REQUEST FOR EXPRESSIONS OF INTEREST
IN PARTNERING ECREEE AS TRAINING AND EXAMINATION CENTRES FOR
THE REGIONAL CERTIFICATION OF PHOTOVOLTAIC MINI-GRIDS AND
SOLAR HOME SYSTEMS INSTALLATION SKILLS IN THE ECOWAS MEMBER STATES

Background

Within the implementation framework of the ECOWAS Renewable Energy Policy and the National Renewable Energy Action Plans (NREAP) of the ECOWAS Member States, the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) set up a scheme called the ECOWAS Certification of Sustainable Energy Skills (ECSES) in 2014. Through the support of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, the International Renewable Energy Agency (IRENA), and other development partners, thorough Job Task Analyses have been developed. The ECSES aims to promote professional skills and find adequate solutions related to the poor quality of equipment and facilities in the renewable energy and energy efficiency sector.

ECREEE, as the Regional Certification Body, partners with selected institutions to organize certification examinations in the ECOWAS Member States. There are two types of centres with which ECREEE intends to establish partnerships going forward:

- Training Centres, which run gender-responsive training courses for photovoltaic (PV) installers, women and men, based on the elaborated Job-Task-Analysis (JTA) for PV Mini-Grid and Solar Home Systems (SHSs). These trainings will be advertised in a gender-responsive way targeting women and men in the communication campaign to recruit trainers. The training will be provided by a mixed team composed of women and men trainers. The course materials must include references to women in the examples given (oral and pictures representing both women and men in concrete situations). Trainee groups are expected to include women to reach gender equality as much as possible; and
- Examination Centres that organize the certification of gender-responsive exams on PV mini-grid and SHS installers for eligible candidates. It is expected from the Examination Centres to include gender-responsive sensitisation and awareness aspects in the overall communication campaign and call for the expression of interests of the candidates. Likewise, the examination materials must include references to women in the examples given (text and pictures representing both women and men in concrete situations).

The current certification system is for **domestic off-grid solar photovoltaic system technicians**. ECREEE calls this "**Level 1**" of the system. ECREEE plans to gradually expand the

levels of the system that meet the requirements of the International Organization for Standardization's standard called ISO/IEC 17024:2012. This standard is also known as the "*Conformity assessment"* and it comprises *"the general requirements for bodies operating certification of persons"*[1]. Certified professionals who meet these requirements will gain international recognition.

Level 2 of the certification system will be for the **designers, installers, and inspectors of photovoltaic mini-grids**. To operationalize this certification Level, ECREEE is partnering with GIZ and the African Development Bank (AfDB). The interventions through which this is to be realized are the GIZ-funded "Promotion of Climate-friendly Electricity Market in the ECOWAS Region--Phase 2 (ProCEM II)" and the AfDB-funded "Desert-to-Power West Africa Regional Energy Program (WAREP)--Phase 1".

Purpose of this Call for Expressions of Interest to Partner ECREEE

While efforts are being made to introduce Level 2, ECREEE intends to continue implementing the Level 1 of the certification system in 10 ECOWAS Member States that have not benefited yet. Beyond this, the agency intends to select gender-responsive Training and Examination Centres for the implementation of **Level 2** in the ECOWAS Member States. All institutions interested in becoming gender-responsive Training or Examination Centres are invited to submit Expressions of Interest to ECREEE. A Centre cannot host training and examinations. Tables 1 and 2 present the criteria for the selection of centers.

Selection Criteria

The criteria for the selection of an institution are summarized in Table 1 below.

Table 1: Criteria for selecting an Institution as a Training Centre

#	To be selected as a Training Centre, an institution should be:	Score (%)
1	A public, private, or community educational institution of higher learning (IHL) in an ECOWAS Member State with a minimum of 10 years of experience in developing, implementing, and evaluating training courses in the field of energy	10
2	Have permanent specialized staff, women, and men, with a minimum of a Master's degree in renewable energy or Electrical Engineering or Economics who would provide training or be part of an examination board. Specific staff requirements are: • At least 3 staff with Engineering backgrounds, of which at least 1 woman • At least 1 staff with an Economics background,	30

[1] The standard ISO / IEC 17024: 2012 contains principles and requirements for a body certifying persons against specific requirements and includes the development and maintenance of a certification scheme for persons. For more information, visit https://www.iso.org/standard/52993.html

<table>
<tr><th>#</th><th>To be selected as a Training Centre, an institution should be:</th><th>Score (%)</th></tr>
<tr><td></td><td>Having female technical staff is a requirement</td><td></td></tr>
<tr><td>3</td><td>Have, at least, one mini-grid installed on the premises and with four kits of Solar Home Systems for practical training sessions. The minimum components of the mini-grid are as follows:
<table>
<tr><th>#</th><th>Description</th><th>Characteristics</th></tr>
<tr><td>i</td><td>Solar PV field on ground or roof</td><td>10kWc Minimum</td></tr>
<tr><td>ii</td><td>Solar batteries Park</td><td>600 Ah-48V Minimum</td></tr>
<tr><td>iii</td><td>DC Box</td><td>Minimum of two</td></tr>
<tr><td>iv</td><td>AC Box</td><td>Minimum of two</td></tr>
<tr><td>v</td><td>On/Off Grid Inverter</td><td>10KW - Three-phase 230V/380V</td></tr>
<tr><td>vi</td><td>Transformer MT/BT</td><td>1</td></tr>
<tr><td>vii</td><td>Small Grid</td><td>1</td></tr>
</table>
The composition of the four kits for Solar Home Systems is as follows:
<table>
<tr><th>#</th><th>Description</th><th>Quantity</th></tr>
<tr><td>a</td><td>Solar PV Modules (12 V)</td><td>8</td></tr>
<tr><td>b</td><td>Solar Batteries, voltage 12V (Minimum capacity: 22Ah)</td><td>8</td></tr>
<tr><td>c</td><td>Inverter DC to AC 12V/230V</td><td>4</td></tr>
<tr><td>d</td><td>Charge Controller PWM 12V/24V – 20A</td><td>4</td></tr>
<tr><td>e</td><td>Circuit breakers (DC et AC)</td><td>4</td></tr>
<tr><td>f</td><td>DC fuse</td><td>4</td></tr>
<tr><td>g</td><td>Cables, connectors, and accessories</td><td>Several</td></tr>
<tr><td>h</td><td>12V DC light</td><td>4</td></tr>
<tr><td>i</td><td>230V AC light</td><td>14</td></tr>
</table></td><td>30</td></tr>
<tr><td>4</td><td>• Have a suitable training room with sufficient lighting and ventilation, a whiteboard and a projector for the training sessions,
• Have separate working toilets for women and men
• Have a central storage facility for equipment and materials with a closely tracked security system.</td><td>10</td></tr>
<tr><td>5</td><td>Offer gender-responsive solar PV energy courses with, at least, one that addresses mini-grid systems. Examples are:
• Solar Energy,
• Electrical Engineering,
• Energy Economics.</td><td>10</td></tr>
<tr><td>6</td><td>Have a computer room with:</td><td>10</td></tr>
</table>

#	To be selected as a Training Centre, an institution should be:	Score (%)
	• at least 20 working laptop or desktop computers each having a minimum of dual-core processors[2], • an internet connection with a minimum speed of 50 megabits per second per computer to facilitate access to online courses, and • a backup electricity installation. • Confirmation that trainers have access to computers and web research as necessary.	
	Total	**100**

The criteria to be used in selecting the Examination Centres are presented in Table 2 below:

Table 2: Criteria for Selecting institutions as Examination Centres

<table>
<tr><th>#</th><th>To be selected as an Examination Centre, an institution should:</th><th>Score (%)</th></tr>
<tr><td>1</td><td>Be a public, private, or community higher-level educational institution in an ECOWAS Member State with at least 10 years of experience in developing, implementing, and evaluating training in the energy sector</td><td>10</td></tr>
<tr><td>2</td><td>Have permanent specialized staff with at least a master’s degree in renewable energy/Electrical Engineering/Economics who would provide training or be part of an examination board.
• At least 3 staff with an engineering background of which at least 1 woman,
• At least 1 staff with an economics background.
Having female technical staff is a requirement.</td><td>30</td></tr>
<tr><td>3</td><td>Have, at least, one mini-grid installed in the Centre and 4 kits of Solar Home Systems for the practical session. The minimum components of the mini-grid include:
<table>
<tr><th>#</th><th>Description</th><th>Characteristics</th></tr>
<tr><td>a</td><td>Solar PV field on or ground or roof</td><td>Minimum 10kWc</td></tr>
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<tr><td>c</td><td>DC Box</td><td>Minimum 2</td></tr>
<tr><td>d</td><td>AC Box</td><td>Minimum two</td></tr>
<tr><td>e</td><td>On/Off-Grid Inverter</td><td>10KW - Three-phase 230V/380V</td></tr>
<tr><td>f</td><td>Transformer MT/BT</td><td>1</td></tr>
<tr><td>g</td><td>Small Grid</td><td>1</td></tr>
</table></td><td>30</td></tr>
</table>

[2] The objective is to have computers with processors that are able to multi-task and reduce the time spent waiting for applications to open or updates to occur.

<table>
<tr><th>#</th><th>To be selected as an Examination Centre, an institution should:</th><th>Score (%)</th></tr>
<tr><td></td><td>The composition of 4 kits for Solar Home Systems includes:
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</table></td><td></td></tr>
<tr><td>4</td><td>• Have an examination room with a capacity of at least 50 seats and tables and sufficiently lighted and ventilated.
• Have two or three smaller examination rooms where smaller groups of candidates can take examinations simultaneously.
• Have signage and related health and safety notices correctly placed, and established safety practices.
• Have separate working toilets for women and men.</td><td>10</td></tr>
<tr><td>5</td><td>Have been offering Solar PV Energy Courses, with at least one that addresses mini-grid systems. Examples of the Courses include:
• Solar Energy,
• Electrical Engineering, and
• Energy Economics.</td><td>10</td></tr>
<tr><td>6</td><td>Have a computer room with:
• at least 20 working laptop or desktop computers, each having a minimum of dual-core processors,
• an internet connection with a minimum speed of 50 megabits per second per computer to facilitate the conduct of examinations, and
• a backup electricity installation.</td><td>10</td></tr>
<tr><td></td><td>Total</td><td>100</td></tr>
</table>

Shortlisting, Selection, and Training

Institutions that obtain a minimum of 70% of the total scores will be shortlisted. ECREEE will arrange visits to the shortlisted institutions in collaboration with a pre-identified National

Focal Institution of the Regional Certification System. ECREEE will sign Memoranda of Understanding with the selected Institutions. Following this, a regional gender-responsive Training-of-Trainers course will be organized for the staff of the institutions selected as Training and Examination Centres.

Application Instructions

Institutions wishing to be considered as Examination or Training Centres are invited to submit their Expressions of Interest through warep@ecreee.org **only,** indicating the subject **either "TRAINING CENTRE" or "EXAMINATION CENTRE".** The deadline is **November 1, 2022** (**23:59 hrs (GMT)**.

Please note that in line with international standards, an institution IS NOT PERMITTED to submit EOIs for both an Examination centre and a Training Centre. In other words, ECREEE will ONLY ACCEPT ONE application from an institution.

Further information/clarification can be obtained between 10 hrs and 16:00 hrs GMT at the following email addresses: adeoliveira@ecreee.org and jbulgo@ecreee.org. Institutions are advised **not to copy these two email addresses** when submitting their applications. Failure to adhere to this instruction will result in their disqualification.

"Disclaimer: This document has been translated into French and Portuguese to reach a wider audience. While reasonable efforts were made to provide accurate translations, portions may be incorrect. ECREEE assumes no liability for any errors, omissions, or ambiguities in the French and Portuguese translations. The English version remains the original and final version for reference."