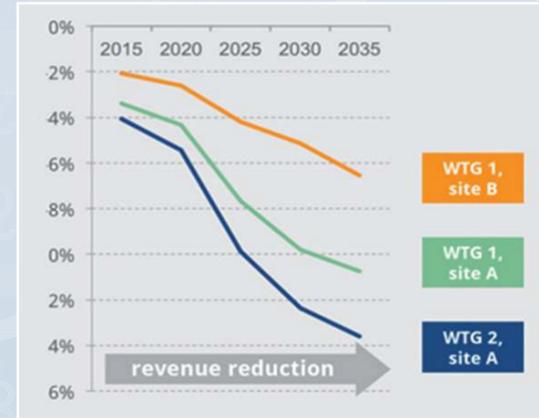


## SITE-SPECIFIC REVENUE REPORT

In addition to the energy yield of a wind farm, power market revenues are increasingly relevant for project evaluation and investment decisions. Our Revenue Report provides important information regarding a project's financial performance beyond the purely energy-focused wind yield report.

A Revenue Report is prepared for a particular wind project. It is site- and technology-specific with a focus on future price developments. The report determines the expected financial revenues of a wind farm as well as revenue differences between different wind turbine types. It also provides an estimate of the revenue reduction in comparison to the forecasted national market value. This difference has to be considered for the determination of a reasonable bid price in a RES auction to avoid financial underperformance of a project.

Power prices are usually high when wind feed-in is low and tend to fall in times of high wind feed-in. Investors who analyse this correlation systematically are able to financially optimise their wind projects: a Revenue Report allows optimisation of revenues by selecting the turbine type with the best market value and the highest return.



The figure illustrates that a revenue report provides the information required for choosing an optimal turbine type (comparison of WTG 1 vs. WTG 2) and a site that provides maximum revenues. Furthermore, the revenue report delivers a forecast for the expected power market revenues of the analysed wind farm.

Online access to the market value atlas and the revenue atlas is provided by the anemos wind information system *awis* through "WEBTOOLS" on [www.anemos.de](http://www.anemos.de).

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## MARKET VALUE



## Who we are

With over 30 years of experience in wind power meteorology anemos as a private independent consulting firm provides its services to wind farm developers, private and institutional investors, financing institutions and public authorities. They all benefit from our longtime experience, research, continuous education and meanwhile more than 3500 expert reports worldwide. We have built an expert team of meteorologists, geographers and technicians as well as the computational infrastructure that allow us to operate complex atmospheric simulation models and statistical analysis. anemos is accredited according to DIN EN ISO/IEC 17025.

Founded 2001 in Berlin, enervis is a specialized consultancy company for the European energy industry with a focus on power markets and especially renewable energies. Our services range from market analysis to the development of market strategies and their implementation as business concepts. For our clients we develop and operate computer-based models and provide support for investment decisions in renewable assets as well as operational business. enervis has comprehensive modelling know-how and experience and works for a wide range of clients in Germany and all over Europe. Core competency of enervis is to provide best-in-class model-based support for strategic decision-making on complex energy markets building on market as well as policy intelligence.



## MARKET VALUE AND REVENUE

The transition from a fixed feed-in tariff for wind power to a free market situation requires investigations into the correlation of the energy production with the market price. Not only the energetic yield but also the related financial revenues are relevant for project evaluations and investment decisions. The market value atlas and revenue report combine time series of energy production and simultaneous prices at the power exchange with a very high spatial and chronological resolution. They rely either on historical data (market value atlas) or on scenarios for future market developments (revenue report, revenue atlas) which fully account for the fluctuating characteristics of renewable energy.

*enervis and anemos combine their long-standing expertise in energy markets and wind power meteorology and bring together high-resolution wind- and power market-models for the French and German wind market.*



## MARKET VALUE ATLAS

The analysis of the project's market value serves for a well-founded estimation of the price differences to the relevant wholesale market price and is therefore highly relevant for direct marketing companies as well as plant operators and investors (e.g. for the acquisition of existing projects and for the evaluation of new projects).

The market value atlas combines time series of the hourly production of wind turbines with the corresponding historic electricity prices at wholesale power markets and visualises the historic deviations between wind farm revenues and the reference market value for any specific turbine model and hub height on a countrywide scale.

## REVENUE ATLAS

While the market value atlas focuses on past conditions the revenue atlas looks into the future. The revenue atlas combines the temporal variation of the wind conditions with scenarios of the future power market development from the enervis power market model, which fully account for the characteristics of renewable energies. The revenue atlas visualises the power market revenues for a range of typical turbine types for the next decades. The atlas is available for Germany and France.

## SITE-SPECIFIC MARKET VALUE REPORT

For the analysis of the project-specific historical market value all relevant influencing parameters like the predicted long-term yield and project-specific restrictions such as noise, shadowing and shutdowns due to nature conservation legislation are taken into account. All this is based on the anemos wind atlas with correspondent long-term calibration as well as energy yield reports for the specific wind farm location.

