Interface Requirements for

Grid Connection of Renewable Energy Power System
1. Introduction

1.1. This document aims to provide the general requirements for meter position, metering arrangement, meter cubicles and operation of meters for grid connection of renewable energy power system (the REPS).

1.2. Renewable Energy Meters “RE Meters” refer to those meters that are used for metering the electricity generated by the REPS and “Electricity Account Meters” refer to those meters that are used for determining the amount of electricity consumed from HK Electric’s electricity grid on the Service Address.


1.4. This document is applicable to REPS of aggregated power rating up to 1,000 kW at 220/380 V. For REPS other than the above rating, the applicant should provide the proposed installation arrangements for HK Electric’s consideration as soon as possible in the planning stage.

1.5. This document shall not be construed as a part of terms and conditions of the supply agreement.

1.6. If there is any inconsistency or ambiguity between this document and GCS, this document will prevail.

1.7. If there is any inconsistency or ambiguity between the English and Chinese versions, the English version shall prevail.

2. Meter Position

2.1. The RE Meter is required to be installed at a location that is close to ‘the 220/380 V low-voltage electricity supply network operated by HK Electric’ (the Grid) and typical arrangements are shown in Drawing Nos. 1 and 2.

2.2. The RE Meter shall be installed in a clean and dry indoor location which is not exposed to weather, mechanical damage, vibrations, extremes of temperature or dampness, etc. The location shall be readily accessible for the purposes of meter reading, meter fixing and meter maintenance.
2.3. The RE Meter is normally required to be installed inside an existing switch room, meter duct/room or meter cubicle. The Customer is required to prevent unauthorised entry to the switch room and meter duct/room but maintain safe and unrestricted access for HK Electric’s staff and contractor at all times.

2.4. The location of the RE Meter shall be able to receive adequate 3G/4G signals for data collection.

2.5. The location(s) of the existing Electricity Account Meter(s) shall also be able to receive adequate 3G/4G signals for data collection.

3. **Metering Arrangements/Requirements**

3.1. Separate RE Meters shall be installed for REPS of different renewable energy technologies under the same application.

3.2. Two lockable main switches (4-pole for 3-phase or double pole for 1-phase) of appropriate rating before and after the RE Meter are required to be installed for isolating all sources of supply from the Grid and REPS to the RE Meter.

3.3. Meter board must be provided by the Customer for installation of meters and accessories. Meter board should preferably be of hard wood with varnish treatment and at least 12 mm thick, and the distance between the surface of meter board and wall surface shall not be less than 25 mm.

3.4. Fixing height of meter board (measured from the top of meter board to finished floor level) shall be maximum 2.25 m and minimum 0.9 m.

3.5. If the RE Meter is installed inside a meter duct with no free working space inside, the distance between meter surface and the hinged door of the meter duct at closed position shall be maximum 600 mm and minimum 200 mm.

3.6. Minimum working space in front of the RE Meter is 900 mm. Minimum 70 mm clearance is required on each side of the RE Meter.

3.7. Adequate lighting shall be provided at the meter location.
4. Cubicle for RE meters

4.1. If the RE Meter accommodation is accessible by anyone including unauthorised persons and persons without relevant qualifications, the Customer should have the right of use of that location and is required to provide and install a meter cubicle to house the RE Meter. For details of the meter cubicle, please refer to Drawing No. 3.

4.2. If the rated current of the main switch for the REPS is greater than 100 Ampere (3-phase), a current transformer (C.T.) operated meter will be adopted. Extra space should be provided for accommodating a C.T. cum link box. For main switch rating exceeding 100 Ampere and up to 400 Ampere, HK Electric will provide the C.T. cum link box free of charge. The dimensions of the box are 305 mm x 375 mm x 175 mm (H x W x D). The working space in front of the box is 900 mm and the minimum clearance at the two sides of the box shall be 100 mm for sealing work.

For main switch rating exceeding 400 Ampere, the C.T. Chamber as stipulated in our GCS is required to be fitted into the switchboard cubicle by the Customer.

4.3. The meter cubicle (including the transparent glass window) shall comply with the relevant Fire Services Department’s requirements.

4.4. The distance between meter surface to the hinged door at closed position shall be maximum 50 mm and minimum 20 mm.

4.5. If other related electrical equipment is required to be installed inside the meter cubicle, the size of the meter cubicle shall be enlarged accordingly.

4.6. The meter cubicle shall be installed at an easily accessible location / level to facilitate meter reading. A plastic engraved label bearing words: “電表箱” and “Meter Cubicle” shall be installed at the meter cubicle front cover. Recommended size of the label is 150 mm x 75 mm.

4.7. An address label shall be installed on the cubicle. Recommended size of address label is 120 mm x 60 mm.

5. Operation

5.1. The Customer must not interfere or tamper with the HK Electric’s equipment.
5.2. Other than renewable energy source, the Customer must not connect any energy sources or energy storage facilities, which will affect the reading of the RE Meter, to the RE Meter.

5.3. Operation and inspection on the RE Meter can only be carried out by HK Electric’s staff or contractor.

5.4. The RE Meter and the existing Electricity Account Meter must be connected for remote reading by HK Electric.

5.5. Meter seals shall not be removed or tampered by the Customer or the Customer’s Registered Electrical Contractor/Registered Electrical Worker. A fixed charge shall be levied on unauthorised interference. However, if rewiring of the Customer’s installation requires removal of the seals, prior consultation with HK Electric shall be made.

5.6. To determine the amount of the electricity consumed on the Service Address for REPS which has participated in the Feed-in Tariff Scheme (if applicable), metering system modification will be carried out by HK Electric. The existing Electricity Account Meter(s) may also be replaced as considered necessary by HK Electric.

5.7. In case of the Electricity Account at the Service Address is terminated without immediate account transfer to another customer, the Customer is required to switch off the switch between the RE Meter and the REPS, to isolate the REPS.

- END -
Drawing No. 1
SINGLE-LINE DIAGRAM FOR RE METERING ARRANGEMENT
Drawing. No. 2
SINGLE-LINE DIAGRAM FOR RE METERING ARRANGEMENT
**METER CUBICLE WITH TRANSPARENT GLASS WINDOW**

**Table:**

<table>
<thead>
<tr>
<th>METER TYPES</th>
<th>MAIN SWITCH RATING (AMP)</th>
<th>MINIMUM CLEARANCE FOR METER TERMINATION</th>
<th>METER BOARD DIMENSIONS</th>
<th>METER CUBICLE DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - Ø</td>
<td>&gt; 100</td>
<td>T: 250</td>
<td>H: 480</td>
<td>W: 300</td>
</tr>
</tbody>
</table>

**NOTE:**
1. To accommodate a 1-phase meter, the distance between the surface of meter board and the transparent glass window of the RE meter cubicle shall be maximum 180 mm and minimum 150 mm.
2. To accommodate a 3-phase meter, the distance between the surface of meter board and the transparent glass window of the RE meter cubicle shall be maximum 220 mm and minimum 190 mm.
3. All dimensions are in mm.

**Drawing. No. 3**

**REQUIREMENTS FOR RE METER CUBICLE**