

# OVERHEAD LINE MONITORING

## WITH THE UBIMET WEATHER API



The transmission capacity of overhead lines is generally limited by the conductor rope's operating temperature. Current flow within the conductor as well as meteorological conditions such as air temperature, wind and solar radiation.

### OUR SOLUTIONS

#### PINPOINT WEATHER API

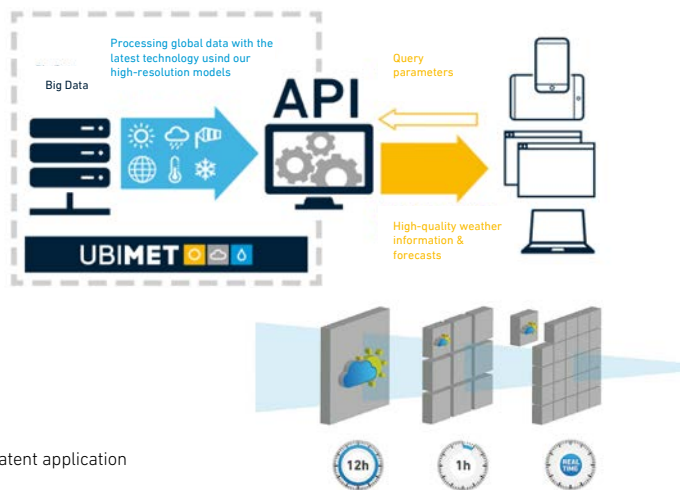
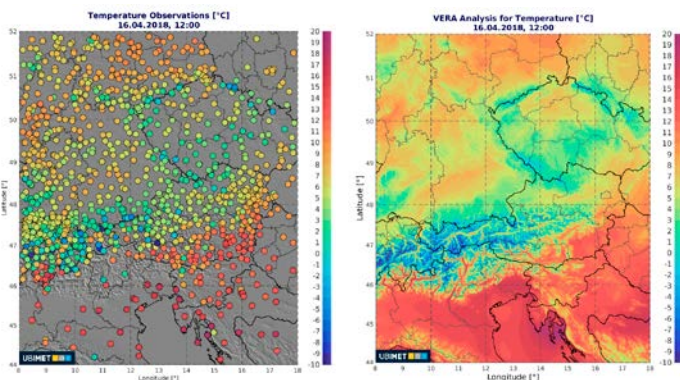
UBIMET's pinpoint weather API has been developed to provide large weather data sets on wind speed, temperature and global radiation in real time including frequent updates for the coming hours.

#### HYDRA – THE HIGHLY PRECISE ANALYTICAL TOOL

To determine weather conditions in a specific geolocation at a particular point in time without weather stations, UBIMET has developed a special analytical process (HYDRA – Hybrid Downscaling & Reanalysis)\*. HYDRA permits to interpolate measurements and readings from irregularly distributed weather stations taking radar and satellite information into consideration as well as topography and land cover on a grid with a horizontal resolution of up to 100 m.

#### UBIMET CONSOLIDATED MODEL

The UBIMET Consolidated Model, a complex weather forecasting model, combines all benefits of our proprietary, high resolution RACE model (Refined Atmospheric Condition Evolution) with the advantages of our HYDRA analysis, the statistically optimised station MOS (Model Output Statistics) forecasts as well as short range forecasts, i.e. short-term spatial extrapolations of precipitation and radiation forecast analysis. In addition, leading global weather model data form part of this multi-modal approach.



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

## YOUR CHALLENGES

The quick growth in renewable energy increases the demand for transmitting electricity to such an extent that power grids cannot keep up. In order to avoid shortages, grid operators need to regularly intervene.

Overhead line monitoring optimises transmission capacities and provides short-term relief. To minimise grid expansion, overhead line monitoring forms an integral part of the German government's grid development plan which foresees its application to the entire power grid.

With overhead line monitoring, transmission capacity may be almost doubled, depending on the temperature, wind speed and radiation.



## ACTION PLAN POWER GRID

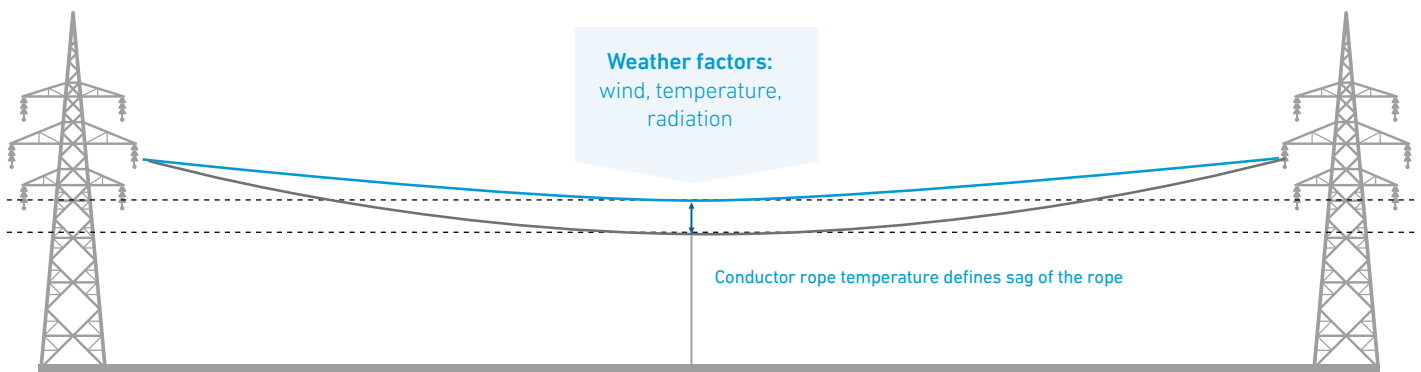
"With new technologies and operating concepts, we need to optimise use of the existing power grid. Currently capacity reserves are not entirely exploited and may be tapped. In the next five years, we can thus achieve tangible progress."

German Ministry of Economic Affairs, Action Power Grid,  
14th August 2018

## YOUR BENEFITS

- ✓ Line-specific weather data along your grid via API
- ✓ Increasing transmission capacity
- ✓ Optimising weather-based overhead line monitoring
- ✓ Short-term reduction of expensive network expansion

Overhead monitoring: minimum ground to line distance needs to be guaranteed



## CONTACT

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## ABOUT UBIMET

From allocations to power plant control to trading – weather matters for the energy business. To meet your high expectations, UBIMET combines high precision meteorology with industry specific expertise. The result: highly innovative solutions, customised for our energy customers' requirements. For more on our energy portfolio, please refer to:

[www.ubimet.com](http://www.ubimet.com)