# RENEWABLE ENERGY TODAY & TOMORROW

THANKS TO INNOVATIVE WEATHER SOLUTIONS



# YOUR CHALLENGES

# OUR SO



INTEGRATION OF FLUCTUATING RENEWABLE ENERGY INTO THE ELECTRICAL POWER GRID





ANTICIPATION OF DEACTIVATIONS AS PART OF FEED-IN MANAGEMENT

### **RENEWABLE ENERGY**

- Highly precise wind, solar and hydropower forecasts
- One-of-a-kind feed-in management solutions
- Long-term feed-in comparisons for wind and solar
- Long-term MCP corrections of wind measurements



FORECASTS FOR ELECTRICITY GENERATED FROM RENEWABLE ENERGY WITHIN DIRECT MARKETING **ACTIVITIES & TRADING** 



PLANNING SAFE MAINTENANCE AND SERVICING WORK



### WEATHER DATA

- Long-term meteorological energy re-analysis data covering many years
- Highly precise weather forecasts (model output statistics)
- Wind, global radiation, precipitation

- High resolution weather analyses in real time (HYDRA)
- Dedicated, highly precise short-term weather model (RACE)



TAKING INTO ACCOUNT OF RENEWABLE ENERGY EXPANSIONS IN THE **GRID DEVELOPMENT** PLAN

## **DLUTIONS**

## YOUR BENEFITS



### WEATHER COCKPIT®

- Highly flexible online representation of weather information
- Live weather data (satellite and radar images, lightning, station data)
- Highly precise weather forecasts for regions and locations
- Hub height wind information
- Customisable work schedule calendar
- Renewable energy and feed-in management forecasts
- Storm and lightning warnings



### STORM WARNINGS AND ALARMS

- Our own severe weather centre will keep you informed 24 hours day, 365 days a year
  Warnings
  - Provided by experienced storm meteorologists
  - With individual threshold values

- Warnings cover all types of storms, sleet, thunderstorms, heavy rain, snowfall
- ISO-certified transmission via e-mail, SMS and the Weather Cockpit<sup>®</sup>



Electrical grid: Optimisation thanks to the deployment of renewable energy forecasts and weather data based overhead power line monitoring



Feed-in management: Real time data and deactivation forecasts



Direct marketing: Minimisation of compensation energy costs thanks to highly precise portfolio forecasts (neuronal networks)



Marketing in compliance with the German Renewable Energies Act (EEG) – optimisation of the EEG allocation account thanks to improved performance forecasts



O&M optimisation – thanks to user enhanced data preparation in the Weather Cockpit®



Grid development plan: Optimum planning basis thanks to comparable long-time series



Precise location and cost effectiveness planning thanks to wind potential analyses



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### **ABOUT UBIMET**

UBIMET is the leading weather service provider of the energy industry and one-stop shop for high-quality data, a proprietary lightning detection network, weather alerts and tailor-made meteorological solutions. The founder-led company with offices on three continents stands for reliable, highly precise weather information and digital information services for weather-dependent companies.

As a global innovation leader, top insurers and energy providers, infrastructure operators, media and sports companies to champions of the new economy place their trust in us. UBIMET offers high-quality meteorological data, forecasts and warnings which enable weather dependent industries around the globe to increase safety and efficiency.

#### www.ubimet.com

To accommodate the high demands of the energy industry, UBIMET offers:

### INDUSTRY-SPECIFIC KNOW-HOW

- A center of excellence with 20 experts focused entirely on the energy sector in Karlsruhe
- 15 years of energy industry know-how and expertise
- R&D spending of 25% of annual revenue on international research projects in the areas of energy & mobility, smart cities as well as disaster management

### HIGH PRECISION METEOROLOGY

- One of the world's largest weather data bases (weather stations, satellites, radar, proprietary lightning detection network)
- Access to the world's leading global weather models (including ECMWF and GFS)
- Self-developed, high resolution weather-analytical tool HYDRA (resolution up to 100 m)\*
- Self-developed, high resolution local weather model RACE (resolution up to 100 m)
- In-house 24/7 severe weather center with experienced meteorologists
- Highly precise wind and solar power production forecasts
- Protected method for feed-in management (EinsMan) and volume forecasts\*\*

### LEADING EDGE IT INFRASTRUCTURE

- Four global data centers processing more than 90 TB of data per day (Big Data)
- Intuitive and state-of-the-art platform solutions with our Weather Cockpit<sup>®</sup>
- Full integration of weather data into customer IT systems via secure data transmission, sFTP-Server and cutting-edge API solutions

\* The invention, on which our solutions is based, has been registered for patent (European patent application No. 17450001.7 as well as US Patent Application No. 15/860.189) by UBIMET.

\*\* The invention was protected as utility model (DE 20 2017 100 343.4) and has been filed for patent (DE 10 2017 101 265.6, European patent application No. 18152474.5 as well as US patent application No. 15/879,326) by UBIMET. The invention was protected as utility model (DE 20 2017 100 343.4) and has been filed for patent (DE 10 2017 101 265.6, European patent application No. 18152474.5 as well as US patent application No. 15/879,326) by UBIMET.

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