In the context of the Swiss Energy Strategy 2050, PV will be the most important new electricity source (12 TWh in 2050). All aspects associated with cost / production ratio, safety and reliability of PV installations are hence of utmost importance. A unique monitoring network offers the chance to address the above issues.

**PV Monitoring Network**

The Photovoltaic Laboratory (PV LAB) at Bern University of Applied Sciences (BFH) in Switzerland has conducted field monitoring of PV installations for decades (Table 1).

**Table 1: Specifications of the PV-installation sites in the monitoring network.**

In contrast, energy yields in the Swiss Basin are characterised by a maximum in summer and low levels in winter (see below).

**Long-Term Energy Yields (1994-2013)**

One of the PV-installations is at Jungfraujoch in the Swiss Alps. Due to the high solar irradiation and albedo of the glacier in front of the generator, the energy yields are nearly constant throughout the year.

**Future Efforts**

Research and development within the SCCER (Swiss Competence Center for Energy Research) in the coming years will concentrate on:

(i) modernizing the technology and monitoring system
(ii) setting up automated quality control procedures
(iii) comprehensive data analysis
(iv) energy yields at high altitudes
(v) long-term energy yields in winter

The efforts are expected to provide valuable information for researchers, practitioners, insurance companies and the government in view of implementing the Energy Strategy 2050 in Switzerland.

**PV Installation at Gfeller Burgdorf**

Sunpower modules mounted at Jungfraujoch in 2014 allowing for a comparative study of new technology and equipment older than 20 years at high altitudes.

**Further Information**

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