reflex
Thinking solutions.

The energy self-sufficient Grabenmeier farm
Ahlen, Germany

Project

- The energy self-sufficient Grabenmeier agricultural farm, Ahlen
- Operated by Winkelmann Land & Forst GmbH & Co. KG
- Date of commissioning: Disconnection from the grid: 11 February 2020

Performance parameter

- 3 photovoltaic systems with 30, 30 and 25 kWp
- CHP unit with 14 kW electrical and 19 kW thermal output
- Battery storage with 135 kWh
- 2 grid-forming inverters, each 42 kW

Task

- The entire farm is energy self-sufficient — no water or electricity from outside. The main energy source is three photovoltaic systems. Excess energy is either stored temporarily in two specially manufactured Reflex storage tanks and/or used for rapeseed oil production in a rapeseed mill. The electricity is also used by heating elements for hot water preparation and backup heating. In case of a shortage of solar energy (e.g. in winter), backup is provided by a CHP unit, which is operated with self-harvested and pressed rapeseed oil. Since the farm, and with it all its animals and inhabitants, is dependent on a reliable energy supply, the entire system must run faultlessly and redundantly.

Product solution

- Dynamic pressure maintenance
  - Ventilation: **Reflexomat RS 90/1** with **Reflexomat** primary tank **RG 800**
  - Underfloor heating: **Variomat**
- **Servitec 35-T** vacuum spray-tube degassing system
- 2× **Fillset Impuls** make-up fittings
- 2× **Fillsoft** softening systems
- 2× Reflex **Storatherm Heat Combi 20000-S**
- 4× **EFHR 19KW** electro flange heaters

Achieved goals

- Everything from a single source – pressure maintenance, degassing, water make-up, water treatment, and distribution and storage technology, come as a complete system from Reflex and Sinus. This means the products are coordinated with each other, ensuring maximum operational safety and efficiency. State-of-the-art control technology also guarantees monitored and automated operation.

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Reflex Winkelmann GmbH • Gersteinstraße 19 • 59227 Ahlen, Germany • +49 2382 7069-0 • Project-Sales@reflex.de

Learn more at:
www.reflex-winkelmann.com/en