



FORTUS

EWC
Hydropower Solutions



FORECASTING FOR:

- Cross-regional and local power providers
- Energy traders (electricity & gas)
- Grid operators (electricity & gas)
- Power plant operators in the renewables sector

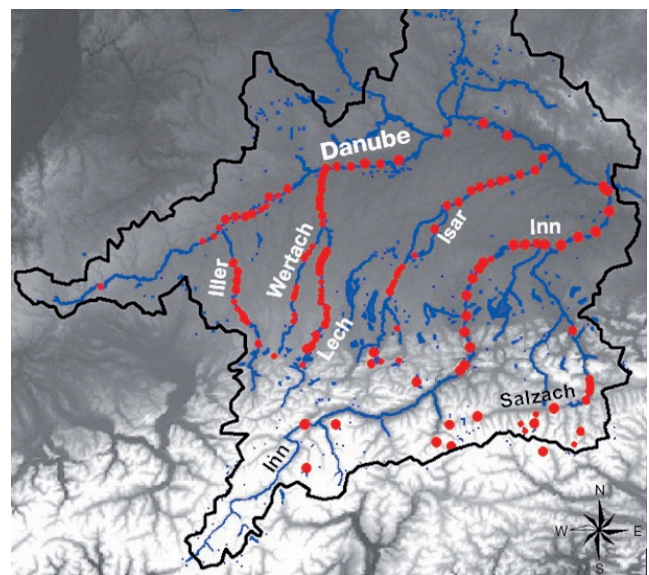
HYDROPOWER FORECAST

Hydrological forecast of the energy production for catchment areas

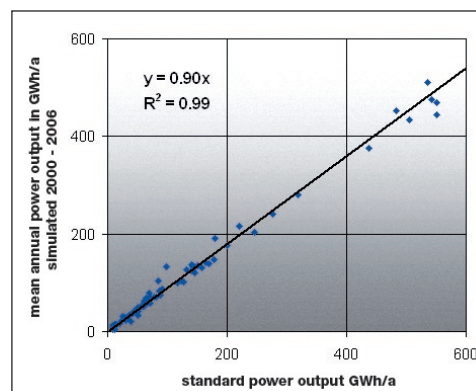
EWC and VISTA's Hydropower Forecast supplies daily forecasts of runoff and related energy production volumes for hydropower plants ≥ 5 MW for up to 10 days. In addition, water temperatures for each river kilometre are available.

Your benefits from the Hydropower Forecast:

- Runoff calculations at hourly intervals; daily forecasts
- All hydro-meteorological data for precipitation and water levels, evaporation and percolation, groundwater retention and runoff
- Highly accurate predictions of water temperature enable excessive cooling water temperatures to be estimated



Daily forecast of the energy production of over 100 hydropower plants in the Upper Danube catchment area



Comparison of generated power and simulated annual power output of a power plant



EWC and VISTA provide the following services:

EWC: Meteorological Database

EWC supplies the relevant weather measurement and forecasting data required for VISTA's "HydroSense" forecast service. This data includes precipitation, air pressure, temperature, humidity, global radiation and sunshine duration data, in addition to historical data for the analysis of model results based on periods in the past.

- Meteorological data are exclusively from official national weather offices operating to WMO standards (World Meteorological Organization)
- Germany-wide hourly readings from over 1,000 weather stations of Deutscher Wetterdienst
- Europe-wide readings from over 2,500 weather stations at 1 – 6-hourly intervals
- Data accuracy is enhanced by the application of an interpolation model

VISTA: Data processing with the full-scale water management model PROMET

VISTA's "HydroSense" forecast system is based on PROMET (Process of Radiation Mass and Energy Transfer), a physics-based, uncalibrated satellite-supported model that simulates the spatial distribution of all terrestrial and atmospheric elements of the water cycle. The realistic raster-based system models open-channel hydraulics, lake retention and reservoir management. Continuous monitoring of the liquid water/snow equivalent – the volume of water stored in the snow – enables the volume of energy stored in the snow cover to be estimated. The system delivers data on groundwater, snow and ice water equivalents, groundwater balance and evaporation (taking vegetation into consideration).

Optional features:

- Runoff calculations can be aggregated over various periods, e.g. as daily, monthly or annual figures
- Forecasts for Renewable Energy Act-compliant power stations of 100 kW and upwards are available on request

EWC Weather Consult GmbH

Enhancing efficiency, making risks calculable and minimising them, saving costs – all these energy market goals can be achieved with the help of EWC's meteorological data solutions and services. We provide high-quality global location- and time-specific forecasts, weather measurement data, simulations and analyses for customers in the energy sector. We cater to our customers' individual needs by offering a range of categories of standard products and custom solutions. For information on our extensive portfolio of products and solutions, visit www.weather-consult.com.



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VISTA Geowissenschaftliche Fernerkundung GmbH

VISTA specialises in the development and application of remote sensing methods for hydrology and agriculture. The company focuses on spatial evaporation and runoff modelling and on calculations of further water balance elements in addition to agricultural yield and harvest forecasting. Founded in 1995, VISTA operates internationally.



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