

# Transmission & Distribution

Transmission System Operators (TSOs) and Distribution System Operators (DSOs) face planning and operational challenges on a daily basis as a result of the weather. To ensure power supply anywhere, anytime, a reliable weather forecast is vital. MeteoGroup provides reliable and accurate weather information tailored to grid operator's needs, thereby enabling clients to efficiently manage fluctuating wind and solar energy generation, optimise the use of available grid capacity and avoid power line congestion.

## Dynamic Line Rating (DLR)

MeteoGroup's product Dynamic Line Rating, provides analysis and forecasts for weather-dependent transport capacity, allowing for better predictions for the early detection of congestion and the optimised utilisation of available grid capacity.

## Hotspot Analysis

Hotspots are sections in the power line with the lowest available capacity at a given time. MeteoGroup has developed a weather-driven power line climate model to detect those hotspots, allowing grid operators to prevent and manage congestion.

## Severe Weather Warnings

MeteoGroup has developed profound expertise in the early detection of adverse weather events, such as storms. Consequently, our grid clients receive specific alerts to the presence of line icing or wet snow, which can cause a shutdown of the power grid.

## Regional Wind & Solar Power Forecasts

Our wind and solar power forecasts are specifically tailored to TSO and DSO regions. The highly accurate forecast data enables grid operators to correctly assess and confidently make decisions with regards to managing power supply and demand in a respective section of the grid.

## Climate Data

Transmission and Distribution System Operators can be confident in their decision making with MeteoGroup's climate data, gathered from 17,000 stations worldwide and our own extensive network of observation stations.

## Bespoke research

Using the most comprehensive datasets available, MeteoGroup's in-house research team is committed to developing sophisticated weather tools, focusing on assessing risks and avoiding critical weather events that disrupt operations. Our ISO certified processes ensure projects result in new technologies, ready to be deployed operationally.

# Dynamic Line Rating: Increased capacity thanks to complex weather analysis

Transmission capacity of overhead power lines is dependent on cooling capacity, which is heavily influenced by the weather. MeteoGroup's Dynamic Line Rating (DLR) enables Transmission and Distribution System Operators to stabilise their systems by avoiding and managing congestion. With DLR we analyse the natural cooling of power lines in various weather situations, providing reliable recommendations to help increase the utilisation of power line capacity.

## Operational Forecast Driven Model

MeteoGroup's Dynamic Line Rating model is the first of its kind to be powered by a dedicated operational weather forecast model. Several years of development has resulted in a model capable of assessing the probability of weather circumstances along the total length of a power line, and translating this probability into relative line capacity.

## Hotspot Analysis

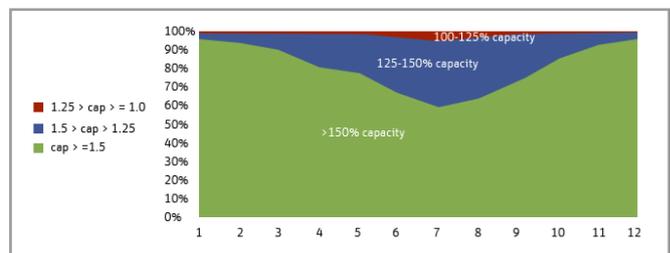
By applying MeteoGroup's Dynamic Line Rating model in historical mode, weather-critical sections in powerlines ("hotspots") can be detected. The identified hotspots are typically the best locations to install weather stations in order to receive reliable local and real-time observations. MeteoGroup assists grid operators in planning the installation and operating of local observation stations, which can also be used to further optimise the results of the DLR model.

## Secure Web Service

Data is delivered via a secure web service, offering unlimited access to data, monitoring and support 24/7/365.

## Consulting

Our international team of more than 150 meteorologists is available 24/7/365 for consultation and support.



Classified capacities per month



Capacity and wind speed (m/s)



Sections of the line identified as having the lowest available capacity

## Contact us

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MeteoGroup is a leading full-service, global weather business. Our team of expert and experienced meteorologists is available 24/7/365, delivering accurate and dependable weather information to weather-critical businesses. Founded in 1986, the company has an unrivalled reputation for quality and innovation in weather forecasting.