

## **Checklist No. 4 — Items for Periodic Testing of Renewable Energy Power System (REPS) Installations**

Installation Address: \_\_\_\_\_

Warning — Dual Supply: Isolate PV system supply main switch (#1) and utility supply main switch (#2) before carrying out works.

**Tested by/Date**  
**(N/A if not applicable)**

### **(a) Power Generating Equipment**

- |        |   |       |
|--------|---|-------|
| (i)    | The solar PV panels cleaned.  | _____ |
| (ii)   | No visible damage to impair safety.   | _____ |
| (iii)  | Appropriate cables effectively connected.   | _____ |
| (iv)   | No evidence of abnormal hot spot at the solar PV panels.  | _____ |
| (v)    | Blocking diodes functioned properly.  | _____ |
| (vi)   | No evidence of defects (e.g. dilapidation, loose/defective connections, deformation or displacement, etc.) at the supporting structure of the power generating equipment. | _____ |
| (vii)  | All exposed conductive parts effectively earthed.   | _____ |
| (viii) | Supplementary equipotential bonding effectively provided between exposed conductive parts and extraneous conductive parts.  | _____ |

**Tested by/Date**  
**(N/A if not applicable)**

**(b) Inverter**

- |        |   |       |
|--------|---|-------|
| (i)    | No visible damage to impair safety.                                     | _____ |
| (ii)   | Proper ventilation provided.  | _____ |
| (iii)  | No abnormal operating temperature.                                      | _____ |
| (iv)   | Anti-islanding function operated properly.                              | _____ |
| (v)    | Synchronisation check function operated properly.                       | _____ |
| (vi)   | Automatic isolation function operated properly.                         | _____ |
| (vii)  | Under / Over-frequency / voltage protection function operated properly. | _____ |
| (viii) | Auto-reconnection function operated properly.                           | _____ |
| (ix)   | No fault alarm.   | _____ |

**(c) Isolation Transformer**

- |       |  |       |
|-------|--|-------|
| (i)   | No visible damage to impair safety.  | _____ |
| (ii)  | Proper ventilation provided.   | _____ |
| (iii) | No abnormal operating temperature.   | _____ |
| (iv)  | Circuit protective conductor connected to metallic enclosure(s) enclosing the isolation transformer is connected to earth. | _____ |

**Tested by/Date**  
**(N/A if not applicable)**

- (v) No earth connection between the primary and secondary sides of the isolation transformer is made.
- (vi) The lowest insulation resistance measured between the primary and secondary sides of the isolation transformer is \_\_\_\_ Mohms (not less than 1 Mohm).

\_\_\_\_\_

\_\_\_\_\_

**(d) REPS Circuit**

- (i) No visible damage to impair safety.
- (ii) An up-to-date schematic diagram displayed.
- (iii) Appropriate cables effectively connected.
- (iv) Cables protected against mechanical damage.
- (v) DC protection devices provided for the circuits between renewable energy power generating equipment and inverter in compliance with Code 9.
- (vi) The earth fault loop impedance of the circuit in compliance with Code 11.
- (vii) Operation of isolators, circuit breakers and switches checked in compliance with Code 21B(9).
- (viii) The RCD/RCBO trip time checked in compliance with Code 21B(9) (if applicable).

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**Tested by/Date**  
**(N/A if not applicable)**

- (ix) Lowest insulation resistance being  
\_\_\_ Mohms (not less than 1 Mohm)  
measured between cores and cores  
to earth.

\_\_\_\_\_

**(e) Earthing**

- (i) No visible damage to impair  
safety.
- (ii) Appropriate protective conductors  
effectively connected.

\_\_\_\_\_

\_\_\_\_\_

**(f) Lightning Protection**

- (i) Proper lightning protection systems  
for the outdoor equipment  
checked.

\_\_\_\_\_

**(g) System Test**

- (i) The total harmonic current distortion  
(not exceeding 5%) and DC injection  
current (with current magnitude as  
required by the Electricity Supplier)  
checked.
- (ii) Anti-islanding function (with tripping  
time as required by the Electricity  
Supplier) checked.

\_\_\_\_\_

\_\_\_\_\_

**(h) Notice and Labels**

- (i) Notice displayed at the facility  
showing the name and registration  
number of the registered electrical  
contractor employed for maintaining  
the generating facility in continuous  
safe working order checked in  
compliance with Code 17.

\_\_\_\_\_

**Tested by/Date**  
**(N/A if not applicable)**

- (ii) Dual power supply warning labels displayed at all electrical equipment with dual power supply sources checked in compliance with Code 17. \_\_\_\_\_
- (iii) DC warning labels displayed at DC switchgear checked in compliance with Code 17. \_\_\_\_\_

Remarks: REC and REW are required to ensure their responsible fixed electrical installation is able to comply with the relevant requirements of this Code of Practice, rather than the items as listed in the checklists only.