On behalf of:



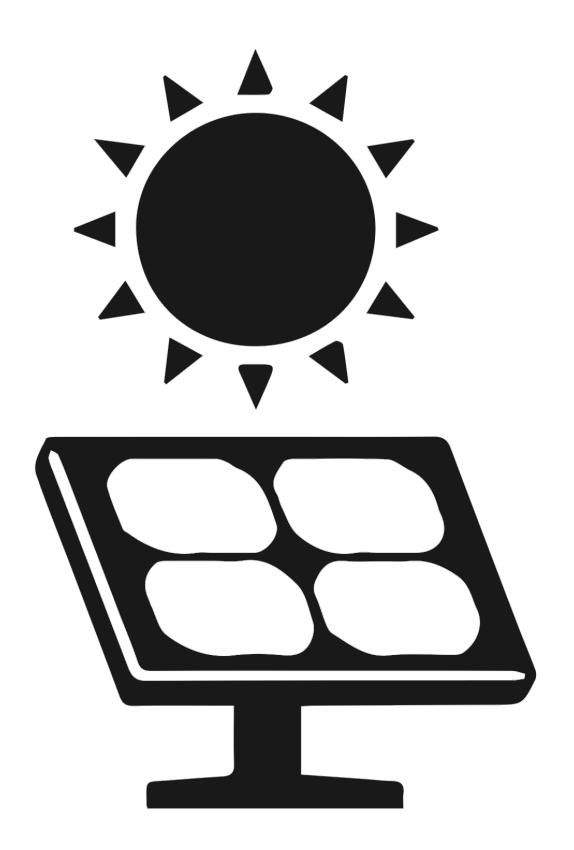


## Initial Situation

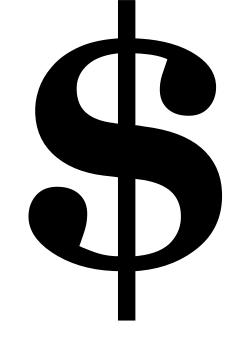
Currently, solar energy is not optimally used for the production of electricity at the FHNW Campus Brugg-Windisch. There are, however, many potential areas on the Campus which are suitable for solar energy. For example, photovoltaic modules could be installed on the platform roofs of the buildings. As a basis for a future implementation, the solar potential of the campus and the best solutions for photovoltaic arrays need to be evaluated.

## Aims & Methods

The aim is to determine the photovoltaic potential for different solutions in a feasibility study covering technical, financial and maintenance aspects. For the analysis, it is assumed that the produced electricity will be used directly at the Campus, and this will reduce external energy costs. All the aspects will be assessed in a cost-benefit analysis. Finally, the project team will publish the results and propose a best solution for a photovoltaic facility.



Photovoltaic potential ≅ 797'000 kWh/a



Lifetime benefit ≅ CHF 1'452'000

## Recommendations



Layout plan buildings, carport and new pergola at the FHNW Campus Brugg-Windisch

Potential building 1: 124'900 kWh/a Potential building 2: 203'600 kWh/a Potential building 3: 62'000 kWh/a Potential building 5: 159'900 kWh/a Potential building 6: 214'500 kWh/a Potential carport: 42'000 kWh/a Potential pergola: 17'500 kWh/a

The project team calculated several costs, i.e. for the energy production and maintenance for 15 different variations of photovoltaic arrays. The assessement of the various solutions resulted in photovoltaic arrays on the rooftop of buildings 1, 2, 5 and 6, with 3'664 m2 photovoltaic module in total, as the most effective. This solution actually best meets the requirements of energy production, cost-benefit, stakeholder interests and maintenance. An additional advantage of the photovoltaic facility will be its use for research and formation. The project team recommend FHNW to install PVarrays on all the platform roofs, the pergola and the carport. In this way the energy production can be maximized.

**Project:** EUT-10093

Fabian Bösiger, Ronny Bühler, Moritz Meier, Patrick Meier, Aline Roth Project team:

Porject coaches: Stefan Roth, Karen Schrader

www.fhnw.ch/campus-brugg-windisch, www.areaag.ch Source pictures: