

# Renewable Energy Technologies for TVET - PV

## Course 2: PV Designing of Off-Grid PV Systems for Teachers and Trainers

### TOPICAL AREA: Green TVET

In this module teachers and trainers will get introduced in the use of yield prevision tools for deploying electrical energy via photovoltaics (PV). Finally, competencies in dimensioning off-grid PV systems are promoted for TVET.

- **Content, elements, format and duration can be customized to the respective needs**

#### LEARNING OUTCOMES

On completion of the training, participants are able to

- apply online services for yield estimations
- teach calculation of life cycles of lead acid batteries
- train to design application-based off-grid PV systems
- design systems according to customers need
- dimension PV systems economically
- predict battery replacement cycles

#### CONTENTS

- Introduction into the used LMS system
- Off-grid calculation
- DC-/AC-coupling
- Economic optimization
- Online services and databases for PV
- Battery lifetime
- Replacement cycles

#### FORMATS

The training is designed to be provided in an e-learning format. Main didactical elements are:

- 1 week self-study e-learning in pairs
- Support through online sessions and forums

#### LANGUAGE

- English
- German
- Upon request: other languages with interpreters

#### TARGET GROUPS

- TVET teachers and trainers who are going to train PV (max. 14 p/ course)

#### PARTICIPATION REQUIREMENTS

- Fundamental skills in electrical engineering
- Basic knowledge on PV cells, parameters and system behaviour of cells
- Basic PC and internet knowledge

#### DURATION

- 1 Week ~20 hours/week self organized learning time in pairs
- 3 Online sessions (45 min each)
- 2 Guided forum times (1 h each)

#### EQUIPMENT

- PC/Notebooks (Win 10)
- Current web browser
- Online sessions: Fast internet connection

#### CERTIFICATE

The participants will receive a certificate of participation after completion of the course.

#### YOUR CONTACT

##### TVET Academy

Academy for International Cooperation  
Deutsche Gesellschaft für Internationale  
Zusammenarbeit (GIZ) GmbH

E [tvvet-academy@giz.de](mailto:tvvet-academy@giz.de)

I [www.giz.de/tvvet-academy](http://www.giz.de/tvvet-academy)