

# Notice of variation and consolidation with introductory note

## The Environmental Permitting (England & Wales) Regulations 2016

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East London Energy Limited

East London Energy Centre

Kings Yard CCHP

Carpenters Lane

London

E15 2ED

and

Stratford CCHP

Development Block 16

Zone 1 Stratford City Development

Stratford

London

E15 1DB

### **Variation application number**

EPR/XP3330GR/V003

### **Consolidated permit number**

EPR/XP3330GR

# East London Energy Centre

## Permit number EPR/XP3330GR

### Introductory note

#### **This introductory note does not form a part of the notice.**

The following notice gives notice of the variation of environmental permits **EPR/XP3330GR** and **EPR/XP3030GZ** referred to in the status logs below and the replacement of those permits with a consolidated environmental permit.

This is a variation and consolidation of the two permits for energy generation plants at Kings Yard and Stratford as these now comprise one single installation. The installation is named East London Energy Centre. The operator has opened a connector for the two heating networks which means they are 'technically connected'. This change offers better flexibility in the operation for both sites combined which are both controlled from the main control room at Kings Yard. The other key changes implemented by the variation are as follows:

- Removal of reference to the site burning waste wood as a fuel. Only Virgin biomass is burned at the installation;
- Monitoring requirements for the plant have been amended to annual monitoring. This change has associated improvement conditions, IC5 and IC6, requiring further reporting procedures and reporting requirements to be incorporated into the Environmental Management System;
- Monitoring requirements for sulphur dioxide and particulates have been rationalised to reflect the Medium Combustion Plant Directive (MCPD) consisting of removal of the requirements for the engines and amendment from periodic to assessment through 'concentration by calculation' for the gas fired boilers on the Stratford part of the installation;
- The hydrogen chloride emission limit value applicable to the biomass boilers at emission points A11 and A12 has been removed following the completion of improvement condition IC4 in permit EPR/XP3330GR;
- The oxygen reference conditions for monitoring of the engines on site and their emission limit values have been updated to reflect those specified in the Medium Combustion Plant Directive (MCPD). The emission limit values have not increased but are equivalent to those in the original permits but with a different oxygen reference condition;
- The monitoring requirement for the sewer discharge has been removed. This is covered under the sewer undertaker discharge consent;
- Provision was made in the original permit for later installation of additional plant to meet any future increased demand. This increase in thermal input of individual units >15MWth with a common windshield and therefore classified as a Large Combustion Plant (LCP) is unlikely at this time so to rationalise the permit we have removed the option for installation of plant >15MWth and the associated LCP permit text and conditions. A pre-operational condition addresses the 'legacy phase' taking this change into account; and
- All references to LCP including the associated table of process monitoring in S4.3 and LCP specific conditions relating to abatement equipment have been removed.

The operator is considering installing a lithium iron phosphate battery on the installation for use in Short Term Operating Reserve through peak shaving electrical load and provision of grid stability. This is not considered to be a directly associated activity so reference to this is recorded in the introductory note only.

**The rest of the installation is unchanged and continues to be operated as follows:**

### **Kings Yard Combined Cooling, Heat and Power Plant**

The Kings Yard section of the installation provided heating and cooling to the Olympic Park for the 2012 Games, and the subsequent Legacy developments thereafter, as well as supplying surplus electrical power to the National Grid. This section of the installation is located at Carpenters Lane, London, immediately adjacent to the River Lea Navigation, at NGR 537350 184550.

The combustion plant is provided in modular form, comprising the following:

#### Existing Plant (total thermal input 58.35MW<sub>th</sub>)

- 1 x lean burn CHP spark ignition engine (net rated thermal input 7.6MW<sub>th</sub>);
- 2 x dual fuel boilers (net rated thermal input 21.053MW<sub>th</sub> each, net calorific value);
- 1 x wood chip biomass boiler (net rated thermal input 3.75 M<sub>th</sub>).

#### Legacy Phase (total thermal input up to 163MW<sub>th</sub>)

- 5 x lean burn CHP spark ignition engines (net rated thermal input 7.6MW<sub>th</sub>);
- 5 x dual fuel boilers (net rated thermal input <15MW<sub>th</sub> each, net calorific value);
- 2 x wood chip biomass boiler (net rated thermal input 3.75 M<sub>th</sub> each).

The dual fuel boilers and CHP engines will be fired on natural gas, supplied from the mains on a non-interruptible supply contract. Distillate fuel oil may be used as an emergency backup. All combustion units, apart from the emergency generator, are discharged to air via separate stacks within a common windshield.

The main emissions to air are nitrogen oxides (NO<sub>x</sub>), carbon dioxide (CO<sub>2</sub>) and carbon monoxide (CO) from all units, plus sulphur dioxide (SO<sub>2</sub>), particulates and HCl from the biomass boilers. Cyclones and fabric filters will be in place on the biomass boiler exhausts for particulate removal.

Effluent from the water cycle and water treatment plant is discharged under Trade Effluent Discharge Consent with Thames Water, treated at Beckton Sewage Treatment Works and discharged to the Thames estuary.

Wastes are recycled as far as practicable.

CHP electrical efficiency is estimated at 37.3% gross calorific value (GCV), thermal efficiency at 35.4% GCV and overall efficiency at 72.7% GCV. Dual fuel boiler thermal efficiency is estimated at 86.39% GCV at 100% load, 85.9% GCV at 50% load and 84.8% GCV at 20% load. Biomass boiler thermal efficiency is estimated at 83.6% GCV at 100% load. The CCHP under the CHP Quality Assurance (CHPQA) scheme for exemption from climate change levy. Evidence of CHPQA registration has been referenced but not supplied (reference 5731A).

### **Stratford Combined Cooling, Heat and Power Plant**

The Stratford section of the installation is a Combined Cooling, Heat and Power Plant with an aggregate thermal rating exceeding 50 megawatts. It was designed to provide the district chilling, district heating and electrical power to Stratford City and to the south eastern area of the Olympic Park development located within the inner area of London.

The site is located on former Stratford Rail lands that surround the Stratford International Station, which forms part of the Channel Tunnel Rail Link (CTRL). The site is bordered to the north by the CTRL Stratford Box Low Level Station, to the east by the Stratford-Leyton (Temple Mills) railway line and to the west by a primary roadway through the development. The site tapers to the south where there will be a gas sub-station. To the south-west is the Waterworks River, which flows into the River Lea 900 metres to the west.

The site is underlain by clays of the Lambeth group and sands of the Thanet formation classified as a minor shallow aquifer, which is important for local water supplies and base flow to rivers. Surface soils comprise made ground, which is likely to be associated with the former railway land.

The combustion units on site currently comprise of two 8.33 MW thermal input rated spark ignition engine based CHP units operating on natural gas, two dual fuel (natural gas and distillate oil back-up fuel) fired 21.05 MW thermal input rated boilers and one of which can also operate on bio-oil. There was also provision for an additional two CHP units and an additional boiler included in the original permit application but these are not currently installed. In addition there will be one 4.5 MW absorption chiller, five 7 MW electric chillers, storage facilities for distillate oil and renewable bio-oil, one thermal storage tank of hot water and ten cooling towers. The cooling towers are required to meet the heat rejection requirements of the five electric chillers, the absorption chiller and the low grade intercooler heat of the four CHP units. The maximum anticipated combustion demand of almost 100 MW could be met by a number of combinations of units depending on plant and fuel availability. The bio-oil boilers will be operated for around 400 hours per year between October and April.

All seven flues from the CHP engines and boilers (existing units and units included in the application but not currently installed) are housed together in a common, rectangular section stack with a height above local ground level of 43m. The significant pollutants in the exhausts to air are oxides of nitrogen (NOx) and fine particulate matter (PM10). NOx emission is minimised by the use of low emission combustion technology. PM10 emission will only be of relevance when firing bio-oil and these particulates will be minimised by the use of combustion control.

Air dispersion modelling studies of projected emissions to air take into account the Air Quality Management Areas for NO<sub>2</sub> and PM declared in the host and adjacent Local Authorities for the Stratford site and these show that the impact of emissions on ambient air quality is acceptable. Emission of sulphur dioxide (SO<sub>2</sub>) will be negligible when firing natural gas, the principal fuel. Natural gas is provided in a non-interruptible supply arrangement and therefore the use of distillate oil backup fuel will be very rare, reducing the emission of SO<sub>2</sub> from combustion of this fuel to negligible levels.

The main use of water for the installation is as make-up for up to ten cooling towers, which are needed to reject low grade heat. This water will be softened by an ion exchange process that allows the cooling towers to operate at a raised concentration factor of up to 3.5, thus reducing the amounts of water consumed as make-up and discharged as purge flow. Water is provided by the local Thames Water mains supply. Water releases will be discharged into the Thames Water sewer, subject to a Trade Effluent Discharge Consent.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

<b>Status log of permit A: EPR/XP3330GR</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application EPR/XP3330GR/A001	Duly made 11/12/2008	
Additional Information Received	02/06/2009	
Additional Information Received	25/08/2009	
Additional Information Received	26/10/2009	
Additional Information Received	03/11/2009	
Additional Information Received	05/11/2009	
Permit Determined EPR/XP3330GR	07/01/2010	
Notified of change of company name and registered address	23/03/2016	Name changed to East London Energy Limited & address changed to Shared Services Centre Q3 Office, Quorum Business Park, Benton Lane, Newcastle Upon Tyne, NE12 8EX
Variation issued EPR/XP3330GR/V002	05/04/2016	Varied permit issued to East London Energy Limited.

<b>Status log of permit A: EPR/XP3330GR</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Variation determined EPR/XP3330GR/V003 (Billing ref: VP3203SX)	30/06/2020	Varied and consolidated permit issued in modern condition format.

<b>Status log of permit B: EPR/XP3030GZ</b>		
<b>Detail</b>	<b>Date</b>	<b>Response Date</b>
Application EA/EPR/XP3030GZ/A001	Duly made 17/03/2009	
Response to Schedule 5 dated 14/07/2009		04/09/2009
Additional Information Received		11/09/2009
Additional Information Received		05/10/2009
Permit determined EPR/XP3030GZ	10/12/2009	
Notified of change of operator name and registered office address	24/03/2016	Operator name and registered office address changed to East London Energy Limited, Shared Services Centre, Q3 Office, Quorum Business Park, Benton Lane, Newcastle Upon Tyne, England, NE12 8EX.
Variation determined EPR/XP3030GZ/V002	04/04/2016	Varied permit issued to East London Energy Limited.
Variation determined EPR/XP3330GR/V003 Permit EPR/XP3030GZ fully superseded.	30/06/2020	Varied and consolidated permit issued in modern condition format.

End of introductory note

# Notice of variation and consolidation

## The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulations 18 and 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies and consolidates environmental permits

### Permit numbers

EPR/XP3330GR

EPR/XP3030GZ

### Issued to

**East London Energy Limited** (“the operator”)

whose registered office is

**Shared Services Centre**

**Q3 Office**

**Quorum Business Park**

**Benton Lane**

**Newcastle Upon Tyne**

**NE12 8EX**

company registration number **06307742**

to operate an installation at

**East London Energy Centre**

**Kings Yard CCHP**

**Carpenters Lane**

**London**

**E15 2ED**

and

**Stratford CCHP**

**Development Block 16**

**Zone 1 Stratford City Development**

**Stratford**

**London**

**E15 1DB**

to the extent set out in the schedules.

The notice shall take effect from 30/06/2020

**The number of the consolidated permit is EPR/XP3330GR.**

Name	Date
Sifelani Mpofu	30/06/2020

Authorised on behalf of the Environment Agency

## **Schedule 1 – changes in the permit**

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

## **Schedule 2 – consolidated permit**

Consolidated permit issued as a separate document.

# Permit

## The Environmental Permitting (England and Wales) Regulations 2016

### Permit number

**EPR/XP3330GR**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/XP3330GR/V003 authorising,

**East London Energy Limited** (“the operator”),

whose registered office is

**Shared Services Centre  
Q3 Office  
Quorum Business Park  
Benton Lane  
Newcastle Upon Tyne  
NE12 8EX**

company registration number **06307742**

to operate an installation at

**East London Energy Centre**

**Kings Yard CCHP  
Carpenters Lane  
London  
E15 2ED**

and

**Stratford CCHP  
Development Block 16  
Zone 1 Stratford City Development  
Stratford  
London  
E15 1DB**

to the extent authorised by and subject to the conditions of this permit.

Name	Date
Sifelani Mpofu	30/06/2020

Authorised on behalf of the Environment Agency



# Conditions

## 1 Management

### 1.1 General management

1.1.1 The operator shall manage and operate the activities:

- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
- (b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

### 1.2 Energy efficiency

1.2.1 The operator shall:

- (a) take appropriate measures to ensure that energy is used efficiently in the activities;
- (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (c) take any further appropriate measures identified by a review.

### 1.3 Efficient use of raw materials

1.3.1 The operator shall:

- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
- (b) maintain records of raw materials and water used in the activities;
- (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
- (d) take any further appropriate measures identified by a review.

### 1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
- (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
- (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

## **2 Operations**

### **2.1 Permitted activities**

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).

### **2.2 The site**

2.2.1 The activities shall not extend beyond the site, being the land shown edged in red on the site plan at schedule 7 to this permit.

### **2.3 Operating techniques**

2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.

2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation (“plan”) specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.

2.3.3 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

2.3.4 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:

- (a) the nature of the process producing the waste;
- (b) the composition of the waste;
- (c) the handling requirements of the waste;
- (d) the hazardous property associated with the waste, if applicable; and
- (e) the waste code of the waste.

2.3.5 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

### **2.4 Improvement programme**

2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.

2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

### **2.5 Pre-operational conditions**

2.5.1 The operations specified in schedule 1 table S1.4 shall not commence until the measures specified in that table have been completed.

## **3 Emissions and monitoring**

### **3.1 Emissions to water, air or land**

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.2 and S3.3.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

### **3.2 Emissions of substances not controlled by emission limits**

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
  - (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
  - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

### **3.3 Odour**

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:
  - (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;
  - (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

### **3.4 Noise and vibration**

- 3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.
- 3.4.2 The operator shall:

- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
- (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

## **3.5 Monitoring**

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
  - (a) point source emissions specified in tables S3.1, S3.2 and S3.3.
- 3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1, S3.2 and S3.3 unless otherwise agreed in writing by the Environment Agency.

## **4 Information**

### **4.1 Records**

- 4.1.1 All records required to be made by this permit shall:
  - (a) be legible;
  - (b) be made as soon as reasonably practicable;
  - (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
  - (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
    - (i) off-site environmental effects; and
    - (ii) matters which affect the condition of the land and groundwater.
- 4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

### **4.2 Reporting**

- 4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.
- 4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the annual production /treatment data set out in schedule 4 table S4.2; and
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:

- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
- (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and
- (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

## 4.3 Notifications

4.3.1 In the event:

- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
  - (i) inform the Environment Agency,
  - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
  - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) of a breach of any permit condition the operator must immediately—
  - (i) inform the Environment Agency, and
  - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.3.2 Any information provided under condition 4.3.1(a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit, shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

- (a) any change in the operator's trading name, registered name or registered office address; and
- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

- (a) any change in the operator's name or address; and
- (b) any steps taken with a view to the dissolution of the operator.

In any other case:

- (a) the death of any of the named operators (where the operator consists of more than one named individual);
- (b) any change in the operator's name(s) or address(es); and
- (c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

- (a) the Environment Agency shall be notified at least 14 days before making the change; and
- (b) the notification shall contain a description of the proposed change in operation.

4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

## **4.4 Interpretation**

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

# Schedule 1 – Operations

<b>Table S1.1 activities</b>		
<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
S1.1 A1 (a)	Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts.	From receipt of fuels to despatch of electricity and heat.
<b>Directly Associated Activities</b>		
Directly associated activity	Supply of utilities such as electrical power and natural gas.	Utilities and services systems within the Installation boundary, including the natural gas above ground installation.
Directly associated activity	Storage and handling of raw materials.	Includes distillate oil and bio oil receipt and storage, and materials for water softening plant.
Directly associated activity	Storage and handling of wastes generated by the process.	From receipt of wastes from the process to despatch from site.
Directly associated activity	Chilling plant	Including absorption and electric chillers.
Directly associated activity	Heat buffer	Including thermal storage in water tanks.
Directly associated activity	Abatement plant for emissions to air from the biomass boiler plant.	From receipt of particulate laden air to final clean air exhaust.

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application XP3330GR (Kings Yard)	Sections 3.5, 3.6, 3.7, 3.8, 3.9 of the supporting information document 8516-UEG-KYC-Y-REP-0102 to the application.	11/12/2008
Response to Schedule 5 Notice dated 05/03/2009 XP3330GR (Kings Yard)	Response to questions 1 – 13 excluding 4, 8 and 10.	02/06/2009
Response to Request for Information dated 14/07/2009 XP3330GR (Kings Yard)	Response to Request for Information regarding Carbon Monoxide emissions from CHP Units	25/08/2009
Response to Request for Information dated 19/10/2009 XP3330GR (Kings Yard)	Response to Request for Information regarding proposals for emissions of Oxides of Nitrogen.	26/10/2009
Response to Request for Information dated 11/09/2009 XP3330GR (Kings Yard)	Response to request for information on raw materials and emissions to sewer	03/11/2009
Response to Request for Information dated 19/10/2009 XP3330GR (Kings Yard)	Response to Request for Information regarding proposals for emissions of Oxides of Nitrogen.	05/11/2009
Application XP3030GZ (Stratford)	Sections 3.5, 3.6, 3.7, 3.8, 3.9 of the supporting information document 8516-UEG-STD-Y-REP-0103_final.doc to the application.	17/03/2009

<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Schedule 5 Notice dated 14/07/2009 XP3030GZ (Stratford)	Additional information on operating techniques, emissions and BAT assessment required to enable the application to be determined	04/09/2009
Additional information request dated 10/09/2009 XP3030GZ (Stratford)	Supporting documents received	11/09/2009
Additional information request dated 28/09/2009 XP3030GZ (Stratford)	Plant operating temperatures and set limits logged in the CODEL system	05/10/2009
Response to regulation 61(1) Notice – request for information dated 01/05/2018 XP3330GR and XP3030GZ (East London Energy Centre)	Confirmation of intention to remain below the threshold associated with Large Combustion Plant and to consolidate the permits XP3330GR and XP3030GZ.	19/06/2019
Information provided in response to POC06	Drainage plan provided on completion of POC 6.	-

<b>Table S1.3 Improvement programme requirements</b>		
<b>Improvement conditions IC1 – IC4 from both permits XP3330GR and XP3030GZ are complete and have therefore been removed from the permit.</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC5	<p>The operator shall propose equipment and a methodology for monitoring of emissions of oxides of nitrogen and carbon monoxide from the dual fuel boilers and CHP engines as part of the routine emissions checks for the plant. The monitoring shall be carried out using equipment that meets the standards set out in <i>'Technical Note M5 – Monitoring of stack gas emissions from medium combustion plants and specified generators'</i>.</p> <p>This methodology and appropriate frequencies for testing and reporting should be incorporated into an operational procedure.</p> <p>Once approved this procedure should be incorporated into the site Environmental Management System and monitoring and reporting carried out to the methods and timescales specified.</p>	31/12/2020
IC6	<p>The operator shall investigate the introduction of a continuous emissions monitoring (CEM) system for monitoring of particulates for the biomass boilers (emission points A11 – A12).</p> <p>If a suitable system is identified this system should be installed and a methodology proposed for monitoring of emissions of dust from the biomass boilers continuously using equipment that meets the standards required by EN 17389. This methodology and appropriate frequencies for testing and reporting should be incorporated into an operational procedure.</p> <p>Once approved this procedure should be incorporated into the site Environmental Management System and monitoring and reporting carried out to the methods and timescales specified.</p>	31/03/2021



<b>Table S1.4 Pre operational conditions for future and planned developments</b>		
<b>Reference</b>	<b>Operation</b>	<b>Pre operational measures</b>
POC 7	Addition of any combustion plant to the installation following the issue of variation EPR/XP3330GR/V003 up to a limit of 163MW <sub>th</sub> comprising individual units <15MW <sub>th</sub> in size.	<p>The operator shall supply details in writing for approval by the Environment Agency if the operator wishes to increase the MW<sub>th</sub> of plant on site:</p> <ul style="list-style-type: none"> <li>- Demonstration that the environmental impact is no greater than concluded in the original impact assessment submitted with the permit applications.</li> <li>- A BAT justification for the proposed operation, including any environmental impact assessments that may be relevant.</li> <li>- Proposed Emission Limit Values for the plant and methods of emission monitoring to be conducted which should be considered against the requirements the Medium Combustion Plant Directive.</li> </ul>

## Schedule 2 – Waste types, raw materials and fuels

<b>Table S2.1 Raw materials and fuels</b>	
<b>Raw materials and fuel description</b>	<b>Specification</b>
<b>Kings Yard CCHP</b>	
Wood chip	Virgin wood chip
Distillate oil	Less than 0.1% by mass sulphur content.
<b>Stratford CCHP</b>	
Bio oil	Sourced from a Virgin oil. Less than 0.1% by mass sulphur content.
Distillate oil	Less than 0.1% by mass sulphur content.

## Schedule 3 – Emissions and monitoring

<b>Table S3.1 Point source emissions to air – emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location as shown on the site plans in Schedule 7</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit) Note 1</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
<b>Kings Yard CCHP</b>						
A1 – A5	CHP engine exhausts (natural gas firing)	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	95 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 14792
A1 – A5	CHP engine exhausts (natural gas firing)	Carbon monoxide	150 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 15058
A6 – A10	Dual fuel boilers (natural gas firing)	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	100 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 14792
A6 – A10	Dual fuel boilers (natural gas firing)	Carbon monoxide	30 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 15058
A11 – A12	Biomass boilers	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	400 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 14792
A11 – A12	Biomass boilers	Carbon monoxide	230 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 15058
A11 – A12	Biomass boilers	Particulate matter	20 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 13284-1
A11 – A12	Biomass boilers	Sulphur dioxide	200 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 14791
<b>Stratford CCHP</b>						
A1 – A4	CHP engines (natural gas firing)	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	95 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 14792
A1 – A4	CHP engines	Carbon monoxide	150 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 15058

<b>Table S3.1 Point source emissions to air – emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location as shown on the site plans in Schedule 7</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit) Note 1</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
	(natural gas firing)					
A5 – A7	Dual fuel boilers (natural gas firing)	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	100 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 14792
A5 – A7	Dual fuel boilers (natural gas firing)	Sulphur dioxide	10 mg/m <sup>3</sup>	-	Annually	Concentration by calculation
A5 – A7	Dual fuel boilers (natural gas firing)	Particulate matter	5 mg/m <sup>3</sup>	-	Annually	Concentration by calculation
A5 – A7	Dual fuel boilers (natural gas firing)	Carbon monoxide	30 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 15058
A7	Dual fuel boiler (Bio-oil firing)	Oxides of nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	250 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 14792
A7	Dual fuel boiler (Bio-oil firing)	Sulphur dioxide	175 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 14791
A7	Dual fuel boiler (Bio-oil firing)	Particulate matter	15 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 13284-1
A7	Dual fuel boiler (Bio-oil firing)	Carbon monoxide	150 mg/m <sup>3</sup>	Hourly average	Annually	BS EN 15058

Note 1: Reference conditions for monitoring as specified in Schedule 6.

<b>Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. unit)</b>	<b>Reference Period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
<b>Kings Yard CCHP</b>						
W1 on site Drainage Plan agreed under POC6	Site drainage	Uncontaminated surface water	No limit applies	-	-	-

<b>Table S3.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site– emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. Unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
<b>Kings Yard CCHP</b>						
S1 on site layout plan in Schedule 7 emission to Thames Water Beckton Sewage Treatment Works	Site effluent	No parameters set	No limit applies	-	-	-
<b>Stratford CCHP</b>						
S1 on site layout plan in Schedule 7 foul water discharge and process discharge connection	Site effluent	No parameters set	No limit applies	-	-	-

## Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

<b>Table S4.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
<b>Kings Yard CCHP</b>			
Emissions to air Parameters as required by condition 3.5.1.	A1 – A12	Every 12 months	1 January
<b>Stratford CCHP</b>			
Emissions to air Parameters as required by condition 3.5.1.	A1 – A7	Every 12 months	1 January

<b>Table S4.2 Annual production/treatment</b>	
<b>Parameter</b>	<b>Units</b>
Electrical energy output	MWh <sub>e</sub>
Heat energy output	MWh <sub>th</sub>
Chilled water output	MW <sub>hr</sub>

<b>Table S4.3 Performance parameters</b>		
<b>Parameter</b>	<b>Frequency of assessment</b>	<b>Units</b>
Water usage (input)	Annually	Tonnes
Natural gas usage	Annually	Tonnes/MWh output
Bio-oil usage	Annually	Tonnes/MWh output
Time spent on Bio-oil firing	Annually	Hours
Distillate-oil usage	Annually	Tonnes/MWh output
Time spent on Distillate-oil firing	Annually	Hours
Biomass usage	Annually	Tonnes/MWh output
Time spent on fuel oil firing	Annually	Hours

<b>Table S4.4 Reporting forms</b>		
<b>Media/parameter</b>	<b>Reporting format</b>	<b>Date of form</b>
Air	Form air 1 or other form as agreed in writing by the Environment Agency	30/06/2020
Water and Land	Form water 1 or other form as agreed in writing by the Environment Agency	30/06/2020
Water usage	Form water usage 1 or other form as agreed in writing by the Environment Agency	30/06/2020

<b>Table S4.4 Reporting forms</b>		
<b>Media/parameter</b>	<b>Reporting format</b>	<b>Date of form</b>
Energy usage	Form energy 1 or other form as agreed in writing by the Environment Agency	30/06/2020
Other performance indicators	Form performance 1 or other form as agreed in writing by the Environment Agency	30/06/2020

# Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

## Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

<b>(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution</b>	
<b>To be notified within 24 hours of detection</b>	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

<b>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	



<b>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Measures taken, or intended to be taken, to stop the emission	

<b>Time periods for notification following detection of a breach of a limit</b>	
<b>Parameter</b>	<b>Notification period</b>

<b>(c) Notification requirements for the detection of any significant adverse environmental effect</b>	
<b>To be notified within 24 hours of detection</b>	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

## Part B – to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

\* authorised to sign on behalf of the operator

## Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“emissions to land” includes emissions to groundwater.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission limit.

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“Medium Combustion Plant” or “MCP” means a combustion plant with a rated thermal input equal to or greater than 1 MW but less than 50 MW.

“Medium Combustion Plant Directive” or “MCPD” means Directive 2015/2193/EU of the European Parliament and of the Council on the limitation of emissions of certain pollutants into the air from medium combustion plants.

Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

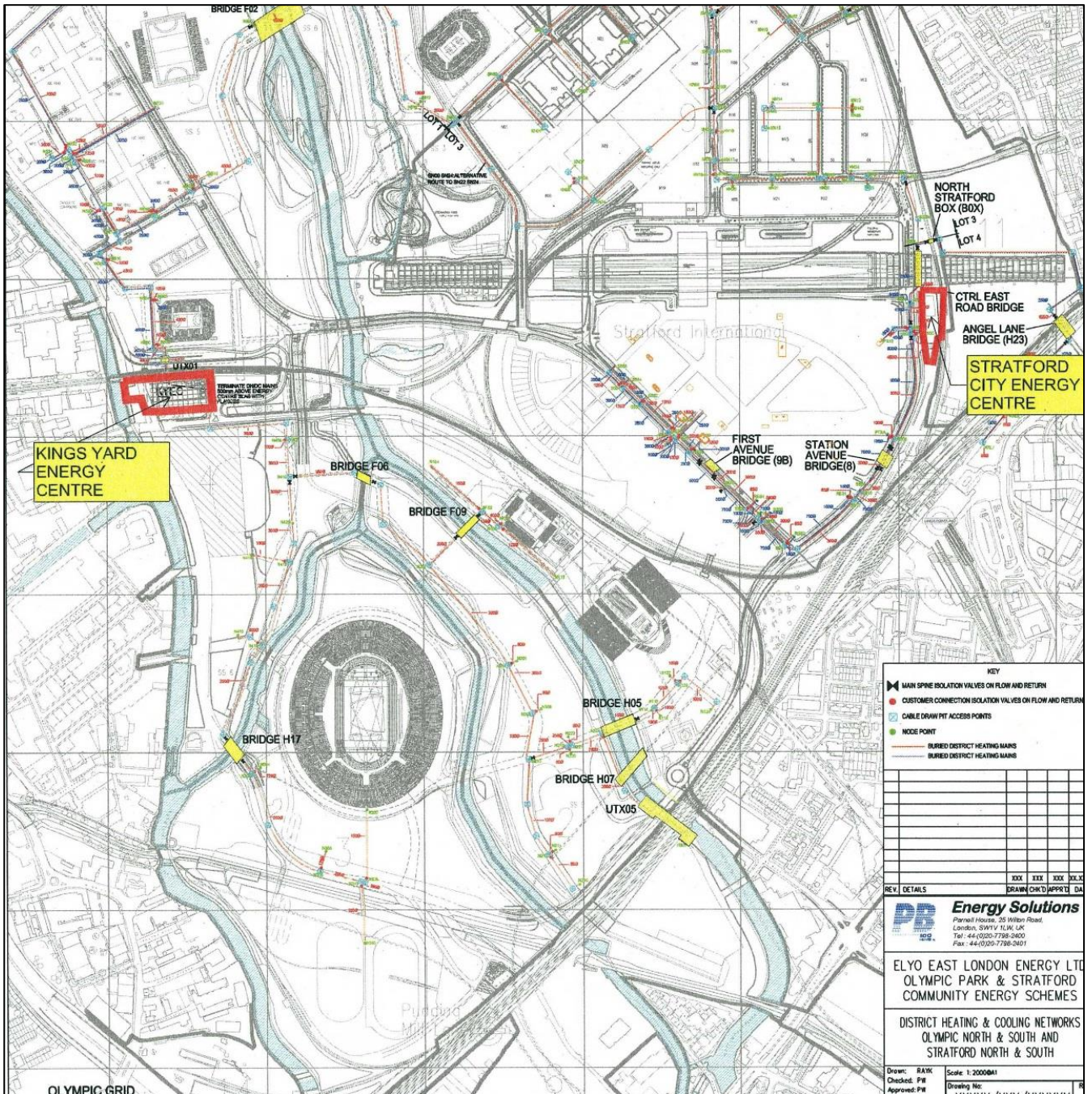
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels other than gas engines or gas turbines, 6% dry for solid fuels; and/or
- in relation to emissions from gas engines or gas turbines, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 15% dry for liquid and gaseous fuels ; and/or
- in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

“year” means calendar year ending 31 December.

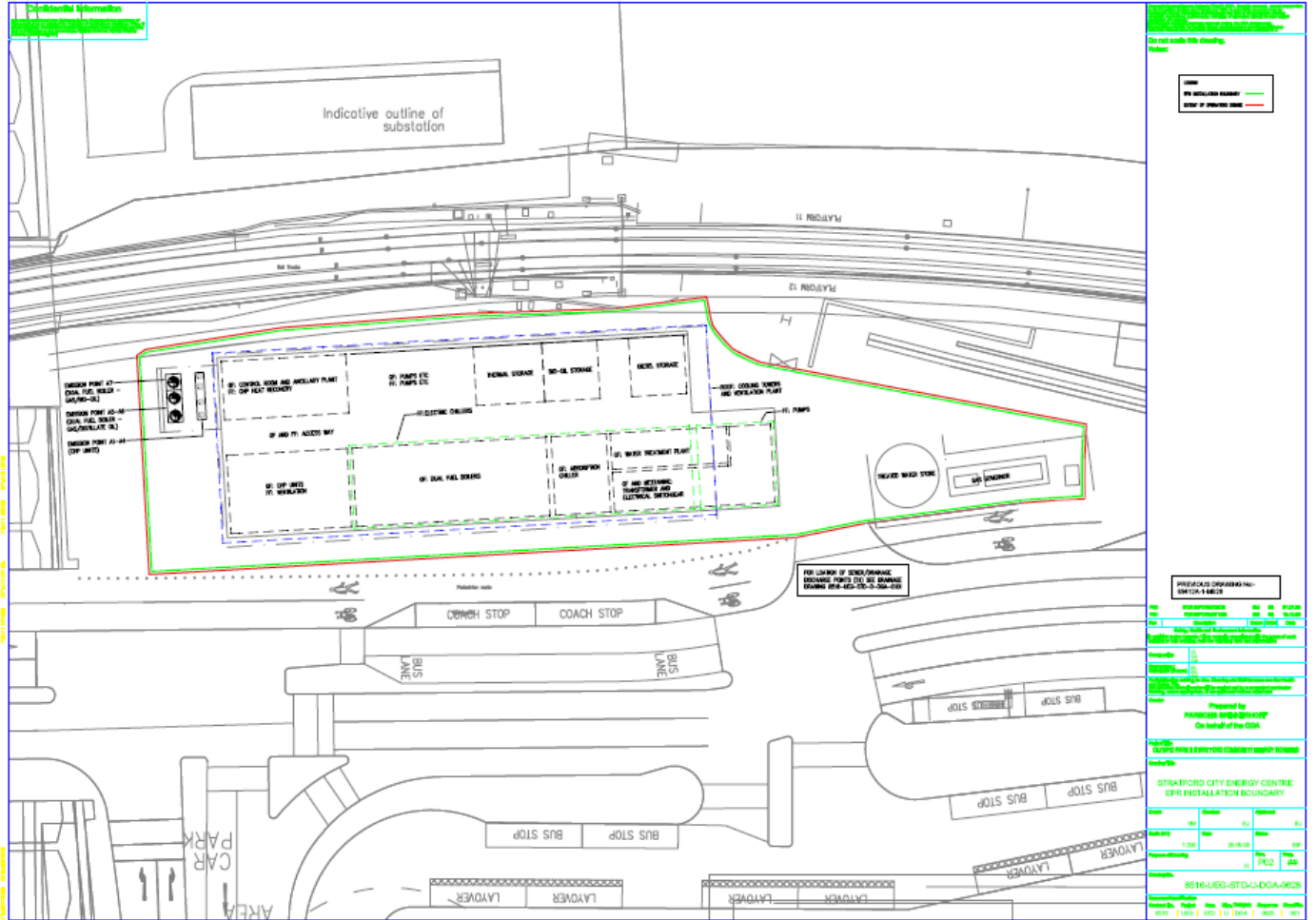
# Schedule 7 – Site plan

## Installation boundary





# Stratford CCHP Site Layout



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