Fraunhofer ISE

Fact Sheet

"APV-Resola" Project: Pilot AgroPV System Installed at the Organic Farm "Hofgemeinschaft Heggelbach"

- Total test field area (APV system and reference area): ca. 2.5 hectares
- Dimensions of APV system: 25 m *x* 136 m (ca. 1/3 hectare)
- Spacing distance of support structures: 19 m width, 12 m length
- Interval between the support structures was selected to be several times the width of typical farm machinery; 95 % of the area under the APV array is available for agriculture
- Total height of PV array: 8 m, vertical clearance: 5 m
- In the first two years four different crops are to be tested: wheat, trefoil, potatoes and celeriac.
- Installed power: 194 kWp, sufficient annual electricity to supply 62 households (four people with ca. 4000 kWh annual electricity consumption).
- Foundation uses Spinnanker technology, without any concrete. This technology allows agricultural land use right up to the support structure. Further, the APV field can be disassembled without leaving a trace.
- Bifacial PV modules, which use both the front and rear sides to convert solar energy into electricity, are installed. These modules produce a higher electrical yield per unit area and also contribute to a more homogeneous light distribution under the APV array.
- PV array has a southwest orientation. The distance between the PV module rows is about 60 % greater than conventional ground-mounted PV systems. The array optimally distributes the solar radiation over the farmland, promoting uniform crop growth.
- Fields next to the array are used as a reference in order to analyze the influence of APV array on the crop growth.

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- To optimize the APV business model, the farm is encouraged to use more self-produced electricity. In the long-term, as many energy consumers as possible are to run on electricity, e. g. farm machines operating with diesel shall be substituted with electrically operated machines.
- Surplus electricity from the APV system is fed into the grid of the project partner "Elektrizitätswerke Schönau."

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