

CASE STUDY

ELHAND Transformatory for the Renewable Energy Sector

CLIENT

ONDE is one of the leading renewable energy (RES) companies in Poland, operating as a general contractor and developer of large-scale wind and solar farms. The company delivers projects comprehensively – from concept and construction to maintenance. ONDE has completed over 400 wind and photovoltaic farms with a total capacity of nearly 5 GW, actively supporting the country's energy transition. Its portfolio of RES development projects exceeds 1.3 GW.

CHALLENGE

ONDE required a compensation reactor in an outdoor enclosure, designed for operation in field conditions on a photovoltaic farm. Due to the cyclic nature of PV system operation, compensation reactors are particularly exposed to harsh environmental conditions. They do not operate continuously – they are activated primarily during periods without sunlight, which increases the risk of water vapor condensation inside the enclosure.

The enclosure design had to ensure both effective heat dissipation and protection of the reactor windings against atmospheric factors such as rain and snow.

SOLUTION

For ONDE, we supplied two ED3K compensation reactors – 545 kVar and 345 kVar. To ensure failure-free operation in a demanding environment, we enclosed them in ELHAND IP34 durable enclosure, equipped with:

- Ventilation grilles with water protection – minimizing moisture and rain infiltration.
- Rodent protection mesh – preventing rodents from entering the interior.
- Anti-condensation heater – eliminating the risk of moisture buildup and corrosion.
- Transport handles – facilitating easy transport and installation.

EFFECTS

The compensation reactors in the Elhand IP34 outdoor enclosure have significantly improved the efficiency of ONDE's photovoltaic farm.

- **Reactive power balancing** – the supplied inductive reactive power compensates for excess capacitive reactive power, stabilizing voltage.
- **Stable voltage** – improved energy quality ensures safer and more efficient system operation.
- **Lower energy losses** – better reactive power compensation increases the efficiency of the PV system.
- **Failure-free operation in harsh conditions** – thanks to the weather-resistant IP34 enclosure.
- **Quick installation** – no civil works required.



REACTORS: ED3K 545 KVAR ORAZ 345 KVAR
PHOTO: ELHAND TRANSFORMATORY



The solution proposed by Elhand turned out to be a perfect fit! We appreciate the well-thought-out design – it truly makes a difference in demanding working conditions and has proven to be highly effective in our investment – the photovoltaic farm. Thanks to this, we have confidence that our system operates reliably and efficiently at all times.

Project Engineer | ONDE