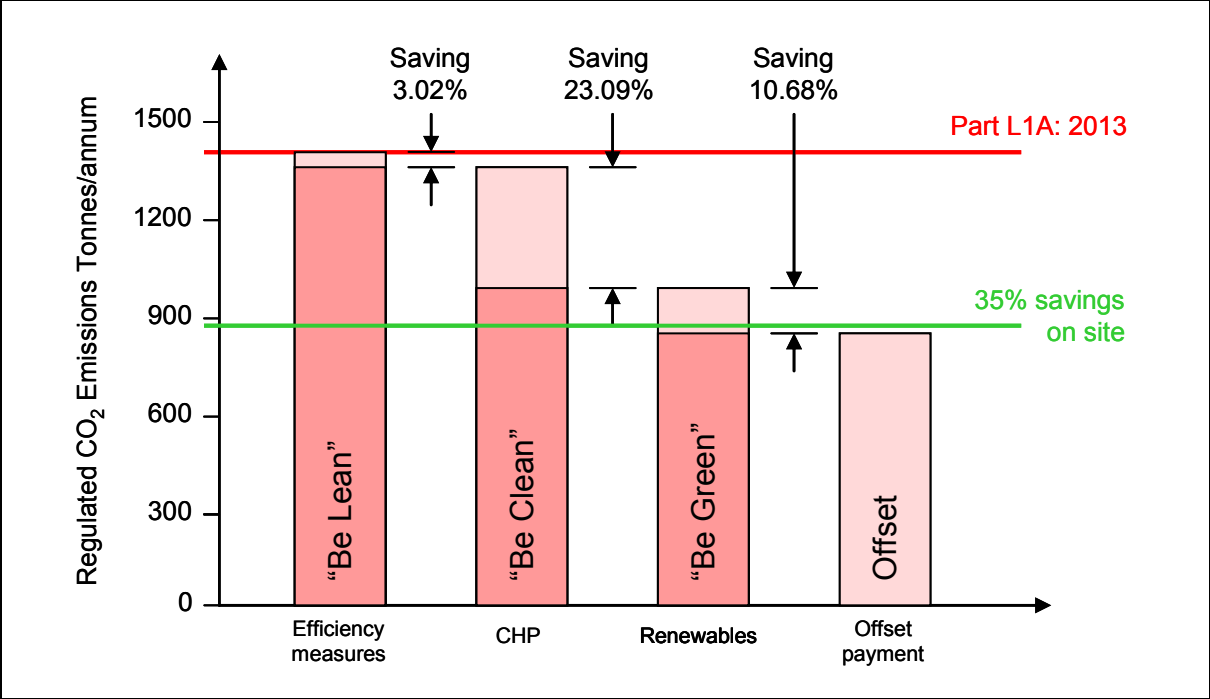
**Table 4: Regulated emissions savings (non-domestic) at each stage of the energy hierarchy**

Stage	Non-domestic Buildings Carbon dioxide emissions (Tonnes CO <sub>2</sub> /yr)	
	(T CO <sub>2</sub> /yr)	Percentage
Savings from efficiency measures	<b>196.34</b>	<b>29.39%</b>
Savings from CHP	<b>13.65</b>	<b>2.04%</b>
Savings from renewables	<b>75.97</b>	<b>11.37%</b>
Cumulative on-site savings	<b>285.96</b>	<b>42.80%</b>
Annual surplus savings (versus 35% target)	<b>52.11</b>	<b>7.80%</b>
30-year savings contribution to offset payment	<b>1,563 Tonnes</b>	

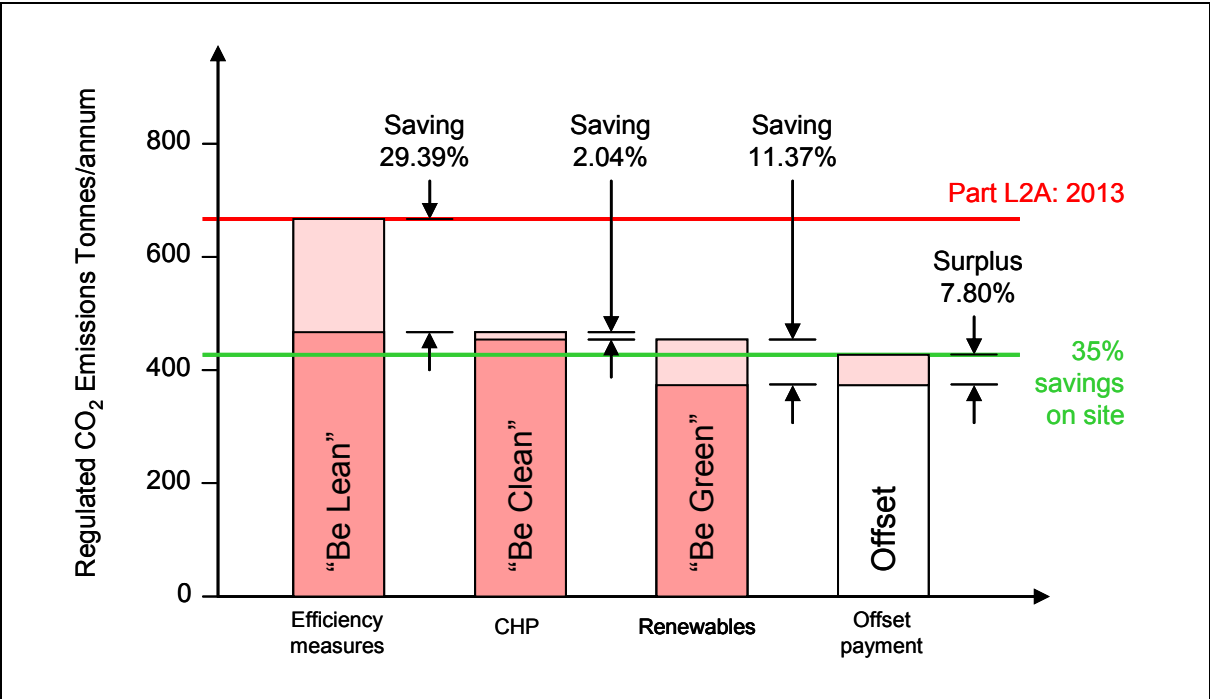
**Table 5: Site wide regulated carbon dioxide emissions and savings**

Combined results for domestic and non-domestic buildings	Site wide		
	Regulated (T CO <sub>2</sub> /yr)	Savings (T CO <sub>2</sub> /yr)	Percentage
Building Regulations compliant (2013)	<b>2064.01</b>		
Be lean (efficiency)	<b>1825.56</b>	<b>238.44</b>	<b>11.55%</b>
Be clean (CHP)	<b>1489.68</b>	<b>335.88</b>	<b>16.27%</b>
Be green (renewables)	<b>1264.63</b>	<b>225.05</b>	<b>10.90%</b>
Cumulative on-site results		<b>799.37</b>	<b>38.73%</b>
Total 30-year savings from offset payment	<b>24,910 Tonnes</b>		

Graph 1: Domestic energy hierarchy and targets



Graph 2: Non-domestic energy hierarchy and targets





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