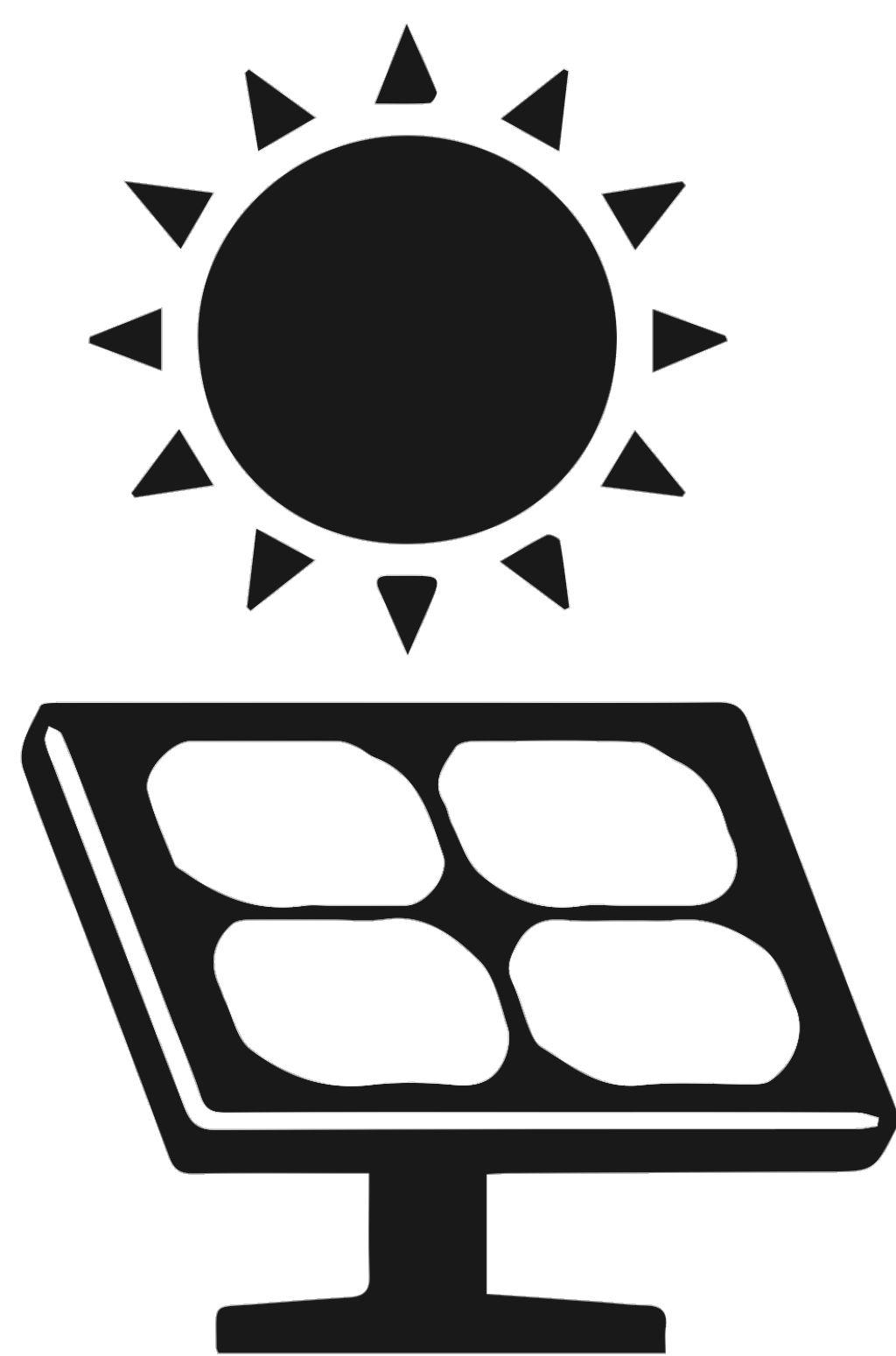


SOLAR ENERGY

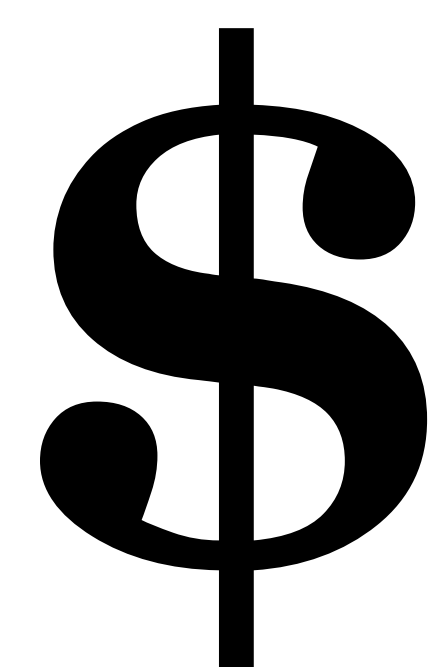
@ the Campus Brugg-Windisch

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.



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 assessment 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 PV-arrays on all the platform roofs, the pergola and the carport. In this way the energy production can be maximized.