

BUSINESS FIELD

# ENERGY METEOROLOGY SYSTEMS



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## TECHNICAL INFORMATIONS AT A GLANCE

- FORECASTS:**

  - FOR GENERATION AND CONSUMPTION: Individual plants, parks, portfolios, grid nodes, transformers, substation, grid areas, countries
  - FOR AMPACITY: Individual circuits, transmission grids, distribution grids
- TEMPORAL RESOLUTION:** Minutes to hours
- FORECAST HORIZON:** Minutes to Days
- DELIVERY:** SFTP, web service
- METRICS:** Real-time availability
- INTEGRATION:** On-Premises, SaaS



### FORECASTS FOR A RELIABLE ENERGY SYSTEM

Digitalization, automation and the usage of intelligent algorithms are becoming increasingly important factors for success in the energy industry.

This is particularly true for the integration of renewable energies (RE), for which precise and reliable forecasts of the expected energy production and consumption are indispensable. This can increase efficiency, minimize risks, and save costs.

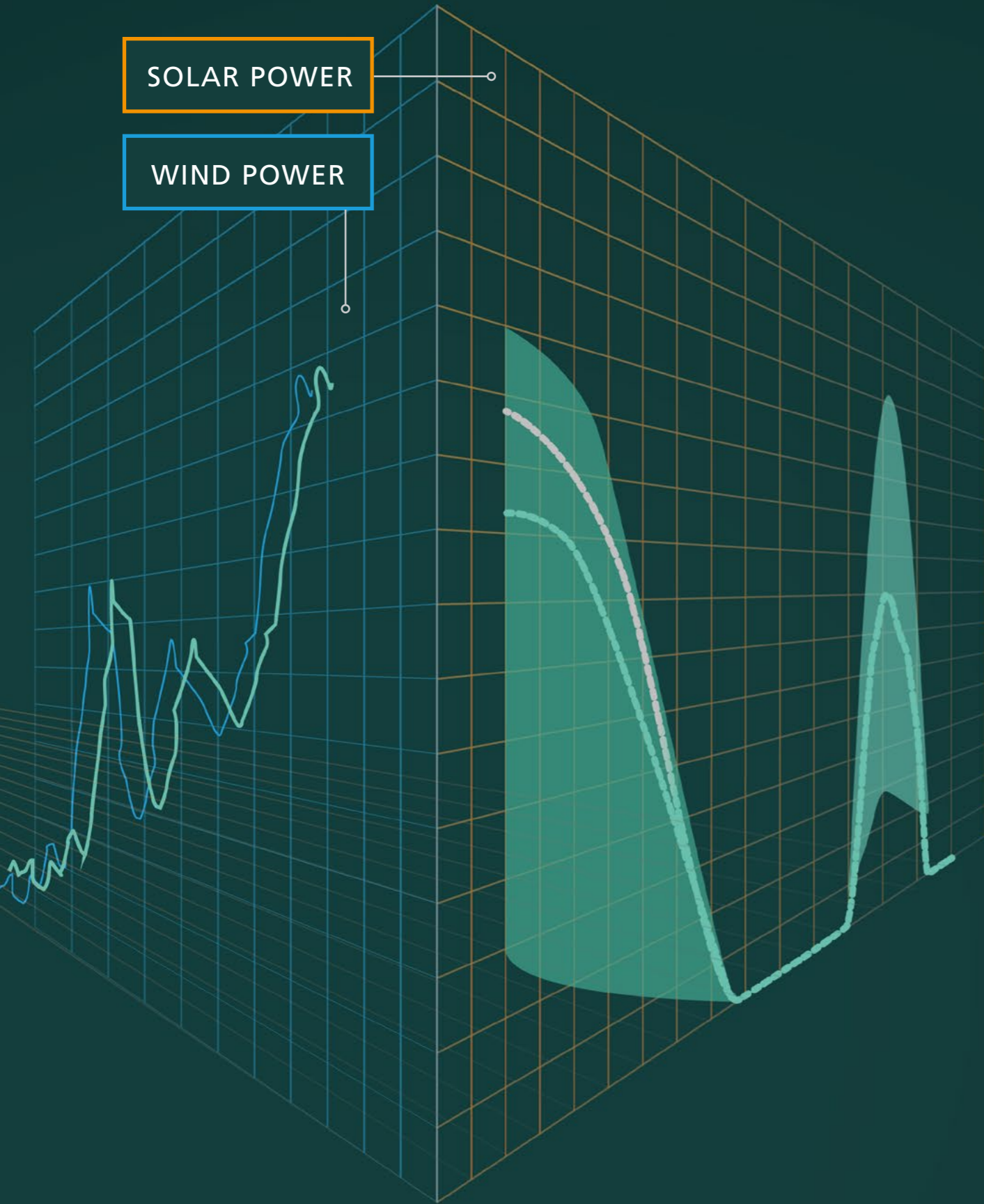
Our real-time power estimates and forecasts are the centerpiece of innovative solutions for reliable grid operation and planning with weather-dependent energy sources.

Get to know our portfolio and let us support you to achieve your goals. As a reliable and innovative partner, we are always prepared to support you.

# FORECASTS TO OPTIMIZE YOUR MARKET INTEGRATION PROCESS AND FOR SAFE GRID OPERATION

SOLAR POWER

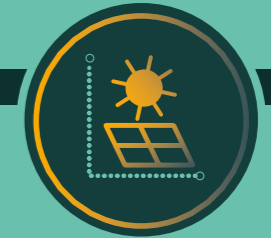
WIND POWER



## WIND POWER FORECAST

Forecasts of the generation of your portfolio of wind turbines for optimal direct marketing and reliable operation of your grid.

- Feed-in forecasts for parks, grid nodes and regions
- Optimal marketing
- Efficient grid operations



## SOLAR POWER FORECAST

- Roof-mounted systems, parks, portfolios
- Grid regions and nodes
- Marketing
- Self consumption

Forecasts for today, tomorrow and beyond. For the optimized operation of your PV systems or your PV storage system as well as your grid.



## HYDROPOWER FORECAST

Forecast of electricity generation from hydropower, for optimal integration of hydropower plants for safe grid operation.

- Run-of-river plants and dams
- Modelling of individual power plants
- Total regional electricity production



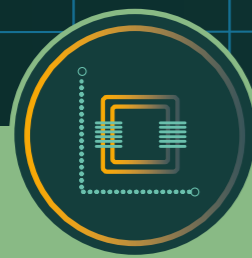
## ONLINE ESTIMATION

- Wind and photovoltaics
- Power and weather measurements,
- Grid areas, grid nodes, portfolios

Current generation of wind power and photovoltaic plants at substations and in grid areas for the safe operation of your grid or to fulfil your information obligations.

BIOMASS

VERTICAL POWER FLOW



### POWER FLOW FORECAST

Forecasts of the load flows on transformers or substations between peak, high, medium and low voltage.

- Vertical and horizontal power flows
- Generation and load shares



### COGENERATION FORECAST

Forecasting the production of your CHP plants for heat and electricity to optimise your use of resources.

- Generation of heat and electricity
- Optimization of resources
- Profit maximization



### DYNAMIC LINE RATING

- Monitoring and forecasting ampacity
- Identification of hot-spots at overhead lines
- Design of specially meteorological measurement stations
- Reducing redispatch and curtailment

Optimized monitoring and forecasting of continuous current carrying capacity to increase network utilization and reduce redispatch or EinsMan activities.



### CONSUMPTION FORECAST

- Electricity, heating, cooling, water
- Households, industry, grid nodes
- Resource planning

Electricity, heating/cooling and water consumption in households, small to large companies and supply grids to reduce consumption and costs.

# Forecasts and Online Estimation for intelligent Markets and Grids

## CONTACT

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## WE OFFER YOU

- Research and development services
- Customized forecasts
- Real-time monitoring
- Analyses and studies
- Independent consulting

## OUR SOLUTIONS

- Forecasts of the expected renewable energies (RE) generation in the next few minutes up to days
- Estimates of the energy generation from spatially distributed renewable energy plants
- Forecasts of the expected electricity, heating/cooling, and water consumption by households, enterprises, and utility networks
- Dynamic methods for the determination and prediction of the possible ampacity of overhead conductors, considering external weather conditions
- Forecasts of the expected power flows within (horizontal) and between (vertical) the different voltage levels in the grid
- Consulting and project planning based on state-of-the-art methods from science and research on the characterization and mapping of energy-meteorology relationships