Name of research institute or organization:

PV-Labor der Berner Fachhochschule Technik und Informatik BFH-TI

Title of project:

PV production in high alpine sites

Project leader and team:

Prof. Urs Muntwyler, project leader
PD Dr. Eva Schüpbach (deputy project leader after 1.1. 2014)

Project description:

The energy production of the high alpine site Jungfraujoch was continued in 2013.

In 2013 the comparison with other high alpine sites in the Alps, extending to southern France (Plateau de Valensole) and other sites, has started. Calculations show that high alpine PV-sites can replace the solar production in northern Africa and southern Europe. This is possible due to the fast progress in the PV-technology and the strong decline of the production costs.

The study of new sites with existing infrastructure such as cable cars, dams, avalanche barriers etc. is completed. A new site on an avalanche barrier in Bellwald started in 2013.

The calculations and discussions on a new PV-plant at Jungfraujoch with new high efficiency solar cells and a high efficiency inverter resulted in a clear plan. The site will not be mounted on the roof and the facade. Due to the problems with snow and ice on the roof, the results of such an installation would not be very valuable. We rather concentrate ourselves on a new installation on the facade with two directions and a new high performance inverter from Switzerland.

A new data measurement and acquisition system is currently being developed.

Key words:

PV production at high alpine sites, stability of PV production at high alpine sites

Internet data bases:

http://pvtest.ch

Collaborating partners/networks:

Studiengesellschaft Mont Soleil/ Brenet/ SUPSI/ KWO

Scientific publications and public outreach 2013:

Conference papers

Muntwyler U. et. al., Has Europe a need for solar plants in Africa?, Proceedings 8th International Conference and Exhibitions on Ecological Vehicles and Renewable Energies, Grimaldi Forum, Monaco, March, 2013.

Muntwyler U. et. al., Does Europe need solar plants in the Sahara?, Proceedings 28th EUPVSEC 2013 conference, Paris, France, September, 2013.

Theses

Bachelor thesis 2013 (4 students): Autonome PV-Anlage zur Messung von Ertrags- und Einstrahlungsmessungen am Walensee / Hochalpine PV-Anlagen / ev. Freiflächen-Anlagen.
Master thesis 2013/ 2014: David Joss: “Data acquisition systems for PV-longterm measurement”.

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