



FFPLUS SUCCESS STORY: BUSINESS EXPERIMENTS

FIXING SHORT-TERM ENERGY TRADING FOR SOLAR POWER GENERATION

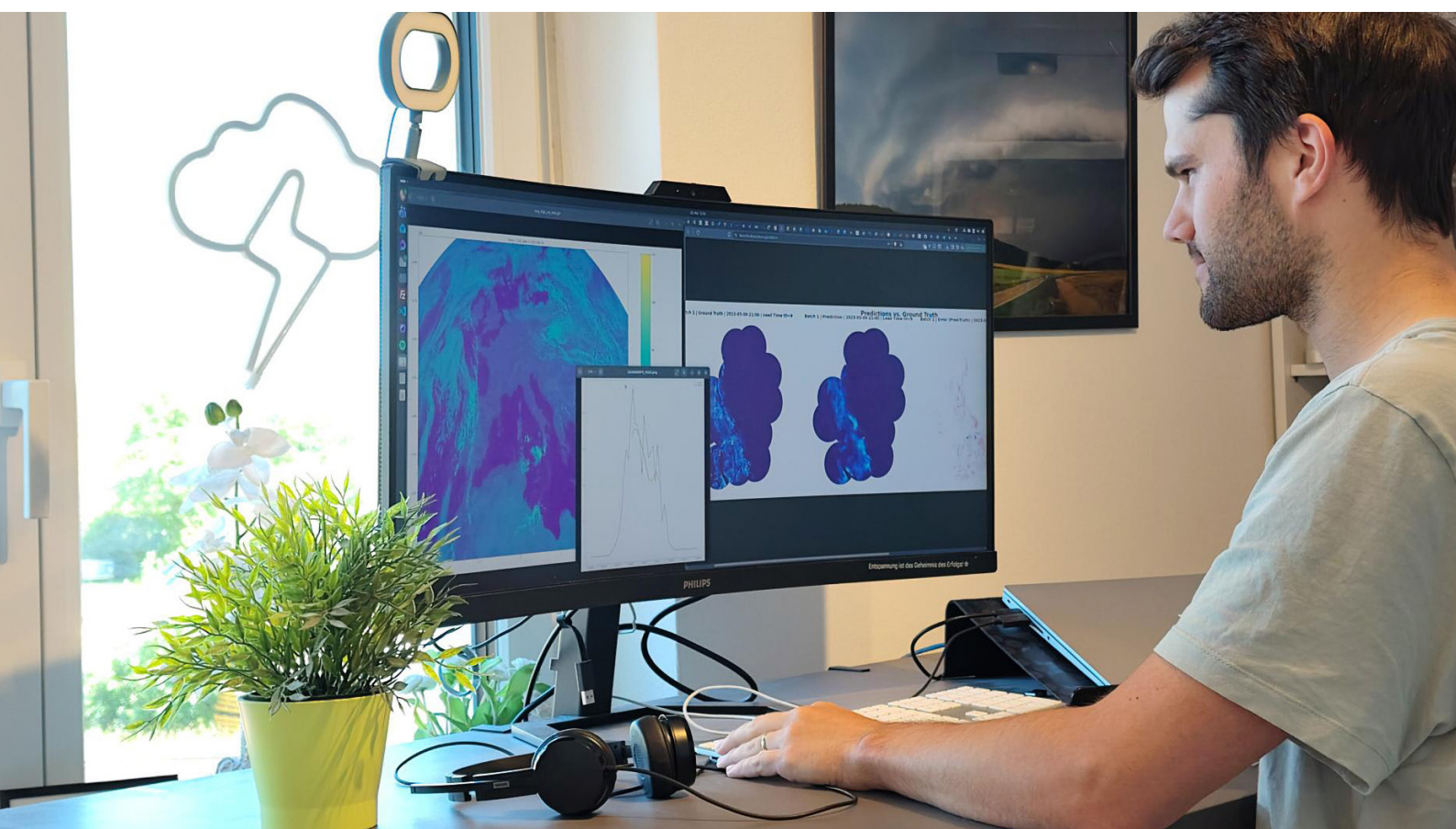
ORGANISATIONS

alitiq GmbH develops and commercialises AI-powered forecasts for renewable-energy markets. **Validation Partners & Utilities** is their domain expert, testing operational and commercial value for energy trading, virtual power plants and grid management. **Ventus Technologies GmbH** provides meteorological modelling, large-scale weather-data processing and forecasting expertise for solution development and evaluation



THE CHALLENGE

Rapid growth in solar power is increasing short-term supply variability. Traders and grid operators must balance 96 quarter-hourly contracts each day, yet conventional weather models struggle to capture fast, local cloud movements two to three hours ahead. alitiq needed to use HPC to train and repeatedly test deep-learning models on multi-terabyte datasets beyond the memory, speed and iteration capacity of its in-house workstations.



Technology used: HPC, AI, ML
Industry Sector: Energy

THE SOLUTION

The team developed NowcastAI, combining live satellite, radar and weather data to predict solar irradiance, convert it into site-specific PV output forecasts and refresh results every 15 minutes. GPU-accelerated HPC on the EuroHPC JU Leonardo Booster processed Zarr datasets and trained neural networks. More than 4,000 compute hours cut each training cycle from 14 days on standard workstations to about 12 hours, enabling rapid comparison, testing and refinement of model variants.

THE IMPACT

NowcastAI gives alitiq a higher-value intraday forecasting service, extending its portfolio beyond day-ahead products. Better benchmark performance is expected to raise customer trial wins from 4 in 10 to 7-8 in 10. Within 24 months, alitiq projects management of 2,500 MWp of solar capacity and €500,000 in annual recurring revenue, recovering the €200,000 development investment in about five months. For a 1,000 MWp portfolio, a 10% forecast-error reduction could lower annual imbalance costs by around €275,000.

The service is expected to secure two technical roles by 2028 and support five operational roles by 2030. More accurate forecasts can also reduce solar curtailment and reliance on fossil-fuel peaker plants, supporting a more efficient, lower-carbon grid. GPU-accelerated HPC was essential because multi-terabyte data volumes, memory demand and repeated model iterations exceeded in-house workstations. Reducing training from 14 days to 12 hours made extensive testing commercially practical within the project timeframe.

BENEFITS

- 28x faster training: using GPUs cuts each model cycle from 14 days to 12 hours.
- Trial win rate expected to rise from 4 in 10 to 7-8 in 10.
- €500,000 projected ARR from managing 2,500 MWp within 24 months.
- €275,000 potential annual saving for a 1,000 MWp solar portfolio.
- Two technical roles by 2028 and five operational roles by 2030.



Funded by
the European Union



EuroHPC
Joint Undertaking