

## Terms of Reference for Construction of Solar Kiosks in kebeles adjacent to Awash and Simien Mountains National Parks

### 1. Context

Within the frame of the Strategic Climate Institutions Program (SCIP); Population, Health and Environment Ethiopia Consortium (PHEEC) is implementing a project entitled "Building Institutional Capacity and Participatory Leadership in Awash and Simien Mountains National Parks for Resilience, Mitigation and Adaptation to Climate Change".

Overall, the project aims to improve park management through building capacity of multi-stakeholders and communities on climate related issues for the mitigation of the impacts of climate change and to ensure climate change adaptation and environmental resilience in the stated National Parks.

So, with this background, PHE EC wishes to enlist the service of a suitably qualified professional bidder who can construct a clean and attractive multipurpose solar kiosks in kebeles adjacent to Awash and Simien Mountains National Parks. The kiosks are used by organized entrepreneurs selling hot and cold drinks, fast foods and providing cell phone and lantern charging services for the nearby local communities and passers-by, and the following details provide the terms of reference for the kiosks and the solar energy system set up.

### 2. Objectives

The overall objective of this work is to set up solar kiosks for businesses that include mobile and lantern charging, heating, lighting and cooling as a model for a micro-green enterprise in the area. The specific objectives are:

- to engage vulnerable and organized community members in running a micro green enterprise that serves as a model for the wider community members,
- to address needs of rural communities inhabiting off-the grid areas and are without access to source of energy.

### 3. Solar kiosk specifications

The solar kiosks will:

- be made out of **galvanized steel**,
- have **Size** of Length = 4m, Height = 2.8m and Width = 2.4m
- have **walls** framed with RHS 40x40x2mm columns at one meter interval; and the 4 wall parts assembled together using 17mm bolts and nuts at least at 3 places vertically,
- have LTZ section framed one single leafed **door** with the size of 2mx1m, 1mm sheet metal thickness, opening to outside being hinged to the wall, and with quality key (Italy) for external lock & 10" latch for internal lock.
- have 3 sliding ventilation **windows** with the size of 1.1mx1m, 25mmx25mm frame, 1mm sheet metal thickness; should also have upper and lower sides slide on U-shape or L shape steel, angle frame L=30mm and 10" latch for internal lock.
- have 4 pieces of **roof truss structures** made of RHS 40x40x2mm upper chord, RHS 30x30x1.5mm truss member and RHS 40x40x2.5mm lower chord both ways; made up of Ega sheet, Ega 400 and the sheets attached with J-bolt, washers and nuts being drilled on the upper chord (RHS); roof truss structures should be separated and fixed at site with bolts and nuts.

- have **shelves** fabricated with RHS 25x25x15mm frame and on top sheet metal with thickness of 0.8mm and to be fixed with bolts and nuts on the inner sides of the walls longitudinally, and should have a space for a freezer
- have well enforced **floor** foundation,
- have pre-installed solar panel mounting brackets on top of the roof,
- have an appropriate and well installed solar energy system on solar panel mounting bracket with a capacity that provides at least mobile and lantern charging, lighting and cooling, fast food cooking, and tea and coffee making services.

#### 4. Technical Specifications for the solar energy system

**Objective of the work** – to carry out supply, installation and commissioning of 2 solar energy systems with kiosk dimensions of 4m x 2.4m each, and a power supply of **600 Watt** each. The kiosks will be fitted with the necessary solar energy system to provide such services as mobile and lantern charging, internet and secretarial services, entertainment and barbers services, lighting and cooling, and related services.

More specifically, the expected services include the following for one solar kiosk system:

| Description                                | Qty |
|--|-----|
| • Mobile charging stations                 | 40  |
| • Solar lantern charging                   | 20  |
| • Internet service/Laptop                  | 1   |
| • Secretarial service –Printer and scanner | 1   |
| • Entertainment –Radio                     | 1   |
| • Entertainment –Speaker                   | 1   |
| • Barberry –Hair cutting                   | 1   |
| • Cold drinks –Refrigerator                | 1   |
| • Light bulbs                              | 3   |
| • Cook stove for tea, coffee, fast foods   | 1   |

#### Specifications & Quantities of items to be provided for one unit of solar kiosk system:

| S/N | Description  | Unit      | Size | Quantity |
|-----|--|-----------|------|----------|
| 1   | Mono crystalline module, with roof-top mounting structure              | Watt peak | 100  | 6        |
| 2   | Deep cycle maintenance free solar batteries, with rack                 | Ah        | 100  | 6        |
| 3   | Inverter (pure sine wave)- with wall mounting board                    | Watt      | 750  | 1        |
| 4   | Controller, with wall mounting board                                   | A         | 60   | 1        |
| 5   | DC light bulbs with holders, lamp shades and on/off switches           | Watt      | 11   | 3        |
| 6   | AC mobile charging boards, with at least 15 charging ports             | No.       |      | 1        |
| 7   | DC mobile charging boards, with at least 25 charging ports             | No.       |      | 1        |
| 8   | DC power outlet with DC voltage selector for lantern charging          | No.       |      | 25       |
| 9   | 12 VDC socket (power outlet) for DC fridge plugging (surface mounting) | No.       |      | 1        |
| 10  | AC sockets (power outlets)- surface mounting                           | No.       |      | 4        |
| 11  | Electric cables and accessories for wiring a 2.4m x 4m room            | LS        |      |          |

## **5.Tasks**

The bidder must:

- have a collection of all the required fabricated materials for the solar kiosks construction (assemblage),
- prepare sites for solar kiosks construction and keep it clean and its surrounding,
- transport all the required fabricated materials and items for solar energy system and assemble at the sites,
- paint the inner and outer sides of the kiosks with anti-rust and attractive synthetic paints at the end of the construction,
- install the appropriate solar energy system as per the given specifications,
- complete the construction of the solar kiosks and installation of the required solar energy system in 40 days after signing the contract.

## **5. Deliverable**

1. The eligible bidder will hand over two solar kiosks being constructed and equipped with appropriate solar energy system at Awash and Simien Mountains National Parks in 40 days after signing the contract,

**6. Duration of the contract:-** November 3/2014 to December 14/2014.

## **7. Application process**

The duration of the construction work is for a period of 40 days in both parks starting from the date of the issuance of the contract. Candidates who meet the required qualifications may apply by sending a technical (sketch drawings) and financial proposals and their work experience that is relevant to the required work as indicated in the work specifications to PHE EC office (info@phe-ethiopia.org or pheethiopia@gmail.com) by no later than October 29, 2014.

For any clarification on the process, please contact tadesse.hailu@phe-ethiopia.org; Telephone: 0912 174007.