

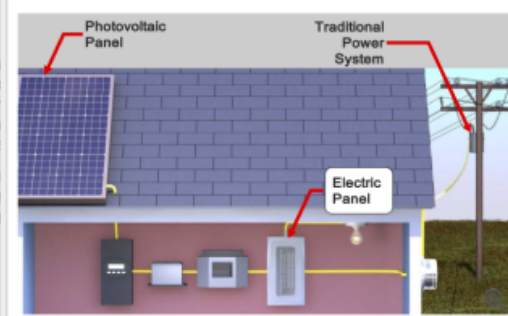
# Solar Concepts eLearning | Basic Concepts in Solar Energy & Technology

Introduction to Photovoltaic Systems - WX20016-XA01XEN-E1

Objective 2: Describe Three Categories of Solar Energy Technologies

Solar Energy Categories

Photovoltaic Branch Part 1 of 2



Solar energy has many types of technology. Some types of technology use energy costs by water, and some use living areas. The

✓ Photovoltaic Solar Thermal Solar Arch

A photovoltaic (PV) system collects solar radiation from the sun and converts it directly into DC (direct current) electricity. The PV system collects the solar radiation using a solar panel made from a special material that, when exposed to sunlight, creates a small electrical charge.

The DC electricity can be used immediately or stored in batteries for future use. It can also be converted to AC (alternating current) electricity and connected to a facility's traditional power system.

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## eLearning Course: M20016

Solar Concepts eLearning introduces a broad range of basic concepts in solar energy and technology, including photovoltaic and thermal solar systems. Learners explore how to translate location, sun, and technology into practical applications. Covers types of solar energy systems, AC & DC photovoltaic systems, solar industry overview, passive and active water heating, space heating and cooling, solar irradiance, peak sun, global positioning, solar time, sun path, array orientation and insolation data.

## Teach Alternative Energy

### What is Solar Energy?

Solar energy is energy generated by the sun's radiation. The sun's radiation is created by the intense pressure and heat at its core, which creates a nuclear reaction called fusion. As the fusion process converts hydrogen into helium, it releases enormous amounts of energy in the process. This energy, in the form of radiant light and heat, escapes from the surface of the sun and radiates in all directions. It travels through space and strikes the Earth and other bodies.

Solar energy is the most abundant source of energy on Earth. The amount of solar energy striking the Earth's atmosphere is approximately 1,366 watts per square meter. However, only a portion of this energy reaches the Earth's surface because it is diffused, or scattered, as it passes through the atmosphere.

## Multimedia

### Solar Concepts eLearning Features Engaging, Interactive Multimedia

Amatrol's extensive, thorough [multimedia](#) covers green energy themes such as solar concepts. Interactive screens paired with instructive graphics teach an array of solar concepts topics from sun path characteristics to solar panel orientation. With the optional hardware, learners can then apply this theoretical knowledge to immediate hands-on skills. For example, learners study how to determine solar irradiance and then on their own calculate solar irradiance using air mass for applied practice. This combination of theory and practice ingrains concepts in a

learner's mind and makes more advanced topics easier to comprehend. (References [950-SC1](#))

## **Additional Info**

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### **Requirements:**

- Computer (See [Computer Requirements](#))

### **Referenced Equipment:**

- Solar Concepts Learning System ([950-SC1](#))
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#### **Address**

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