# Dorset Green H2 Project

# Turnkey Engineering Procurement and Construction (EPC) of 5MW (AC) Dorset Green Solar Farm.

**Instructions to Tenderers**

**Date: 26 April 2021**

**Return Date: 26 May 2021**

# Contents

## INVITATION TO TENDER

TENDERERS are required to fully comply with the following Instructions to Tenderers when preparing their tenders. Tenderers' particular attention is drawn to the fact that non-compliance with such instructions may, and in stated circumstances shall, invalidate their tender.

## 1. INTRODUCTION

### *1.1 Project Summary*

This project comprises of the installation of an electrolyser with a compressor directly connected to a solar farm that has operational capacity of 5MW with supplemental energy either coming from locally installed gas engines or the grid.

The proposed 1 to 1.5 mega-Watt (MW) Proton Exchange Membrane (PEM) electrolyser will be installed on-site and used to produce green hydrogen, from a potable water feed and will be powered by the co-located solar farm – producing a carbon free fuel and energy storage opportunity that can be used to help decarbonise a number of downstream applications.

Within this project, the green hydrogen will be compressed and filled into hydrogen trailers.

This hydrogen is anticipated to be transported off-site for a variety of applications, however, neither of these distribution/use scenarios are included within this Tender.

Delivery of the solar farm is required as quickly as possible.

### *1.2 Project Scope*

The Solar Farm shall be supplied in accordance with the diagram, provided below, within the red outline. Any deviations from this proposed scope and system requirements, should be thoroughly detailed, and explained by the Principal Contractor.

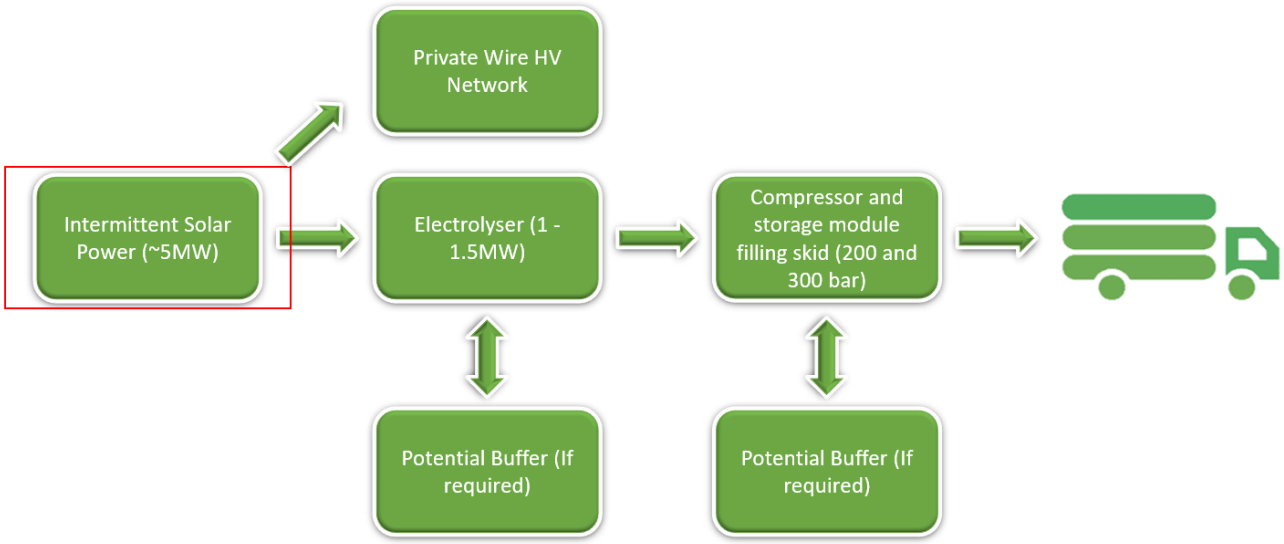



*Figure 1: CRE Project - scope for Tenderers is included within the red bracket.*

The Principal Contractor will ensure their compliance with the following tender documentation that describes the technical specification and necessary minimum requirements and technical characteristics for the design, supply, installation, testing & commissioning and delivery of 5MW (AC) Dorset Green Solar Farm required from the Tenderer.

### 1.2.1 Photovoltaic System Summary

The solar arrays shall be interconnected on a local DC distribution network that shall end in DC / AC Inverters. The provision of the Photovoltaic System shall be such as to guarantee the required voltage of interconnection, which may include suitable transformers as necessary.

The basic electrical and mechanical (E/M) equipment for the PV system shall be mapped into the design and final documentation, to enable location of each component in event of recall, and consist of the following integral aspect:

a) PV modules;

b) Metal supporting frames and foundations;

c) Inverters DC/AC;

d) Direct Current (DC) distribution system;

e) Low voltage distribution system (AC) or high voltage distribution system as applicable;

f) Best efforts should be undertaken to minimise parasitic loads within the plant;

g) Metering for Grid Connection to include a MID compliant export and import meter;

h) Monitoring system (including minimum of 2 (two) pyranometers secondary standard (as defined by ISO 9060)) with generation recording and transmission capability for remote monitoring;

i) All equipment necessary for the automatic restart and reconnection of the PV system to the grid following a power outage or other grid-disconnection, conforming to G99, Active Network Management (ANM) compliance and all other applicable regulations;

j) The procurement and installation of site security fencing and CCTV cameras to the standard required by the project insurance.

k) The procurement and installation of monitoring systems for the plant.

### 1.2.3 Design, Delivery, Supply, Installation, Testing, Commissioning & Accreditation, Operational Training and 5-year maintenance programme of photovoltaic system

This Request for Tender is issued to solicit proposals for acting as the Principal Contractor for Dorset Green Solar Farm with an export capacity of 5 MW (AC) photovoltaic (PV) power plant located on the land at Energy Site Control Centre, Arena Way, Wimborne, Dorset, England, BH21 3AL.

The Principal Contractor shall provide full details on the following characteristics as a minimum:

I. The positioning of Photovoltaic System component parts such that they can be operated and maintained in a safe manner. For example, inverters should be placed in an easily accessible area;

II. The design of a suitable system for the individual ground-based site with regard to access and ground conditions, including appropriate surface water drainage and care to existing landfill infrastructure including but not limited to leachate collection systems, gas collection systems, and engineered liner systems;

III. Transportation, handling and installation methodology of all equipment which is in line with manufacturers' recommendations and which does not compromise the warranties of any piece of equipment;

IV. Operation and maintenance of Photovoltaic System components in line with 2-year warranty period. A subsequent 3 year maintenance programme should be costed and included. The Principal Contractor will maintain serial numbers and all other information necessary in order to act on behalf of the Employer in the event of a warranty claim;

V. The construction and foundation of all supporting or mounting structure as necessary according to the manufacturer guidelines and recommendations or consulting engineers design, taking due care and considerations of a ground conditions and environmental permits relating to the use, restoration and operation of the site as a landfill;

VI. The installation of one or more generation meters at the output of the inverters and ensuring the Photovoltaic System is able to have Measuring Instruments Directive (MID) 2004/22/EC approved MOP (Meter Operator Provider) import/export meters installed. This will be carried out by an appointed Meter Operator in coordination with the Owner and Owners Representative, as the site will be connecting to an existing Point of Connection (POC)/ Point of Supply (POS);

VII. Arrange and support the Employers for all necessary requirements for the Employer to enter into Meter Operation Provision, Data Collection and Aggregation, Import Supply contracts.

VIII. The installation of a minimum of two secondary standard (as defined by ISO 9060) digital pyranometers, data loggers and effective monitoring system complete with remote monitoring to monitor the performance of the Photovoltaic System;

IX. The Principal Contractor should ensure the installation achieves accreditation via the industry standard Preliminary, Intermediate and Final accreditation certificates.

All requirements shall be supplied by the Principal Contractor, with all submitted documentation in the English language. Furthermore, The Principal Contractor shall be responsible for discharging the relevant planning permission conditions.

The Principal Contractor shall be responsible for CDM 2015 requirements.

### 1.2.4 Process Control

The Principal Contractor is responsible for the safe handling of all process signals, interfaces, inputs and values used to control the installation.

The operation, monitoring, control and safe operation of all supplied system components and processes should be fully incorporated into the system's control systems.

Any required changes, or updates, to the software, should be included within the quotation.

The architecture of the control and safety systems must include the following features:

- The installation should be capable of autonomous operation, without regular human interaction.
- The control systems provided should be proven, robust and have high availability.
- The Principal Contractor should use software which is easily maintainable.
    - The Principal Contractor should also provide any necessary operating licenses with the implemented system.
- The control system of the solar farm shall protect the equipment from damage.

Human Machine Interfaces (HMI) should have different levels of access and have the option of being password locked to allow varying levels of operator different levels of system control and process upset analysis/diagnostics. Its software shall be supplied with any necessary operating licenses.

The Principal Contractor and customer shall agree the HMI navigation menu and the logical layout/progression of all screens.

*The HMI should include:*

- Graphical presentation of:
    - Processes
    - Sequences
    - Object Statuses
- Reporting, acknowledging and logging of alarms, warnings and events.
- Logging of current process data and acquired archive data.
- Archiving of measured values and alarms, warnings and events in a process database.

The control system shall be capable of both logging data, with an acceptable sample rate and data storage time for CRE, and reports on operation/performance of the system. The log should contain the following data:

- Input and Output Signals
- Calculated Values
- Alarms
- Warnings
- Status
- Events
- Set Points

### 1.2.5 Scope of Work/Supply

All labour and materials, necessary for the completion of the work in a safe, timely and efficient manner are the responsibility of the Principal Contractor. This includes, but is not limited to:

- Design, engineering, purchasing, manufacturing, testing, transportation, storage, construction and commissioning (including labour/materials) of the supplied system as detailed in this specification.
- Supply of systems with functionality according to this specification, including, for example, on-site activities such as cranage/installation works (etc.).
- Supply of all HV electrical equipment, cabling, commissioning, and certification past the point of connection as detailed in section 1.6. See Appendix 2 for the proposed site SLD.
- CDM 2015 requirements, method Statements and risk assessments for the scope of works.
- Necessary Tests for confirmed functionality of system and installation:
    - SAT – Site Acceptance Test
    - OAT – Operational Acceptance Test
- Supply of a full set of required documents (in word format) – as detailed throughout this document.
- Supply of application software and associated manuals for all control systems, including all necessary licenses for operation.
- Training for site staff, as specified.

The following items are excluded from the scope of the Principal Contractor:

- Electrical activities beyond the Point of Connection
- Supply of the Solar Substation

### 1.2.6 Maintenance and Production capacity over first 5 years operation

The system must produce an average annual generation of 6800 MWh/year for the first two years of operation, in line with the supplier warranty period.

An anticipated preventative maintenance schedule is required for the initial 5-year operating period from the Principal Contractor.

A service agreement containing a costed schedule with details of all spares, Principal Contractor labour costs, any remote service costs and consumables used over an initial 5-year period is required from the Principal Contractor.

### 1.2.7 Project Management

#### *1.2.7.1 Team*

The Principal Contractor is expected to allocate sufficient resources to produce an appropriate structure that ensures the timely and delivery, installation and operation of a reliable system. Furthermore, the Principal Contractor is expected to communicate with CRE in a satisfactory manner, including regular reporting to CRE and on-going project management. Regular, recorded meetings should be organised by the Principal Contractor, with CRE, to update on the whole status of the project.

#### *1.2.7.2 Schedule*

A detailed GANTT chart should be provided by the Principal Contractor detailing all significant/critical path events that will enable the on-time operation of the system. This GANTT chart should include details on the following:

- Design/Engineering
- Purchasing
- Manufacturing
- Testing
- Site access
- Delivery to site
- Installation
- Commissioning
- Snagging
- Training

Any omissions to these details should be explained. Updates to these charts should be effectively communicated to CRE on a monthly basis, in the form of a progress report on project activities.

#### *1.2.7.3 Delivery Plan*

The Principal Contractor shall prepare a project delivery plan covering all equipment and site activities (e.g., detailed design, sub-contractor management for main equipment modules, procurement, delivery, method statements, installation and commissioning, etc.).

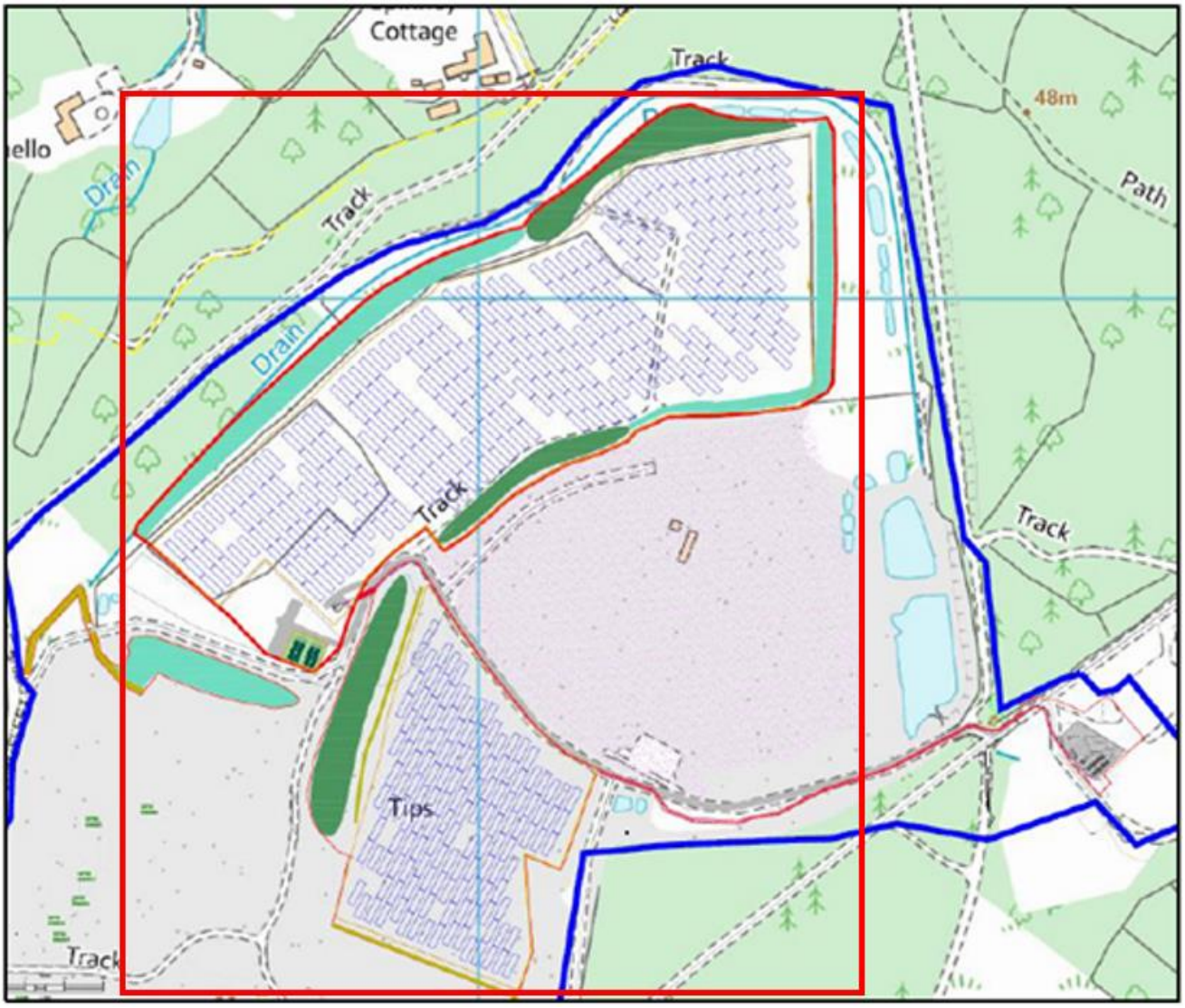
## *1.3 Site Description*

### 1.3.1 Location

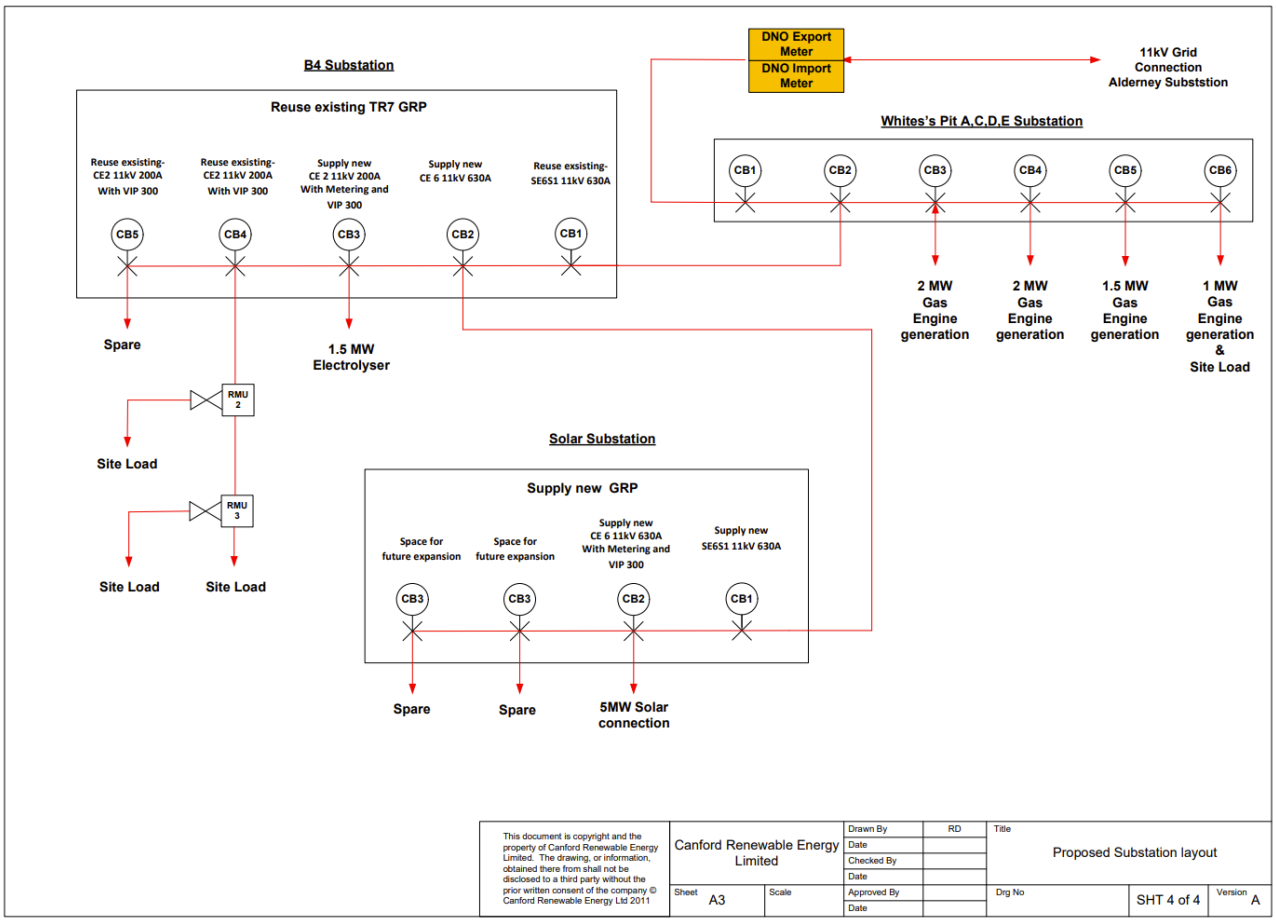
*Address:*

Canford Renewable Energy
Energy Site Control Centre
Arena Way
Wimborne
Dorset
England
BH21 3AL

Coordinates: 50.770421 , -1.9592357




*Indicative Eagle eye view of the solar farm – Grey lined cells are prospective solar panels locations and bold red outline is the proposed location of the whole solar farm site.*




*Indicative Single Line Diagram of the CRE site, with proposed solar array, also found in Appendix 2Site Layout and Plan*

### *1.3.2.1 General Assembly Drawing*

See Appendix 1 for the pre-construction general assembly drawing.

### *1.3.2.2 Site Access*

The Principal Contractor shall establish all necessary access to construct and maintain the Photovoltaic System, including permanent access to customer substations of the Photovoltaic System. Reinstatement of access roads will be undertaken as required by the Principal Contractor to a state not worse than prior to works commencement and in accordance with the lease and the planning consent.

### *1.3.2.3 Nominal Power, Layout and Configuration*

#### 1.3.2.3.1 Nominal power of Photovoltaic System

| | |
|---|---|
| Total DC output: | The Principal Contractor shall propose the total DC installed capacity based on their optimized design considering DC to AC ratio. Proposedarea for future Battery Energy Storage System shall be excluded. |

| | |
|---|---|
| PV Module: | Bankable module power class of crystalline technology as per the preference of the Principal Contractor for the review and acceptanceof the Employer |
| Inverter: | Bankable central or string inverter as per the preference of the Principal Contractor for the review and acceptance of the Employer |
| Mounting Structure: | Bankable manufacturer of mounting structure as per the preferenceof the Principal Contractor for the review and acceptance of the Employer |

#### 1.3.2.3.2 Layout of Tables

Modules will be installed at $20^{o}/25^{o}$ inclination in portrait/landscape, facing due south in rows of suitable number of modules per string. Layout shall comply with the planning requirements but the height of the proposed mounting structure shall be kept in the range of 2.45m to 2.75m.

#### *1.3.2.4 Topographical Map*

See Appendix 2 for the topographical survey of the site.

### 1.3.3 Foundation Design

#### *1.3.3.1 Electrical Foundations*

An appropriate housing base will be constructed for all foundations following the engineering recommendations in regard to the structural integrity of the system and also to comply with any planning requirements. Please refer to the relevant appendices for planning approval drawings.

The base will allow for any ducting and inlets for AC and DC cables. The base will comply with DNO and manufacturer request. Local drainage sink of gravel will be installed as required.

#### *1.3.3.2 Mounting Structure Foundations*

Mounting structure foundations to been designed with respect to local conditions (Ground, Environmental) and ease of removal after power-plant lifespan. Foundation designs need to take into account that this is a former landfill site. Under no circumstances can the proposed foundation system penetrate or cause damage to the landfill cap. The depth of foundations to be calculated by structural engineer to sustain all relevant loading such as wind loading (pressure, suction), snow loading and the actual death load of the structure. All systems should comply with Eurocode 7 Standards. It is the Principal Contractors responsibility to provide specification details of final mounting structure design/type. For tender purposes contactors can follow details provided in the Pull Out Testing Report and Vertical Peak Load Testing Report. Provided as appendices, located in Appendix 4.

Insulation will be installed between all modules and the mounting structure during installation to prevent galvanic corrosion.

Depth of foundation to be confirmed by the geotechnical surveyor following site survey and a separate pull-out test.

### 1.3.2 Site Investigation Reports

Geotechnical survey including the pH level of the soil and other chemical substances and resistivity surveys to be undertaken by the Principal Contractor prior to the details design of the project. It is the Principal Contractors responsibility. To make available ground investigation reports undertaken to assist the final detailed design. For tendering purposes contactors should follow details provided in GCC Factual Site Investigation Report March 2021 / GCC Ground Investigation Report April 2021 / GCC Trial Pit Log March 2021 / GCC Investigation Location Plan. Provided as appendices, located in Appendix 4

All hydrological considerations to be fulfilled by the Principal Contractor. All forms of foundations will include an appropriate drainage around or below the structure, the inverters/transformers/substation housings to manage the risk of standing water.

## *1.4 Technology*

### 1.4.1 Modules

The minimum technical characteristics for each PV module are:

a) Construction material: MONO PERC solar cells with a module peak power output ≥ 500 Wp at Standard Test Conditions (STC) but limited to the power class of max 600Wp.

b) Module efficiency shall not be less than 20.7% at STC and corresponding cell efficiency shall not be less than 21.5% at STC. Module efficiency is defined as the ratio of the moduleoutput power to the intensity of incident solar radiation perpendicular to the surface of the PV module including the frame.

c) Module efficiency at an irradiation of 400 W/m$^2$ or higher will be 100% of the specified conversion efficiency at an operating temperature of 25 degrees Celsius (°C)

d) Modules are to be provided with a factory linear warranty of Peak Power output at Standard Test Conditions (STC),

e) All modules shall exhibit a positive power tolerance of -0/+5W.

f) Upon delivery of the modules to site, the Principal Contractor shall submit the respective performance data for each PV module at STC (flash reports) in electronic format (excel files). The Principal Contractor shall provide a summary spreadsheet containing the totals of all the spreadsheets and the full plant capacity;

g) The modules shall be covered with high transparency safety glass which may be treatedby the manufacturer to reduce solar reflection;

h) The rear junction box (connection box) of the modules shall include by-pass diodes to protect against partial shading and module overheating as well as flying leads fitted with IP67 rated pin type Multi-Contact (MC) connectors;

i) Factory fitted module cables shall be long enough to allow the modules to be interconnected electrically in series to form strings.

j) The PV modules shall be capable of operating under extreme temperature (-5°C to +50°C)and humidity (15% to 95%) conditions and will be designed to ensure the highest possible reliability in operation and to ensure minimum and efficient required maintenance over the lifetime of the system.

k) Each module shall permanently and prominently display a technical characteristics plateas required by IEC 61215 and IEC61730 carrying the following information as a minimum:

k.1 Type of PV module (model part code) and name of the manufacturing company

k.2 Maximum module power output ($P_{MPP}$) at STC

Production serial number specifications for PV modules shall also be provided at Nominal Operating Cell Temperature (NOCT) indicating percentage power loss as a function of temperature.The percentage power loss shall not exceed 0.5% per degrees Celsius (°C) away from STC.

### 1.4.2 Inverters

Inverters shall provide with a minimum 5 years warranty. The Principal Contractor can propose central inverter or string inverter for this project for a review and acceptance by the Employer.

Outdoor inverters shall be protected to be weatherproof to IP65 level as a minimum. The inverter shall meet at least the following requirements and international standards:

l) CE Marked;

m) Electrical safety IEC 60950-1;

n) G99

All inverters installed in the solar park must be produced by a single manufacturer and single product where possible.

The maximum noise contribution from the inverters should be within of 32 dB(A) from the nearest residential receptor, or lower if required under LPA planning permission conditions.

The inverter buildings final locations, materials and outward appearance should comply with the planning approval. Satisfactory air flows should be maintained at all times to prevent any inverter de-rating in high ambient temperatures.

In all cases and at all times of operation the output of the sum of the inverter stations minus the losses due to the transformer stations shall be limited to the DNO Total Installed Capacity (TIC) at the HV level in order to comply with any DNO connection requirements.

Inverters have at least the following characteristics:

- Conformity with the Grid Connection Application documents;
- Euro and maximum efficiency ≥ 97%;
- High reliability (expected availability ≥99%);
- Conformity with module operational range and maximum system voltage

### 1.4.3 Mounting Structure

The Principal Contractor shall comply with the applicable technical specifications set out in this section for each different type of support base, as appropriate for the type of PV modules and type ofinstallation area.

The sizing of the supporting bases of the photovoltaic modules shall be made after carrying out static studies that are in accordance with Applicable Law standards and regulations including butnot limited to:

- BS EN 1991-1-4:2005 Eurocode 1. Actions on structures. General actions. Wind actions
- BS EN 1991-1-6:2005 Eurocode 1. Actions on structures. General actions. Actions during execution
- BS EN 1993-1-1:2005 Eurocode 3 Design of steel structures. General rules and rules for buildings
- BS EN 1993-1-3:2006 Eurocode 3. Design of steel structures. General rules. Supplementary rules for cold-formed members and sheeting
- BS EN 1993-1-5:2006 Eurocode 3. Design of steel structures. Plated structural elements
- BS EN 1993-1-8:2005 Eurocode 3. Design of steel
- BS EN 1993-1-9:2005 Eurocode 3. Design of steel structures. Fatigue
- BS EN 1993-1-10:2005 Eurocode 3. Design of steel structures. Material toughness and through-thickness properties
- BS EN 1993-5:2007 Eurocode 3. Design of steel structures. Piling
- BS EN 1997-1:2004 Geotechnical design. General rules
- BS EN 1997-2:2007 Eurocode 7. Geotechnical design. Ground investigation and testing

Ground-based installations will be designed and constructed such that the lowest leading edge of the solar modules will be a minimum of 800 mm above the ground. In case a bifacial solar module is selected then a structure needed to be designed to increase the bifacial gain of the module.

The structural design of mounting structure to support PV modules installation shall take into account the selection of permanent loads, loads of snow and wind, seismic design construction, the structural dimensioning and the control of the foundation, the sizing of members, the control of connections, and the effect of temperature changes in accordance with Applicable Law, Standards and regulations.

The metallic supporting bases for PV Modules shall be of steel components hot dip galvanized, with a minimum thickness of 70µm for material with > 3,0 bis ≤ 6,0 mm as ISO/EN 1461, ISO/EN 12944, ISO/EN 14713: or equivalent or by an appropriate anodized aluminium of heavy-duty type and alloy according to the standard EN 842, 756, 768, 12 373 or equivalent for the better anti-corrosion protection of the construction. It may be used in combination with these materials for the construction of supporting bases. All connections including bolts, nuts, shall be of stainless steel or compliant with other industry standard practices appropriate for the application defined.

The Principal Contractor shall install mounting structures and framework according to the manufacturer guidelines and recommendations in order to get the 20 years extended warranty terms.

### 1.4.4 Cables

The cable design and wiring for the electrical infrastructure and connection infrastructure will be in accordance with appropriate standards, amongst others BS 7671, IEC 60228, 60364-1, 60332-1-2, 60754-1 and -2, 61034, IEC 60502-2 or equivalent, TÜV approval for the European market, and any other typical, relevant, and country specific electrical code requirement.

Cables used in the DC distribution network shall:

- be resistant to ultraviolet (UV) radiation as well as to ozone;
- have an enhanced resistance to heat and fire and with low smoke emissions;
- operate in an extensive temperature range; and
- have enhanced resistance to friction;

The cable connectors will fulfil at least the requirements of the international protection rating IP67as defined in IEC 60529 and fulfil the safety requirements and tests of the IEC 60904-3.

#### *1.4.4.1 Cable Runs and Trenches*

The technical requirements for cable runways/trenches in the United Kingdom include the specifications set out at this section. Should any cables be buried they must conform to the followingrequirements, which are provided for indicative use and should not be considered as an exhaustive list:

Minimum required technical specifications

- ENA TS 12-23 Energy Networks Association standard for polythene protection tape for buried electricity supply cable;
- ENA TS 12-24 Energy Networks Association standard for plastic ducts for buried cables;
- ENA TS 97-1 Special backfill materials for cable installations;
- EATS 98-1 Surface preparation and coating systems for new plant and equipment; and
- BS7671 Requirements for the electrical installations

- Cables will need to be buried at an appropriate depth (450mm from the top of the duct) surrounded by correct strata (e.g. sand).
- DC buried cables will have a minimum cross sectional area of 4mm².
- All ducts exposed to the air to be filled with foam to protect cables from rodents.

#### *1.4.4.2 Cable Jointing and Termination*

The technical requirements for cable jointing and termination in the United Kingdom include the specifications set out in this Section. The following requirements are provided for indicative use andshould not be considered as an exhaustive list:

Minimum required technical specifications:

- BS 6910 Cold pour resin compound and heat shrink cable joints in the range up to 1000Vacand 1500Vdc;
- BS 4579 Performance of mechanical and compression joints in electrical cable and wire connectors;
- ENA ER C79 Type approval tests for connections and terminations for aluminium conductors and insulated power cables;
- ENA ER C81 Type approval tests for joints 600/1000V;

### 1.4.5 Ground Works

All appropriate ground works shall be provided by the Principal Contractor.

### 1.4.6 Site Tracks

Site tracks suitable for the delivery of the installation will be constructed (i.e. 100mm crushed stone to a depth of 300mm and a min width of 3m). Following completion, thesite tracks will be suitable for O&M purposes for light vehicles providing required maintenance.

### 1.4.7 Security System

#### *1.4.7.1 Fencing*

The site will be surrounded by a 2.5m tall deer fencing to prevent against unauthorised access by persons and by wildlife and will be equipped with two secured access points suitable for vehicular access - one entrance gate on either side of the communal access road running North-South throughthe middle of the site.

- Weather resistant high grade combination padlock used to secure compound gate.

- Weather resistant combination padlock or combination key safe with keys to be used to access all HV areas.
- Combination keys safe to hold all other keys for the site.
- All external padlocks to be weather resistant and keyed alike.
- Appropriate safety signage will be mounted on external fence line conforming to The Healthand Safety (Safety Signs and Signals) Regulations 1996 L64.

The Principal Contractor shall plan, construct, operate, and maintain within the area of the solar photovoltaic plant an appropriate and redundant security system against intrusion, theft, damage,and other severe activities which may prevent the solar photovoltaic plant from normal operationand electricity generation.

The security system shall consist at least of the following main components:

a) Fencing, gate and planting of screening vegetation, if required in planning conditions and associated maintenance during the term of the period of the Contract and the O&M Contract;

b) Fence border arrangements, there will be a minimum of 4 meters clearance between theinner edge of the security fence and any permanent fixtures of the plant;

c) Ground-based installations will be designed and constructed to include appropriate fencing conforming to insurance requirements Site preparation: site clearance and earthworks;

#### *1.4.7.2 CCTV Specs and Drawing*

A suitable CCTV and intruder detection system covering the entire perimeter of the Site will be installed. A proposed design has been included within the appendix. The security system will require a broadband connection.

#### *1.4.7.3 Security Arrangements*

During construction, the construction site will be secured by a security contractor at 24/7 regime. The team is obliged to check the secured perimeter within specified intervals during the day and the night to ensure that all construction material is protected.

- Alarms to be deactivated and reactivated by external keypad by the main access to the compound or by calling the remote alarm monitoring station.
- Alarm sensor system must be able to operate effectively with livestock within the compound area. Alarm system should be able to secure the site without false alarms from livestock within the compound area.
- Security and CCTV systems are able to operate effectively though broadband connection.

- Intelligent Video Management System (IVMS)
- Protection of Inverter and Transmission Station
- Alarm Release
- Inspection and Maintenance
- Uninterruptible Power Supply (UPS)
- Cabling connecting the cameras, microwave sensors, other sensors (i.e. trembler) will be mounted best practice to the fence, or when buried shall be in ducting / conduits in trenchesof a suitable depth (450mm from the top of the duct) and strata (sand / gravel etc.)
- The provision and integration of security systems such as alarm, wires and / or infrared or microwave motion sensors suitably linked to off-site alarm security systems as required by insurance at the time of construction (Employer will approve methodology and supplier prior to sourcing);
- The design and construction or preparation of all access required to maintain the project in accordance with the lease and planning consent

### 1.4.8 Cabins

#### *1.4.8.1 Construction Welfare Facilities*

A suitable construction compound together with welfare facilities as recommended under the CDM Regulations 2015 and an office will be created as part of the Solar Park. This will be removed on successful commissioning of the solar park.

#### *1.4.8.2 Customer Substation*

The customer substation (intake substation) and associated outdoor compound (to accommodate a step-up transformer) will be supplied by the Principal Contractor. The scope of the Principal Contractor will be limited up to the supply, installation and termination of the 11kV terminals of the transformer. Customer substation shall be equipped with an appropriate number ofincoming and outgoing switchgear feeders including all required protection equipment for safe operation of the system and comply with all required local regulations.

There is a provision for future expansion of a Battery Energy Storage System (BESS), as marked inthe General Assembly design. The size of the customer substation must be designed with availablespace for additional switchgear feeders for future BESS expansion.

#### 1.4.8.3 Customer Meter

A generation meter will be installed within the customer substation but with separate access. Themeter installation is part of the EPC contract.

#### 1.4.8.4 LV Switchgear Feeder/Cabins

Design supply and installation of all necessary LV switchgear feeders are within the scope of the Principal Contractor.

#### 1.4.8.5 Weather Station

A weather station will be installed at the solar park. A universal datalogger shall be integrated in the overall plant monitoring system using ethernet and be fully accessible via the internet.

Additionally, inclined irradiation and module temperature should be recorded using the following equipment:

- Inclined irradiation: 2 x digital Pyranometers SMP11 Kipp & Zonen ±2% accuracy
- Type PT100 or equivalent shielded thermocouple to measure ambient temperature

All pyranometers are to conform to international standards ISO 9060 and IEC 61724. Each sensor isto be accompanied by its individual calibration certificate supplied by the manufacturer.

Pyranometers will be attached to the installation in accordance with manufacturers' installation and mounting instructions in the plane of the modules.

All cables must be ducted.

Pyranometers must be calibrated in accordance with the manufacturers' recommendations, the maintenance obligations of which will be included in the O&M contract including re-calibration asper the manufacturers' requirements.

Each pyranometer will be situated in an un-shaded position at all times of the year on the site, facingdue south and in the plane of the modules and at a minimum distance among them in order to provide a better measurement of irradiation across the entire site. Position of each pyranometer to be approved by the Employer.

The weather station shall be incorporated into the monitoring system and shall include module temperature monitoring.

### 1.4.9 Earthing

Earthing must be installed as follows on the site:

There will be a single earthing grid for the whole plant. This earthing grid will act as earthing grid for both the LV and the MV equipment within the scope of work. Electrical earthing will comply toBS7430 and ENA TS 41-24 or equivalent at the time of construction in addition to being compliantwith local DNO utility requirements based on BS7430 and ENA TS 41-24.

#### 1.4.10 Testing, commissioning and accreditation

The Principal Contractor is responsible for testing and commissioning of all equipment (DC, LV AC,HV AC) following the relevant national and international standards.
The Principal Contractor should ensure the installation achieves accreditation via the industry standard Preliminary, Intermediate and Final accreditation certificates.

### *1.5 Minimum requirements for monitoring systems*

#### 1.5.1 General characteristics of the monitoring systems

The monitoring system is offered as Software as a Service (SaaS): the software and associated data are centrally hosted on server. It is accessed by users using a client via a web browser. All historical data shall be available during the operational lifetime of the Photovoltaic System.

General requirements:

- A robust local area network to be installed at each site. Data loggers, sensors, monitoring equipment, security and CCTV all to be connected into the local network.
- Software used to work with data provided by the inverter manufacturer, and/or the string box manufacturer.
- Weather station will use a Data Acquisition System (DAS).
- The customer recognized asset management monitoring system will require access to the monitoring system data via database scraping and/or the addition of datalogging equipment. Principal Contractor is to confirm compliance with this requirement through communication with the Employer's representative.

The Data Acquisition System shall include the following:

- Inverter monitoring system

The Inverter monitoring system shall gather DC and AC current, voltage, power, energy data from the inverter and meteorological data from irradiation and temperature sensors mounted at the weather station. This data shall be recorded and made readily available to the Employer on a secure web database.

Monitoring system must supply data on a maximum thirty-minute interval basis:

- Supply weather data to include ambient temperature, module temperature and irradiance;
- System performance relative to utility feed-in meter data;
- Provide additional evaluation of subsystem efficiency and performance (including real-time performance ratio and PV grid output).
- Provide fault alerts/alarms in the event of component malfunction
- Allow for all relevant system parameters to be read remotely

Data from the monitoring systems shall be capable of being communicated via DSL (Digital Subscriber Line) - or another suitable and equivalent - telecom line provided by the local telecom provider. Where a phone line is not in existence, an alternative method of effective and reliable data transmission should be employed. In addition to the data monitoring, systems will also be used for on-site communications. The proposed Telecom service is to be communicated and confirmed with the Employer's representative. The EPC is comprehensive of all costs necessary to install suitable communication infrastructure. The Principal Contractor will provide as a backup solution redundant data transmission systems (i.e. GPRS) in order to keep access to the monitoring systems in case of failure of the main communication system.

### 1.5.2 Required Data

#### *1.5.2.1 Photovoltaic system set-up data*

The provider will supply per Photovoltaic System the required plant set-up data.

#### *1.5.2.2 Dynamic data*

Real time power for the following components:

- Photovoltaic System
- Inverter
- String (meaning each Input of the inverter)
- Main and check fiscal meters LV, both import and export.
- Fiscal meter HV, both import and export.

Real time voltage and current for the following components:

- Inverter, DC and AC values
- String (meaning each Input of the inverter)

The following values also need to be calculated according to the EPC Contract and/or the O&M Contract:

- Availability

- PR

Values for the following sensors:

- Irradiation, both inclined plane and horizontal plane
- Module temperature
- Ambient temperature

Energy production values of the following components:

- Photovoltaic System
- Inverter
- String
- Main and check fiscal meters LV, both import and export.
- Fiscal meter HV, both import and export.
- G99 Monitoring
- The DNO power control signal will also be supplied in order to comply with the Active Network Management (ANM) system

Alerts generated by the following:

- Inverters
- Dataloggers

### 1.5.3 Datalogger requirements

- The onsite datalogger collects data and sends the data via broadband or wireless network infrastructure to a secured server.
- The following hardware can be read:
    - Inverters
        - String monitoring devices
        - Energy meters
        - Weather sensors

- Following cabling standards shall be adhered to for cabling between the datalogger and the above listed hardware: IEC 1004 - 2/ 3 / 4 / 5 and EN50082.
- The datalogger will make an average of the sampled data over the log interval. The log interval will be adjustable on the datalogger.
- The upload frequency (number of times the datalogger sends data to the server) will be adjustable on the datalogger in a range from once per hour to four times per hour
- The data logger and all its ancillaries should be of industrial quality with a 5 year warranty.
- The logger should come with an industrial power supply and shall be connected to a UPS with minimum 4 hours capacity.
- The datalogger can communicate with the server through Wireless (GPRS or 3G) or Ethernet
- In case of Ethernet communication, the datalogger will be connected to the internet via a firewall.
- In case of wireless communication, an industrial modem shall be used. The modem shall have following characteristics:
    - The modem shall have an integrated firewall
    - The modem shall be VPN capable

### 1.5.4 Data transfer requirements

The monitoring system will provide the option (at no extra cost) of forwarding the data from the provider's server to a third party server on real time basis. The provider's data-protocol will be shared with the third party. Future changes to the protocol will be kept to a minimum. If any changes to the data-protocol are necessary, the provider will advise the Employer at least two weeks ahead of time in writing and will provide the necessary details to allow the Employer to prepare for the change.

The upload frequency (number of times the server sends data to the third-party server) will be adjustable in a range from once per hour to four times per hour.

Communication should be verified and demonstrated during the testing period and additional amplifiers/aerials installed as necessary.

### 1.5.5 Data storage requirements

- All data will be stored on a secured server.
- The server will meet the following requirements if possible:
    - 24/7 security guard(s)
    - Automatic fire suppression
    - Environmental Monitoring
    - Video surveillance
    - Alarm system

## *1.6 Grid Connection*

The 11 kV Grid Connection for the existing Landfill Gas Generation Site is designed to support a 6.8MVA Export Capacity and a 375 kVA Import Capacity. A full copy of the Existing Grid Connection Agreement is attached as an Appendix to this Specification.

The Landfill Site whilst equipped with 7 off Landfill Gas Engines has only enough Landfill Gas to support the Generation of 1.8 MVA from the Landfill site

The existing Landfill Site Electrical System will require significant modification to make it suitable for the connection of the proposed Solar Farm. It is the Clients intention to enter into a separate High Voltage Electrical System Modification Contract with a Specialist Contractor to complete these Modification Works. Attached as an Appendix to this Specification is an Electrical Single Line Diagram showing the Landfill Sites High Voltage Electrical System post the High Voltage Modifications being completed.

As part of the separate High Voltage System Modification Works Contract the Client intends to install a High Voltage Connection from the B4 Substation to the new Solar Substation. The new Solar Substation and HV Switchboard within the Substation will also be provided as part of the High Voltage System Modification Contract

The new Solar Substation will comprise a GRP Enclosure containing a Schneider Ringmaster Unit. The Point of Connection to the Solar Farm will be a Schneider Ringmaster CE6 630A circuit breaker with

VIP 300 protection and metering. It is the responsibility of the Principal Contract to identify any extra Equipment to be installed within the Solar Substation and to ensure that the GRP Enclosure provided by the Client is suitably sized to contain all the Principal Contractors provided extra Equipment

The Principal Contractor shall be responsible for the Solar Farm Electrical System from the Solar Farm to the Point of Connection within the new Solar Substation

### 1.6.1 Grid connection electrical design submission

The Principal Contractor shall assist the Client as necessary in providing all the Solar Farm Electrical System Design Documentation required by the District Network Operator to support the conversion of the existing Grid Connection Agreement to a combined Landfill Gas and Solar Farm Agreement

### 1.6.2 Grid connection system design submission

The Principal Contract shall provide as a minimum the Electrical System Study information to show the G99 Compliance of the Solar Farm. As a minimum for a Type B Project this shall comprise

- Earthing System Design
- Load Flow Study
- Voltage Regulation Study
- Reactive Power Study
- Power Losses Study
- Fault Level Study
- Protection Coordination and Settings Study
- Voltage Disturbance Study P28
- G5/5 Stage 3 Harmonic Study
- Fault Ride Through Study
- Fast Fault Injection Study
- Over Frequency Study LFSM-O

### 1.6.3 G99 Compliant Protection Scheme

The Principal Contractor shall be responsible for the Design, Supply, Installation, Commissioning and DNO Testing of a fully Compliant G99 Protection Scheme

### 1.6.4 Grid Connection Alterations

The Principal Contractor is responsible for modifications to the existing 1997 grid connection agreement (See appendix 3) to allow the new solar installation to be connected.

### 1.6.5 Export Limiting Scheme (ENA ER G100)

The Principal Contractor shall be responsible for the Design, Supply, Installation, Commissioning and DNO Testing of a fully Compliant Export Limiting Scheme. The Scheme shall be deigned to ensure that the combined Export from the Solar Farm and the Landfill Generation never exceeds the Grid

Connection Export Capacity Limit of 6.8MVA. For the avoidance of doubt the Landfill Gas Generation will be the primary source of Export, The Solar Farm will therefore be the facility adjusted to ensure that 6.8MVA is not exceeded

## *1.7 Telecommunications*

### 1.7.1 Broadband / Satellite Connection

A suitable satellite or broadband connection will be installed the Principal Contractor and the installation fee shall be part of the EPC contract. The Principal Contractor will provide a backup solution redundant data transmission system (i.e. GPRS) in order to keep access to the monitoring systems in case of failure of the broadband connection.

## *1.8 Planning Permission*

### 1.8.1 Planning Application

See Appendix 4 for planning permission and other planning approved drawings

## *1.9 Risk and Safety*

Upon receiving an order, the Principal Contractor will:

- Prepare a full and thorough Risk Analysis outlining any appropriate mitigation steps to be undertaken for the activities to be undertaken.
- Confirmation of both the tender Health and Safety Plan and compliance with Health and Safety Regulations together with any information required to verify such compliance.
- The Principal Contractor will comply with and fulfil all necessary CDM regulations.
- A method statement for the construction, installation and commissioning of the works or any element thereon.
- Details of the Principal Contractor's use of the materials listed thereunder on which the tender is based together with evidence confirming conformance to the Specification.
- Involve CRE for final design/interface approval.
- Prepare a control and layer of protection analysis (control philosophy document) for the whole system.
- The Principal Contractor will provide CRE with an Operation & Maintenance manual upon completion of the installation.
- The Principal Contractor will provide CRE with a health and safety file upon completion of the installation.
- The Principal Contractor will provide CRE with a risk register for the entire installation upon completion of the installation.
- CRE reserve the right to safety audit, as well as quality assurance audit following during the construction phase of the project and after completion of the installation.

### *1.10 Facilities*

The following facilities are available onsite for the Principal Contractor to make use of during the installation phase of the project:

- CRE will provide the principal Contractor with a lay-down area
- All other facilities required to be provided by the Principal Contractor

### *1.11 Form of Contract*

The Principal Contractor of the solar farm shall ensure that the system shall comply with:

- the requirements of this specification
- necessary design codes for the UK
- any other requirements as listed and referred to in this document

Each of these documents shall be the latest revision in effect on the date that an order is placed.

## 2. CONFIDENTIALITY

Tender Documents must be treated as private and confidential. No parts of the Tender Document should not be shared/released by Tenderers unless on a confidential basis to potential subcontractors for project works (or for tendering sub-contractors, for the purposes of consultation whilst preparing the tender).

## 3. LANGUAGE AND CURRENCY

### *3.1 Language*

All submission, documents and correspondence submitted in relation to this Tender, as well as the Contract, should be in English.

### *3.2 Currency*

The rates and extensions for all financial information within the Schedules, and any other section of the Tender, should be in Sterling (£) and completed to two decimal places.

## 4. COMMUNICATION

### *4.1 Contact*

Any communications associated with this tender should be communicated directly to the Engineer (as defined by the Contract) in writing – by electronic submission – at the following details:

| | |
|---|---|
| Person: | Josh Williamson |
| Company: | HyEnergy Consultancy ltd. |
| Address: | Squirrels Wood, 39 St. Johns Street, Crowthorne, Berkshire, England, RG45 7NQ |
| Email: | Josh.Williamson@hy-energy.co.uk |

Telephone: +44 (0)7944 240014

Except insofar as may be directed in writing by CRE, no agent or servant in their employ has any authority to make any representation or explanation to Tenderers as to the meaning of these Instructions, the Conditions of Contract, the Employer's Requirements, the Schedules or to any other matter so as to bind CRE.

Tenderers shall not communicate with any servant, employee or agent of CRE, except as to the extent and in the manner provided within these instructions.

Any queries or questions regarding the documentation, or anything regarding the Tendering process, should be submitted to the Engineer as soon as possible. Tenderers calling for sub-tenders should inform those individuals that correspondence should be directed to the Tenderer, not employer.

Communications (enquiries, queries, clarifications etc.) in connection with the Tender shall not be formalised or accepted until such time as they have been submitted in writing via electronic submission.

### *4.2 Notice from CRE*

Up to 5 working days prior to the latest date for receipt of tenders as set out herein (or otherwise instructed in accordance with these Instructions), the Engineer acting on behalf of CRE may issue a Notice by email to all persons or firms who have registered an Intent to Bid and received the Tender documents, deleting, varying or extending any item in or adding any items to these documents. Any such Notice shall then form part of the Tender documents and shall be treated as such by the Tenderer.

Only the Engineer may issue a response to tenderers on any issue or query; all responses to queries by Tenderers contained in notices issued by the Engineer, should contain the terms of the query, together with the response – but will make no reference to the identity of the tenderer. All responses and notices shall be made available to all Tenderers to view here.

No extension to the Tender Period will be considered on the grounds that insufficient time is available for Tenderers to take the Notice into consideration in their tenders, and Tenderers will be responsible for notifying the Engineer of their queries in sufficient time and identifying where an early response is required.

### *4.3 Returning Documents*

Any drawings and other documents issued as part of the tender process and not returned or required to be returned with the Tender shall be sent to the Engineer as identified in Section 4.1 above.

## 5. AMBIGUITY, DISCREPANCY, ERROR, OMISSIONS

Should the Tenderer become aware of any ambiguity, discrepancy, error or omission in or between the Tender Documents, he shall immediately notify the Engineer. The Engineer, upon receipt of such notification, shall notify all Tenderers of his ruling in respect of any such ambiguity, discrepancy, error or omission. Such notification by a Tenderer and a subsequent ruling by the Engineer shall be issued in accordance with Section 4 of this document and shall form part of the Contract Documents.

Tenderers shall check the number of pages of the documentation. Should any part be found to be missing or unclear, the Tenderer should notify the Engineer at once for clarification and should confirm in writing to the Engineer their query and the response given within seven days of the notification.

Should there be any doubt or obscurity as to the meaning of any of the Tender Documents, or risk, liability or obligation to be undertaken by the Contractor, Tenderers should request clarification in writing from the Engineer in accordance with Section 4 of these Instructions.

No liability whatsoever (including in time for completion or cost) will be accepted by CRE or the Engineer for any errors in the Tender or variances of the Tender from the requirements of the Contract due to any ambiguity, discrepancy, error or omission which it is reasonable to expect should have been identified by the Tenderer during the tender period.

## 6. TENDER RETURN

### *6.1 Contact*

The Tender shall be made on the Letter of Tender and shall be submitted via e-mail, with flagged status if possible, to the address below:

**F.A.O. Mr. Joshua Williamson,**

**Email:** Josh.Williamson@hy-energy.co.uk

The Engineer shall acknowledge the receipt of tenders via e-mail response to the address that the tender has been submitted from, unless otherwise stated.

Any tender or amendment to any tender delivered into the inbox of the Engineer after the deadline for submissions will not be considered. The Engineer's decision on whether a tender has arrived in time is final.

### *6.2 Format of Submission*

The tender shall be made on the Letter of Tender incorporated in Annex 1 and the Schedules should be fully priced, monied out and totalled and signed by the Tenderer. All areas should be filled in with all items priced, or provided with a reference to other items under which the cost is included. The blanks in any schedule/appendix shall be completed.

### *6.3 Checklist of Documents*

A checklist of documents, all of which are to be completed legibly on the documents supplied and returned with the Letter of Tender, is given below:

- Letter of Tender
- Priced Schedule of Items
- Project Specific Programme
- HSE Plan

Tenders may not be considered if the complete information specified is not given by the date for return of tenders.

*6.4 Deadline for Submissions*

Tenderers shall complete and return the intent to bid as soon as possible but at least by 12/05/21

Questions and Queries should be submitted at the latest by 21/05/21. Responses to individual queries will be made directly and all will be published within 5 days on the designated portals.

Tenders shall be returned by 4:00PM on 26/05/2021, however, it is the preference of the employer that the tender be returned in ample time, by 12/05/2021 where possible.

The Tenderer is advised that if they have submitted tender and that it is received in accordance with the requirements given above they have the right to modify, make corrections to, or withdraw it provided that any such modifications, corrections, or withdrawal is received, via e-mail, accordance with the aforementioned requirements for the submission of tenders prior to the time specified for the submission of tenders. In this event, the original tender as thus modified or corrected will be considered as the tender. After the time specified for submission, no tender can be withdrawn or modified except after negotiations initiated by CRE.

The Letter of Tender and supporting documentation may be issued in advance by email in accordance with the provisions of these Instructions. Any Tenderer which does not comply with the above requirements shall be excluded from further consideration.

*6.5 Extension of Deadline*

The deadline for tenderers' submissions is considered to be fixed and will only be extended in exceptional circumstances. Should an extension be required, the tenderer should contact the Engineer, by e-mail, detailing the reasons for such an extension and the desired length of extension.

Upon receipt of an application that the Engineer agrees to be valid, he shall then notify all Tenderers of the revised Deadline for Submission, in accordance with the instructions within Section 4 (if the application is deemed to be justified).

No extension applications will be considered if within 5 working days of the current deadline for submission. Moreover, both the Engineer and CRE reserve the right to refuse such applications, regardless of the circumstances cited by the Tenderer.

*6.6 Tender Validity*

Tenders shall remain open for acceptance for a minimum of 180 days from the Deadline for Submission as set out in Section 6.4 above.

## 7. REQUIREMENTS FOR A COMPLIANT TENDER

The Tender shall be submitted strictly in accordance with the Contract Agreement and its associated Annexes, as well as the Instructions to Tenderers.

All tender applications must include the following information:

- Details of your relevant experience and explain how you will apply it.
- Examples of similar projects you have worked on. This should include contact details for referees and agreement that we can make contact with the referees.

- A short (approx. 300 words) explanation of your suitability to deliver the project.
- Cost per package (if appropriate) and an overall price for the package(s) detailed in the attached specification.
- Confirmation of any exclusions from the overall price.
- A payment schedule, to include a minimum of a 1.5% retention until the 12-month anniversary of Practical Completion.
- Confirmation that you can achieve the proposed timescales, which assume: mobilisation in October 2021; installation of solar substructure in November 2021; solar panel and inverter installation by end of January 2022; electrolyser installation by end of January 2022; with the entire project to be commissioned by no later than March 2022; and the project to be fully operational by 1st April 2022 or before.
- In addition, you are invited to provide optional offers of £1.0m of construction-period finance, which would be refinanced in full within 90 days of Practical Completion. Please confirm in your tender response whether you are able to provide such financing and the proposed terms that would apply. The offer of construction-period finance will not form part of the formal evaluation.

The Tender shall not be qualified in any way by statements or general reservations which could be construed as rendering the tender equivocal or placing it on a different footing from other tenders, no matter the expression. Any such qualification, no matter how otherwise favourable, will lead to rejection. Tenderers must ensure that descriptive or explanative text which they may deem part of their tender, does not constitute qualify them for rejection.

The Tender should be placed on the official Letter of Tender, which shall be signed by the Tenderer with the Tender Total inserted therein. No unauthorised alterations should be made to this document, nor the Schedules when submitting. Attention should also be drawn to the need to provide both original and electronic copies of the completed Letter of Tender and Schedules when submitting.

Tenders should only be signed by the Tenderer, or in the case of a Limited Company, the secretary or individual authorised to sign tenders on behalf of the Company, whilst also providing the legal name of the Company and full business address.

Any tender not complying with the above requirements shall be excluded from further consideration.

CRE reserves the right to reject any tender without giving reason.

The offer of a bribe, or any other inducement to any person with a view to influencing the rewarding of the contract will result in an instant rejection of the Tender.

All rejected or unsuccessful Tenders will be confidentially destroyed by the Employer.

## 8. ALTERNATIVE TENDERS

Where a Tenderer wishes to submit alternative proposals to those specified in the tender documents, this should be done by way of an alternative tender.

No alternative tender will be considered unless a tender fully compliant with these Instructions to Tenderers, without qualification, is also submitted. Any alternative tender must also be free of qualifications and must show clearly where costs would differ from the compliant tender. An alternative tender that does not meet these requirements may be summarily rejected by the Employer, whose decision in the matter shall be final.

In assessing an alternative tender, the Engineer and Employer reserve the right to insist on design criteria and requirements that suit their general requirements in terms of maintenance, materials, methods of construction, etc. and to reject any alternative tender considered inappropriate.

The alternative shall clearly show all deviations from the Employer's Requirements and Conditions of Contract. The Tenderer shall submit, together with the alternative, all amendments to the Specifications, Schedules and Drawings which would be brought about to the Tender Documents by the adoption of the alternative.

It shall be a term of any Contract that may be awarded on the basis of an alternative that the Contractor will be entirely responsible that the Works or any part of the Works affected by his alternative submission will be fit for the purpose for which they are required.

## 9. PRICING

### *9.1 Contract Price*

The Tender Price shall include the necessary payments to comply with all acts, laws, rules, work permits, National Insurance Contributions, Government Stamp Tax, taxes and regulations including any import duties at the time of tendering.

### *9.2 VAT*

Rates quoted in the Schedule of Work Items should be exclusive of Construction Value Added Tax as provisions are made for the inclusion of Value Added Tax in the General Summary to the Schedule of Work Items.

### *9.3 Tender Costs*

CRE is not responsible for, and will not pay for, any expenses or loses accrued by any Tenderer throughout the preparation of their tender.

### *9.4 Contract Price Fluctuations Clause*

Tenderers should note that the Contract will not include a Contract Price Fluctuations Clause. No price variation will be allowed for any rise, or fall, in cost of labour, materials, rates of currency exchange or any other factors affecting prices or services, unless expressed under the Conditions of Contract.

Tenders that are not fixed and firm in accordance with these requirements will be considered non-responsive and may be rejected.

## 10. DESIGNERS & SUB-CONTRACTORS

### *10.1 Designers*

If the Principal Contractor intends to appoint a designer, or specialist engineers, for all, or any element of the Works, then the name of the designer in each case should be submitted with the Tender on the form provided.

If a designer is proposed to be appointed, after the execution of the contract, then that designer should first be approved by CRE.

CRE reserves the right to reject any designer proposed, without giving a reason, and accepts no liability arising out of the rejection of the designer.

The Tenderer is also required to submit details of the procedures utilised for selecting and approving designers for work on projects.

All designers shall be required to supply a Collateral Warranty in respect of the design work they are carrying out.

### *10.2 Sub-Contractors*

If the Tender intends to appoint a sub-contractor, or several specialist sub-contractors, for any element of the Works then the name of the sub-contractor in each case is required to be submitted with the Tender on the form provided.

If a sub-contractor is proposed to be appointed after the execution of the Contract, then that subcontractor must first be approved by the Employer.

CRE reserves the right to reject any sub-contractor proposed, without giving a reason, and accepts no liability arising out of the rejection of the sub-contractor.

The Tenderer is also required to submit details of the procedures utilised for selecting and approving sub-contractors for work on projects.

In completing the list of proposed sub-contractors, the Tenderer is required to identify what portion of the overall Contract is being carried out in each case. Where any sub-contractor is carrying out in excess of 20% of the total value of the Contract they shall be required to provide a Performance Bond for that element of the Works. Any sub-contractor carrying out in excess of 20% of the total value of the Contract shall be required to be identified at Tender stage and their Performance Bond required to be provided before the Effective Date as specified in the Contract.

## 11. FORMS, BONDS, CONTRACTS

### *11.1 Letter of Tender*

The provisions of Section 7 of these instructions are to be highlighted in the completion of the Letter of Tender.

### *11.2 Conditions of Contract, Forms, Guarantees and Agreements*

It is to be noted that, notwithstanding any mutually agreeable correction of ambiguities, discrepancies, errors or omissions within these documents, their form and content are fixed and are not to be the subject of negotiation with any Tenderer.

### *11.3 Retention / Performance Bond*

The Employer, at his sole discretion, may decide to accept, at the time of issue of a Certificate of Substantial Completion, an on-demand retention bond instead of retaining the balance of the retention monies as set out in the Contract.

1.5% of the total value of the tender will be retained by CRE and paid to the Tenderer after 6 months continuous successful operation of the Solar system.

## 12. CONTACT AWARD CRITERIA

The selection of the successful contractor will be based on an objective assessment of the received quotes, with the weighting per category being as follows:

- 40% to price/cost
- 30% to quality/experience
- 30% to confidence/delivery

You are invited to submit a proposal on the project that includes and evidences, but not limited to, your organisation's ability to meet the evaluation criteria for:

- Price/cost – an assessment of price will be undertaken with the response that represents the best value for money gaining a full score and all other responses being scored on a pro-rata basis.
- Quality/experience - an assessment based on the material presented in the quote to deliver a high-quality outcome with supporting detail providing examples that detail experience in delivering similar projects and how this experience will be applied. Experience of installing solar on landfills will be an advantage.
- Confidence/delivery - an assessment based on the material presented in the quote to manage the project to reach the required outcome that provides confidence of project delivery within the proposed timescales.

The following evaluation criteria will be applied to each of the weighting categories to evaluate all tender submissions:

- 5 out of 5 = Excellent. Comprehensive and detailed response that provides high levels of confidence that the required service and delivery will be achieved. Demonstrates excellent understanding of the specification and contract requirements. In the case of the evaluation of price/cost, the lowest price bid will receive a score of 5.
- 3 out of 5 = Good. Response addresses key issues and is adequately developed. Provides good levels of confidence that the required service and delivery will be achieved. Demonstrates good understanding of the specification and contract requirements.

- 1 out of 5 = Basic. Response addresses a limited range of issues and is basically developed. Provides only limited levels of confidence that the required service and delivery will be achieved. Demonstrates only a basic understanding of the specification and contract requirements.
- 0 out of 5 = Unacceptable. No response or response fails to address issues and is poorly developed. Provides little or no confidence that the required service and delivery will be achieved. Demonstrates little or no understanding of the specification and contract requirements.

The tender submission that achieves the highest evaluated score will be awarded the contract and the tenderer will be notified by the Engineer of their position as the Provisional Contractor and details of their evaluated score. Each unsuccessful tenderer shall also be notified by the Engineer including news of their unsuccessful tender, the evaluated score and name of the Provisional Contractor and how the unsuccessful tenderer's evaluated score compared. Following the Engineer's notification, there will be a 10-day stand still period in which unsuccessful tenderers have the opportunity to appeal the decision relating to the Provisional Contractor. Assuming resolution of any appeals, at the end of these 10 days, the Provisional Contractor will be awarded the contract.

Furthermore, CRE does not bind itself to accept any tender in full and reserves the right to exclude any part of the scope of works as set out in the Tender Documents from the Contract. No compensation will be paid in respect of any part of the works so excluded.

## 13. Tender Evaluation

### *13.1 Tender Opening*

All tenders will be opened and assessed after the deadline for submission, and under no circumstances before this. This shall be carried out by CRE in the presence of the Engineer and the initial ranking shall be recorded on the basis of the uncorrected tender submitted.

### *13.2 Review & Compliance Check*

If any Tenderer has deviated to a substantial degree from the specified technical requirements, or provides an alternative offer that deviates significantly from the Specification, without also making an offer that satisfies all the conditions of this specification, or if equipment offered is of an inferior technical quality, then their Tender may be rejected.

The Tender Documents include a detailed description of the technical requirements and standards to which the equipment must be supplied and works constructed.

Tenders submitted will initially be reviewed to confirm:

- The Tenders are duly signed.
- The Tenders comply substantially with the requirements of the Tender Documents.
- The Tenders comply with requirements concerning nationality of contractors and origin of all goods.
- The Tenders contain no calculation errors.

### *13.3 Errors and Adjustments*

When evaluating Tenders, the Tender price will be adjusted by:

- Correction of any arithmetic errors.
- No adjustment will be made for tenders which offer to complete the works in a shorter time than is required by the Tender Documents. Tenders based on completing the works in a longer time will be adjusted by adding the value of the appropriate delay damages as defined in the conditions of contract.
- If the terms of payment offered are different from those specified, an adjustment will be made by calculating the present value of the payments using an interest rate of 5%.
- Appropriate adjustments for any other acceptable quantifiable deviations or variations to bring the tender to full compliance with the Specification.
- Excluding provisional sums and contingencies.
- Adding the value of an estimated quantity of work priced at the day-work rates and/or unit rates quoted in the Tender.

### *13.4 Total Evaluated Price*

The Total Evaluated Price will be determined for each Tenderer following the above procedure.

## 14. ADDITIONAL INFORMATION

A detailed consideration will be undertaken to decide on the award of the contract, during which the Tenderer may be asked to supply further information that is deemed of interest by CRE in order to determine the most economically advantageous tender to the Employer. Such information may include, but is not limited to:

- Information of a financial nature in order to assist CRE in determining the financial stability of the Tenderer.
- Any other information required by the Engineer or Employer to evaluate the tender (including alternative tenders).

The Tenderer is advised that any or all of this information may be included in the Contract to be signed on award.

**Failure to submit the requested information within the time limit specified with the request from the Engineer or extended time limit as may be agreed with the Engineer, shall exclude the Tender from further consideration.**

## 15. SITE VISITS

Tenderers visiting the site must first obtain permission from CRE through the Engineer, who will arrange a mutually acceptable date, time and duration of such visit. A minimum of 48 hours notice is required for such a visit request.

Any visiting personnel must adhere to site requirements, as well as COVID-19 social distancing measures. Visiting persons will only be admitted onto the site if they possess a negative COVID-19

lateral flow test, at most one week prior to the visit. This result must be sent to the Engineer, with associated documents that prove the result, at least 48 hours prior to vising the site.

## ANNEX 1 - FORM OF LETTER TO CONFIRM INTENTION TO BID – SOLAR FARM

LETTER CONFIRMING INTENT TO BID

Letter to be in the general form given below.

NAME OF CONTRACT:

Canford Renewable Energy Solar Farm Installation

TO: Josh Williamson

Canford Renewable Energy

We have examined the information provided regarding the above-mentioned works and can confirm that we, _____ of _____ intend to provide a bid for the Canford Renewable Energy Solar Farm within the tender period.

The contact details of our proposal lead are:

_____

_____

Yours sincerely,

XXXXX

End.

## ANNEX 2 - FORM OF LETTER OF TENDER – SOLAR FARM

LETTER OF TENDER

NAME OF CONTRACT:

Canford Renewable Energy Solar Farm Installation

TO: Josh Williamson

Canford Renewable Energy

We have examined the information provided regarding the above-mentioned works: Conditions of Contract, Employer's Requirements, Specifications and related design and construction documents. We have examined, understood and checked these documents and ascertained that they contain no errors or defects. Accordingly, we offer to design, execute and complete the whole of the said Works and remedy any defects therein, in conformity with this Tender, including all documents and the enclosed proposal, for:

Solar Farm Turnkey Price £ _____ (excl. VAT)

TOTAL COST IN WORDS _____

Delivery Schedule – Post contract Award

Solar Farm Delivery: _____ Months

We undertake to complete and deliver the whole of the Permanent Works comprised in the Contract within the time stated in the tender proposal.

If this offer is accepted, we will provide the specified Performance Security, commence the Works as soon as is reasonably practicable after the Commencement Date, and complete the Works in accordance with the above-named documents within the Time for Completion.

In consideration of CRE supplying us the tender documents free of charge, we agree to this tender remaining open for acceptance for 180 says from its receipt of this tender (or such extended time as may be agreed between CRE and this tenderer).

We understand that you are not bound to accept the lowest or any tender you may receive.

SIGNATURE: _____

IN CAPACITY OF: _____

DULY AUTHORISED
TO SIGN TENDERS
FOR AND ON BEHALF OF: _____

ADDRESS: _____

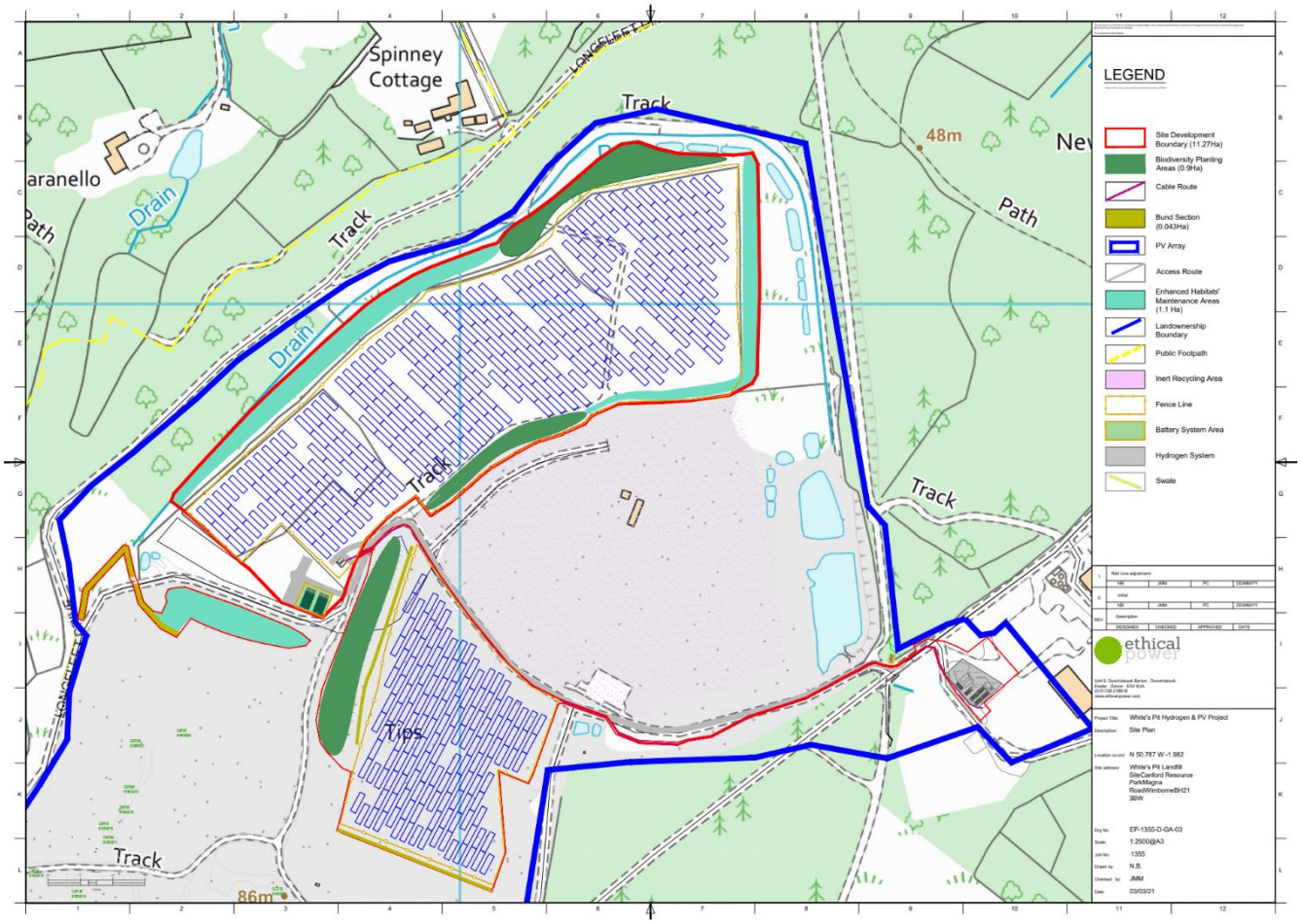
_____

DATE: _____

End.

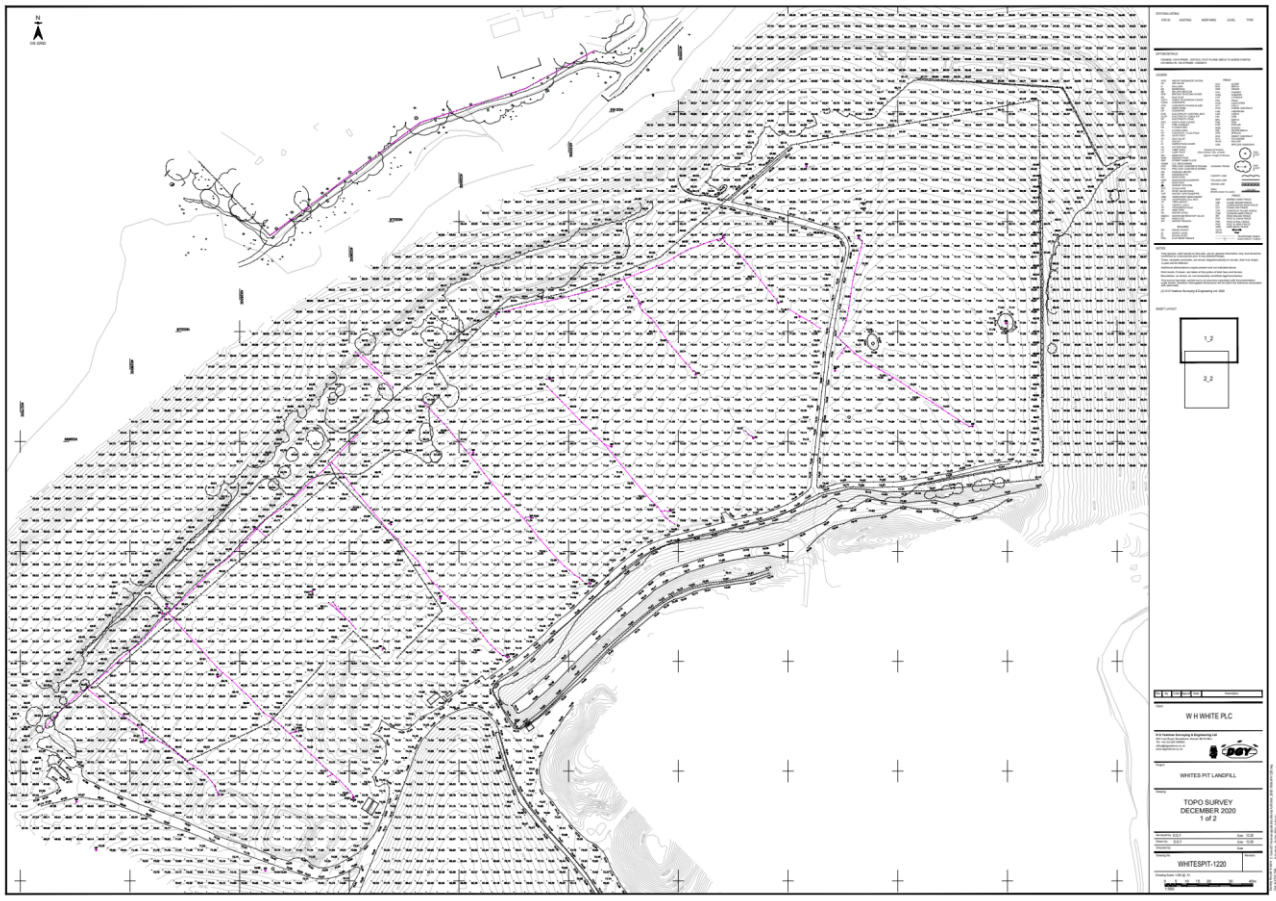
APPENDIX 1

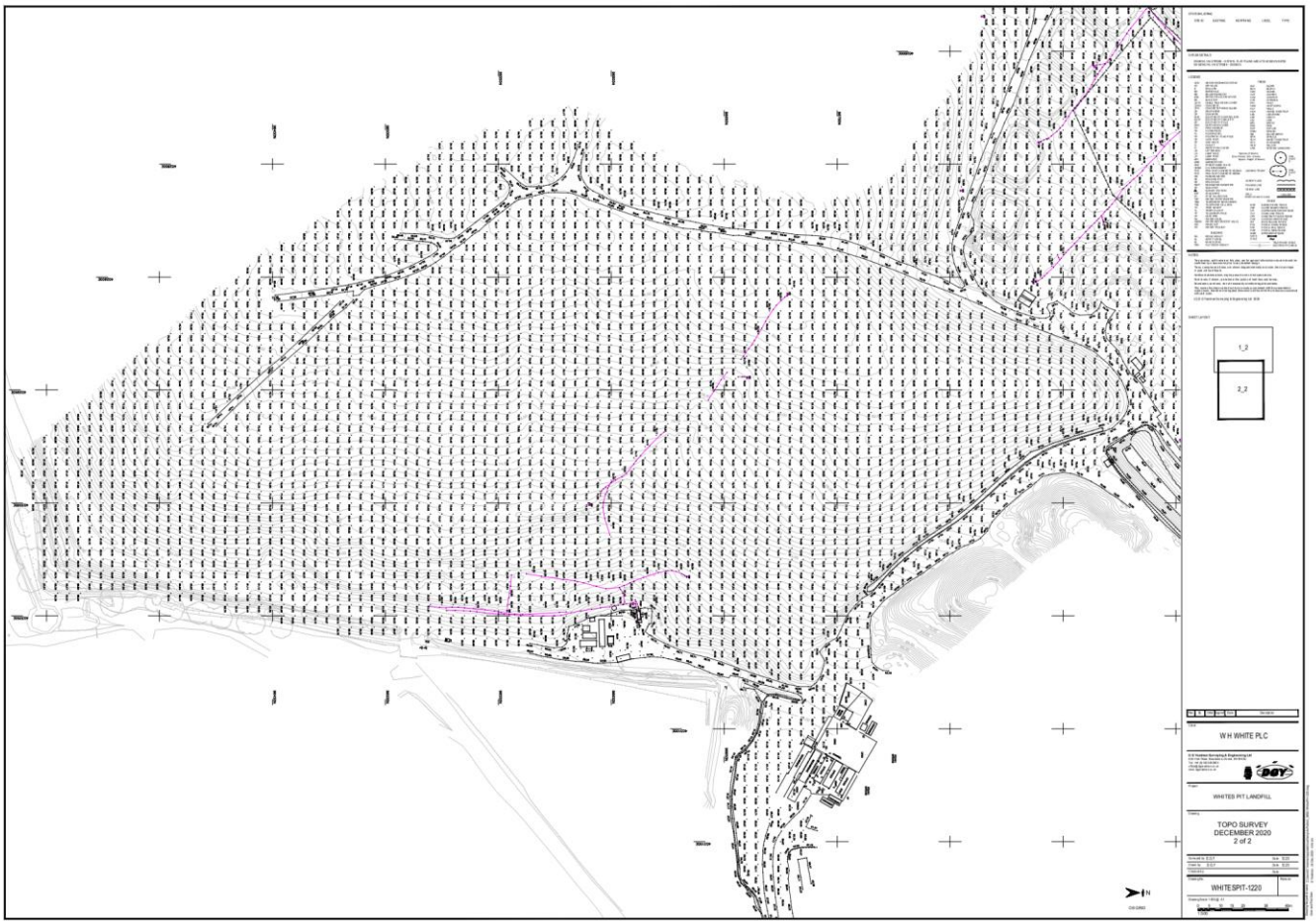
**Site Plan –** For the full document see appendix file.



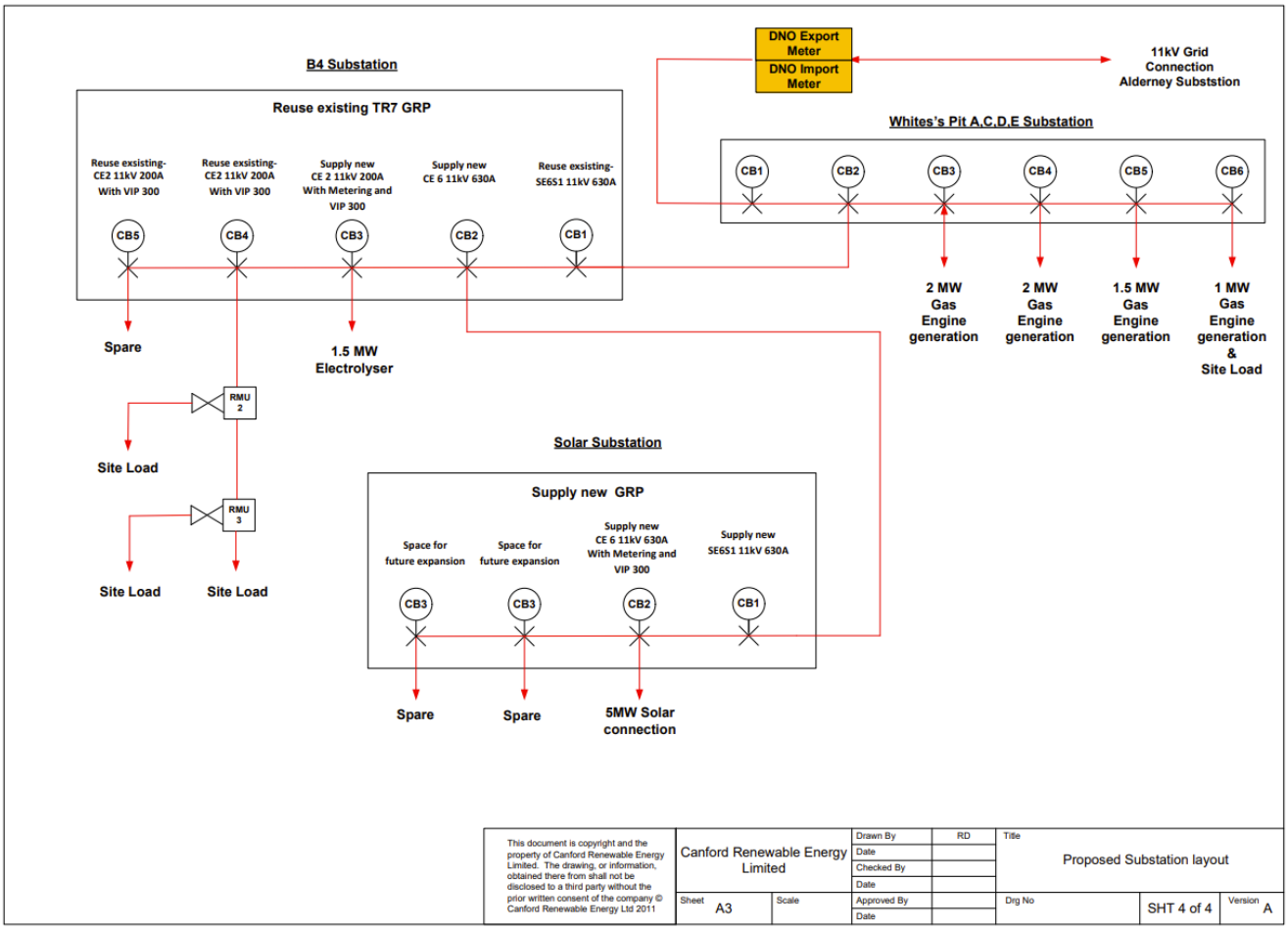
APPENDIX 2

**Site Topography Survey –** For the full document see appendix file.




W H WHITE PLC
WHITES PIT LANDFILL
TOPO SURVEY
DECEMBER 2020
2 of 2
WHITESPIT-1220

**Indicative Site SLD –** For the full document see appendix file



APPENDIX 3

**Grid Connection Agreement** – For the full document see appendix file.

Kellie - please take a copy of this letter + contract and then send the original to Allan + Wallis for safe keeping.

Our reference:

Your reference: JWPF/153.3.3/KH

SOUTHERN ELECTRIC

Southern Electric plc
Southern Electric House
Westacott Way
Littlewick Green, M'head
Berkshire, SL6 3QB
Telephone: 01628 58 4987
Facsimile: 01628 58 4523

Mr J Fryett
Technical Director
Canford Renewable Energy Ltd
Site Control Centre
Magna Road
Wimbourne
Dorset

RECEIVED
12 FEB 1996

8 February 1996

Dear Mr Fryett

**PROPOSED NFFO3 WHITE'S PIT - CONNECTION AGREEMENT**

Please find enclosed a duly counter signed and dated copy of the Connection Agreement for Embedded Generation.

Mark Barnes of H Leverton asked me to give you comfort by confirming that the Agreement is devised around Southern Electric always acting with "good industry practice". As this is not always evident to the customer his ultimate redress is through the Director General of OFFER, the industry regulator, who is empowered to determine what is reasonable under the circumstances.

I have sent a copy of the agreement to Mr McWilliam, Southern Electric's NFFO Officer.

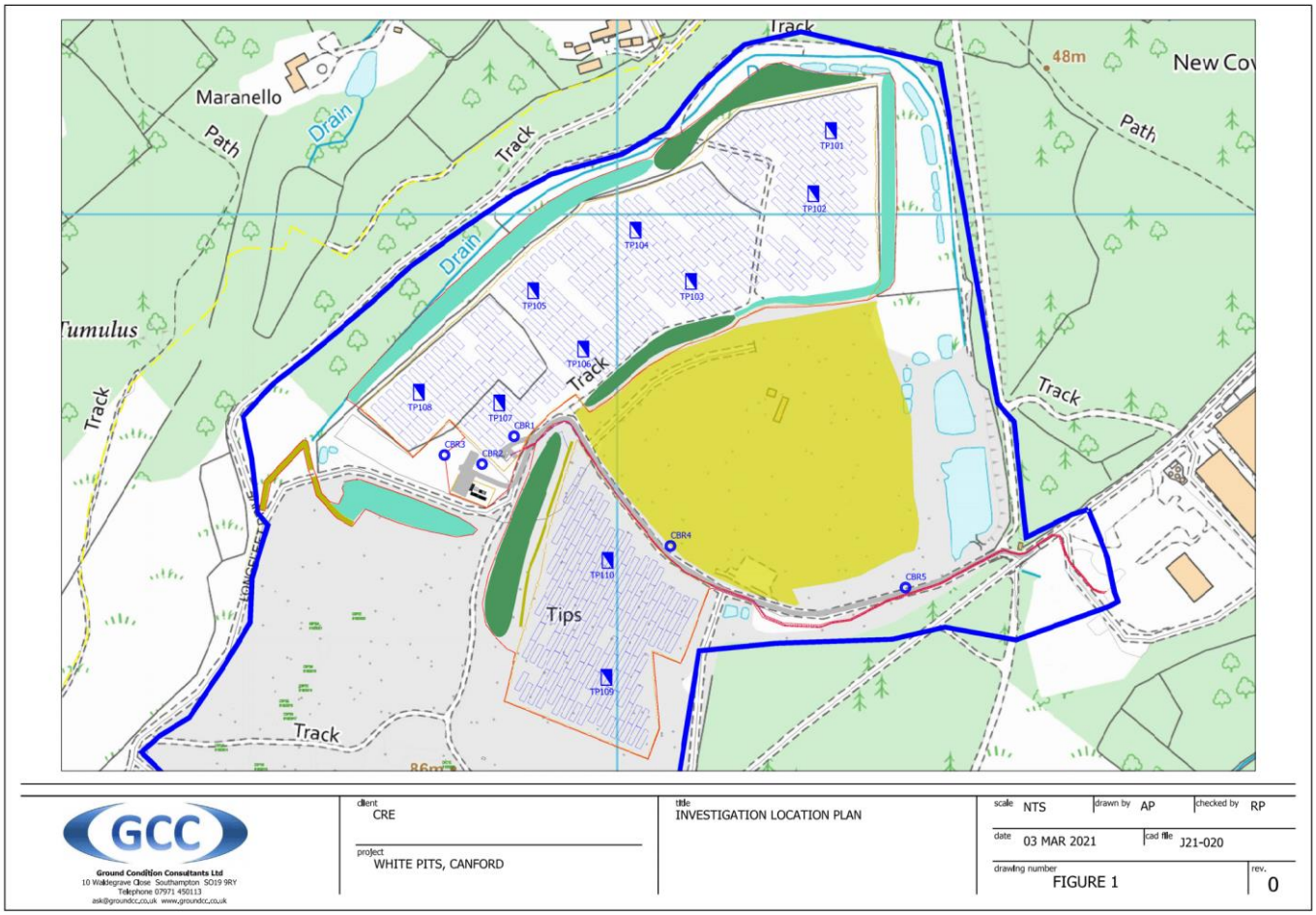
Mike Maynard will be in touch with you shortly on the technical issue of auto-reclosure as referred to in clause 8.3 of above agreement.

Yours sincerely

M S LALLI
**Strategic Planning**

APPENDIX 4

**Ground Investigation Location Plan –** For the full document see appendix file.



**Pull Out Testing Report –** For the full document see appendix file.

SOLARPORT

# Pull Out Testing: Final Report

## Task: Vertical Peak Load Testing

| | | | |
|---|---|---|---|
| Location: | | Whites pit- Updated 16/04/21 | |
| Solarport Project Ref: | | P210397 | |
| Project Owner: | | L.Tattershall | |
| Revision: | | 1 | |
| Document Author: | | S.Gillen | |
| Horizontal Testing (Tick if required) | | Vertical Testing (Tick if required) | x |

**Canford Logs –** For the full document see appendix file.

GCC Ground Condition Consultants

**TRIAL PIT LOG** TP101

**PROJECT NUMBER** J21-020
**PROJECT NAME** White Pits
**CLIENT** CRE
**ADDRESS** Canford, Dorset
**DATE** 03/03/21

**SI COMPANY** GCC
**EXCAVATION METHOD** 20t Excavator
**LOGGED BY** AP

**CASING**

**COMMENTS**

| Samples | Water | Depth (m) | Graphic Log | Material Description | Backfill |
|---|---|---|---|---|---|
| | | 0.1 | | Grass over dark brown silty fine to coarse SAND with rootlets (Made Ground) | |
| | | 0.2 | | | |
| | | 0.3 | | | |
| B - 0.3-0.4 | | 0.4 | | | |
| | | 0.5 | | Dark brown slightly clayey silty slightly gravelly organic fine to coarse SAND (Made Ground) | |
| | | 0.6 | | | |
| | | 0.7 | | | |
| | | 0.8 | | | |
| | | 0.9 | | | |
| | | 1 | | | |
| | | 1.1 | | | |
| | | 1.2 | | | |
| | | 1.3 | | | |
| | | 1.4 | | | |
| B - 1.4-1.5 | | 1.5 | | | |
| | | 1.6 | | Termination Depth: 1.5m | |
| | | 1.7 | | | |
| | | 1.8 | | | |
| | | 1.9 | | | |

Page 1 of 1

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**Site Investigation Reports –** For the full document see appendix file.

Ground Condition Consultants

**WHITE PITS LANDFILL, BH21 3AL**

**FACTUAL SITE INVESTIGATION REPORT**

**MARCH 2021**

Prepared for
**Ethical Power Ltd**
Unit 9, Dunchideock Barton
Dunchideock, Exeter
EX2 9UA

Prepared by
**Ground Condition Consultants Ltd**
10 Waldegrave Close
Southampton
Hampshire
SO19 9RY

ask@groundcc.com
www.groundcc.com

**Ground Investigation Reports –** For the full document see appendix file.

Ground Condition Consultants

**WHITE PITS LANDFILL, BH21 3AL**

**GROUND INVESTIGATION REPORT**

**APRIL 2021**

Prepared for
**Ethical Power Ltd**
Unit 9, Dunchideock Barton
Dunchideock, Exeter
EX2 9UA

Prepared by
**Ground Condition Consultants Ltd**
10 Waldegrave Close
Southampton
Hampshire
SO19 9RY

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