

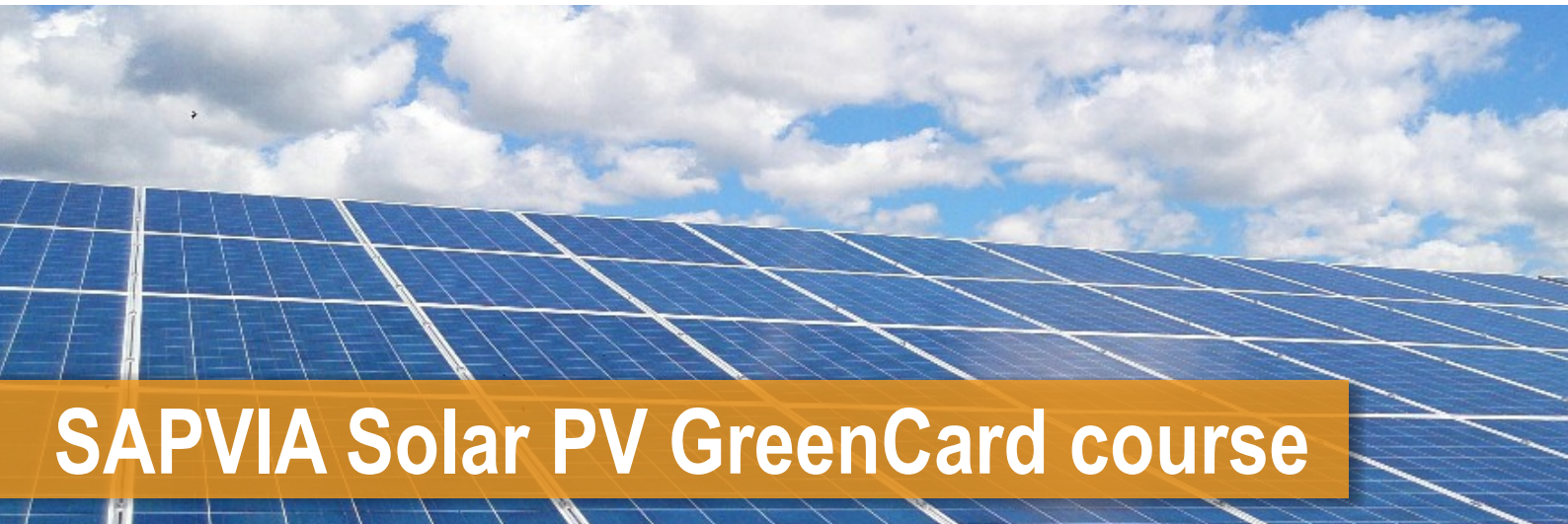


# Training and Certification of Energy Professionals in Sub-Saharan Africa



**SOLAR**  
TRAINING CENTER SA

**sae**e  
Southern African Energy Efficiency  
CONFEDERATION



## SAPVIA Solar PV GreenCard course

ECOSA accredited, SAPVIA and AEE endorsed, aligned to the SAQA Occupational Certificate: Solar PV Service Technician.

The SAPVIA Solar PV GreenCard (PVGreen) Course is structured to accommodate a variety of levels of experience, from beginner and ending at the end of the week with practically installing a solar PV system. The course is brought to you by the North West University's Solar Training Center and hosted by the Energy Training Foundation (EnTF) at selected venues.

Over the five days candidates will be familiarized with the fundamental principles (solar irradiation, annual yield, effects of shading etc.), and typical components of Solar PV systems (PV panels, inverters, batteries, mounting structures etc.), followed by the design and system integration and practical installation and commissioning of systems by using a small scale solar set-up at the training venue.

The course is SAPVIA endorsed and candidates that attend the training may apply to complete the required assessments for evaluation towards SAPVIA endorsed installers status and could be listed on the PV GreenCard database. The PV GreenCard is an industry led quality label that is inclusive in nature and becomes the key to ensure a high standard of quality for small-scale Solar PV installations. The PV GreenCard is set to become a national, standardised hand-over or "as built" report for roof-top PV installations, aimed at improving the safety and quality of installations. It will provide comprehensive documentation of the PV system including information on used components and personal data of the owner, and will be a voluntary service from the installer which will serve as a guideline to both the installer and the customer on how to secure a high standard of PV system operation.

In addition, the training is aligned to the SAQA national qualification PV Service Technician for persons wishing to pursue the completion of a Portfolio of Evidence (PoE). A Solar Photovoltaic Installer liaises with clients, conducts a site visit, obtains and analyses data, designs or customises or compiles a PV system, selects the appropriate components, installs, commissions and tests a PV system for functionality.

### TRAINING PROGRAMME OUTLINE

#### DAY 1 - INTRODUCTION TO SOLAR PV

Entry level required: Anyone can attend. Will receive 1 CPD point.

Electrical basics, characteristics of solar energy, different types of solar systems, and how to differentiate between them; different PV modules, inverters, chargers, batteries and roof mounting structures. Site visit checklist and relevant quality certification for PV solar components.

#### DAY 2 & 3 - DESIGN AND SYSTEM INTEGRATION OF PV SOLAR

Entry level required: Introduction to solar PV. Will receive 2 CPD points.

Integration of different Solar PV components, interpretation of datasheets, types of solar PV systems, single line diagrams, design and calculations for solar PV systems, understand Municipal/Eskom's requirements and processes for solar PV, latest SANS 10142-1-X requirements for embedded generation and software simulations.

#### DAY 4 & 5 – PRACTICAL INSTALLATION AND COMMISSIONING OF SYSTEMS

Entry level required: Introduction, Design and System integration of solar PV. Will receive 1.5 CPD points. Delegates attending all 5 days will receive a certificate of successful completion of SAPVIA PV GreenCard training.

Preparation and planning of installation, practically install solar PV components, testing and commissioning of systems, document and evaluate installation.

### COURSE OUTCOME

At the end of the training the candidates should be able to:

- Explain the basics of electricity related to PV
- Appreciate various applications of solar PV
- Describe the different configurations for module Interconnection

- Go for PV GreenCard Assessment to become an SAPVIA endorsed installer
- Plan and prepare for PV system installation
- Install mechanical components of Solar PV Systems
- Install electrical components of Solar PV Systems
- Maintain, test and replace PV panel components

## DELEGATE PROFILE

- Electricians,
- Engineers,
- PV solar experts,
- Technicians,
- students, etc

## BASIC SKILLS REQUIRED

The PV GreenCard training course is at a level which assumes the delegate has basic problem-solving skills. A NQF Level 4 in mathematics with good command of the English language, including the ability to use basic algebra and to set up problem solution expressions and calculations from a written problem statement.

## RECOGNITION

Trainees who successfully pass the SAPVIA PV GreenCard training will be eligible to become SAPVIA endorsed installers and can be listed on the PV GreenCard database (<https://www.pvgreencard.co.za/>).

### Engineering Council of South Africa (ECSA)

4.5 Continuing Professional Development (CPD) credits for ECSA registration for attending the full training course.

### South African Photovoltaic Industry Association (SAPVIA)

Certificate of completion for PV GreenCard Assessment.

### Association of Energy Engineers (AEE)

7 credits for Continuing Professional Competency (CPC) demonstration to re-certify on a relevant AEE certification program.

### Attendance Certificate

Attendance certificate will be issued to all delegates that attend the full duration of the training course (85% or higher attendance required).

### \* Terms and Conditions

1. First paid first served policy applies for booking security
2. Booking security requires the following to be received six (6) working days prior to the commencement of the course:
  - a. Full payment cleared in bank with proof of payment supplied.
  - b. A deposit of 25% with proof of payment supplied.
  - c. A purchase order for the full amount of the invoice.
3. Fees include coffee/tea/juice on arrival, mid-morning coffee/tea with pastries, mid-afternoon coffee/tea with biscuits, and lunch. For training the fee includes the black and white text books, course fee and one year membership of

the SAEEC. For examinations the fee includes the examination fee, marking fee, certification application fee, and 1 year membership of AEE for first certifications.

4. It is the responsibility of the candidate attending the course to arrange their own travel, accommodation, breakfast and dinner.
5. Policy on international candidates
  - a. Invoices exclude withholding and country-specific taxes. Should these be leveraged by your country government, we reserve the right to invoice the responsible entity/person to recoup the costs.
  - b. VAT is payable for candidates attending training in South African borders, this may be claimed on

## COSTS\*

**1 Day Course fee:**  
(Monday)  
**Solar PV Introduction Course**  
**R 2 700-00 (excl VAT)**

**3 Day Course fee:**  
(Monday - Wednesday)  
**Solar PV Introduction, Design and Integration combined course**  
**R 5 700-00 (excl VAT)**

**5 Day Course fee:**  
(Monday - Friday)  
**Solar PV GreenCard Installers course**  
**R 8 700-00 (excl VAT)**

**Course fee includes:** 1, or 3, or 5 day training course, attendance certificate, black and white manual, one year SAEEC membership, lunch, tea and coffees.

Additional fees are applicable on application to complete the assessment towards SAPVIA GreenCard Installers Database and the QCTO qualifications of Solar PV Service Technician.

## BOOKINGS

Book online at [www.energytrainingfoundation.co.za](http://www.energytrainingfoundation.co.za) for your training. You will receive confirmation from the Training Administrator with all the necessary arrangements and information.



6. Policy on cancellations
  - a. Cancellations received within five (5) working days prior to the first day of training will carry a 25% cancellation fee. No course material will be supplied. For examinations a rescheduled fee of R650.00 will be leveraged.
  - b. Cancellations received six (6) working days prior to the first day of training will receive a full refund.
7. Policy on accounts not in good standing
  - a. The candidate in attendance at the course ultimately remains responsible for payment of the outstanding account and providing the proof of payment thereof.
  - b. In the event that a candidate, or the candidate's organisation is not in good standing with us we reserve the right to withhold:
    - Certificates of Attendance
    - Course Attendance Registers
    - Issuing of ECSA CPD credits
    - Examination Results
    - AEE Certification Application and/or Renewal Submissions
    - AEE Certification Certificates
    - Listing on the AEE website
8. The Energy Training Foundation (EnTF) is a division of Energy Cybernetics (Pty) Ltd, an EOH company, and the invoice will be made out by Energy Cybernetics.
9. Proforma invoices will be supplied, Tax Invoices will be raised on request but these are payable within 30 days of issue.
10. Right of Admission Reserved.

## About the Energy Training Foundation

The EnTF offers tailor-made training courses to fulfil the energy training needs of the industrial, commercial, mining, government, utility, building sector of Africa. EnTF is the sole approved training partner of the AEE for the Southern African region and Indian Ocean Islands, the training partner of the SAEEC and the AEPEA, is an EWSETA accredited training provider, with course accreditation for CPD registration requirements with ECSA.

Programs offered by EnTF include customised training programs, mentorship and stipend management programs, locally developed training and internationally accredited certification programs. The most popular: Certified Energy Manager (CEM), Certified Energy Auditor (CEA), Certified Measurement and Verification Professional (CMVP), Certified Water Efficiency Professional (CWEP), Certified Renewable Energy Professional (REP), Certified Business Energy Professional (BEP), Certified Carbon Reduction Manager (CRM), Fundamentals of Energy Management (FEMT), Basic Principles of Energy (BPE), Measurement and Verification Standard Training (MVST), Nelson Mandela University PV Technologies short learning program (PVTECH), UNIDO end user and expert level training, Solar PV Installer GreenCard training.

Energy Training Foundation is a division of Energy Cybernetics (Pty) Ltd, an EOH company.

For more information: • [info@entf.co.za](mailto:info@entf.co.za) • 084 622 4770/084 011 5500 • [www.entf.co.za](http://www.entf.co.za)