



Training Concepts for the Use of Renewable Energies

Didactic Solutions for Africa

Project Objective:

Self-sufficient electricity supply – PV solutions from small units to entire villages

The Christiani Training Concept:

Activity-based lessons teach both the basic theoretical knowledge of photovoltaics as well as the manual skills for building reliable power supplies, from small up to large electrical power systems. The development of global solar energy usage will also serve climate protection.

Key Words

- ✔ Professional training
- ✔ Training concepts, hands-on learning
- ✔ Basics of electrics and photovoltaics
- ✔ Use of renewable energies, solar power and PV
- ✔ Improve electricity supply in remote areas
- ✔ Self-sufficient electricity supply small and big scale
- ✔ Training of teachers / multipliers
- ✔ Construction of solar supply units
- ✔ Didactics and teaching manuals available in English and French



1. Example: The Solar Work Case

In order to teach basic electrical engineering knowledge and the fundamentals of photovoltaics, the course participants mount the didactically prepared kits of the Solar Work Case and therefore create small scaled solar power units in a two-week training course. The participants will be able to build other small power supply units on their own using the available construction kits.

The entire training concept is ideally suited to qualify teachers to serve as multipliers for the transfer of knowledge and skills in the construction of solar energy supply units. At the same time, the Solar Work Case offers teachers a practical teaching and experimentation laboratory for teaching the basics of electrical engineering.

The teaching materials „Basics of Electrical Engineering for the Use of Renewable Energies“ are offered as a book or digitally. The didactic concept consists of teaching materials to convey the theoretical basics, as well as tasks and exercises and the corresponding solutions. On the one hand, the teaching concept enables professional qualification and, on the other hand, promotes self-learning processes, which can be made through practical hands-on experience using the construction kits.

Article	Order-No.
Basics of Electrical Engineering for the Use of Renewable Energies Teaching Materials + Educational Concept	100861
More information at: christiani-international.com/100861	



2. Example: A self-sufficient village power supply

Frequently, the desire for a larger power supply system up to a self-sufficient village power supply arises from the self-sufficient photovoltaic power supply through the solar work case. The necessary expertise can be provided with the teaching material „Solar power supply with battery storage in the AC grid with programmable energy management system in various applications“.

The didactic material, consisting of an information, exercise and solution section, provides all energy and safety-relevant content for the construction of three-phase power supply systems with 230/400 V.

The didactic material is also offered as an action-oriented pedagogical concept. The material required for the exemplary construction of such a power supply system is also available as a construction kit. With this, a self-sufficient solar power system of different sizes (from 7.5 kW up to 45 kW) can be built and operated within the framework of a professional qualification of skilled workers based on the course contents. This can provide electricity for an entire village.