

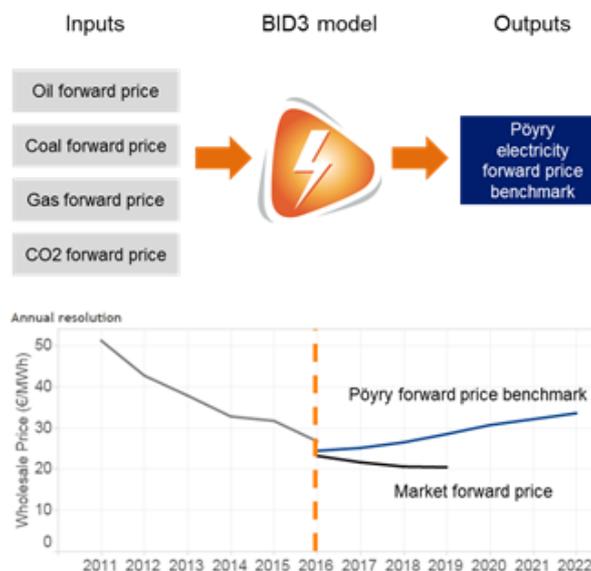
## PÖYRY'S FUNDAMENTAL ELECTRICITY FORWARD PRICE BENCHMARK

Energy markets have become more and more dynamic and electricity prices have developed in unanticipated ways making them very difficult to predict. The forward prices for electricity are sometimes difficult to explain from the fundamental cost of producing electricity, and recently the forward curve has been lower than what fundamentals suggest. Besides various other factors, low market liquidity or bearish market players may be an explanation for this phenomenon. The recent recovery of forward prices at the EEX clearly shows, that a price level of 20 €/MWh was more an overreaction than it was explainable by the fundamentals.

Now, in order to gain a better understanding of the semi-liquid market, Pöyry has established a fundamental electricity forward price benchmark. This benchmark indicates, whether the market is fundamentally under- or overvalued. By using the fundamental electricity forward price benchmark, traders can strengthen their expectations on mid-term price developments and investment managers receive an additional price reference closing the gap between the forward prices and the fundamentally modelled long-term price projections. The fundamental electricity forward price benchmark provides you with the information, where the price level should be in a perfect market. It allows you to take your business decisions based on the best available information and to better assess the inherent price risks.

### PÖYRY'S MODELLING APPROACH FOR THE ELECTRICITY FORWARD PRICE BENCHMARK

Pöyry uses its own best-in-class fundamental electricity market model BID3 and employs most recent forward fuel and CO<sub>2</sub> prices as input factors to establish the benchmark. The modelling approach is illustrated below.



The fundamental mid-term electricity wholesale prices are calculated

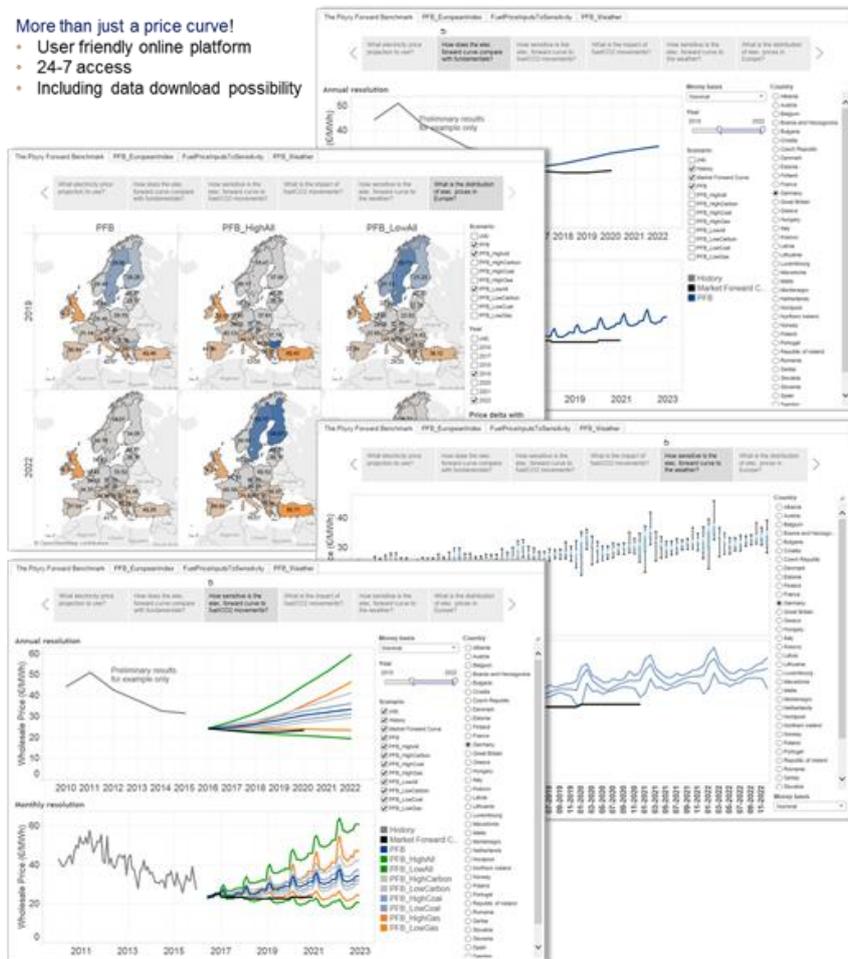
- based on the most recent forward fuel and CO<sub>2</sub> market prices

- in an hourly resolution
- for a seven year time frame
- including sensitivities to provide a range based on commodity price variations
- with respect to uncertainties in the weather, which influences particularly electricity production from renewable sources such as wind or solar

and updated on a monthly basis (or more frequent if required).

## PÖYRY'S ELECTRICITY FORWARD PRICE BENCHMARK FOR ALL EUROPEAN MARKETS

Pöyry established the electricity forward price benchmark for all European markets including the Nordics and the United Kingdom. All data can be accessed through a user friendly online platform from where it is also possible to download the benchmark results. Screenshots from the online benchmark platform are depicted below.



In summary, using forward fuel and CO2 curves as inputs for the fundamental modelling of the electricity forward prices will provide you with a much more accurate picture of energy markets when looking at the semi-liquid horizon. Therefore, the electricity forward price benchmark is an ideal supplement to the forward curve or the fundamentally modelled long-term wholesale electricity price projection as provided for example in Pöyry's market reports.

We are very happy to provide you with more information on our modelling approach, back testing results or related services for the electricity forward price benchmark. Please do not hesitate to contact us ([email](mailto:pascal.haenggi@poyry.com)).