



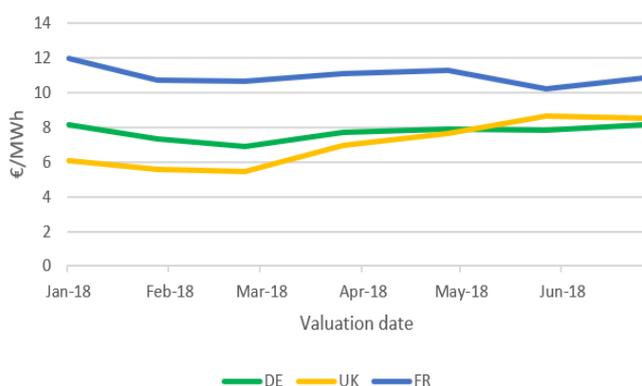
Power plant and option Report

Plant Value	Name	DE Intrinsic €/MWh	DE Simulation €/MWh	UK Intrinsic £/MWh	UK Simulation £/MWh	FR Intrinsic €/MWh	FR Simulation €/MWh
	Coal 46%	4.89 ↑	8.17 ↑	5.85 ↓	7.27 ↓	7.27 ↑	10.82 ↑
Coal 46% option	7.54 ↑	10.63 ↑	8.79 ↓	10.25 ↓	11.78 ↑	14.62 ↑	
Gas 60%	3.26 ↑	6.75 ↑	7.12 ↓	8.67 ↓	6.56 ↑	10.12 ↑	
Gas 60% option	3.78 ↑	7.17 ↑	7.72 ↓	9.26 ↓	7.06 ↑	10.46 ↑	

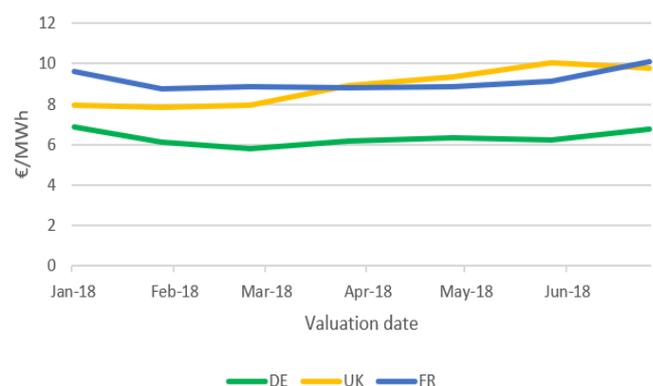
Remarks

- The valuation date for the analysis is 29 June 2018.
- Volatilities, correlations and other parameters are calibrated on 2 years of historical price data.
- The main assumptions for this analysis can be found at the end of this document.
- Since January this year, we have published assessments for specific coal and gas plant products. The two graphs on this page show the development of the full simulation value of the coal 46% and gas 60% products. For a better comparison, in these graphs the UK values are in €/MWh (while the table is in £/MWh). Especially the UK coal plants have gained value in the first half year of 2018, from about 6 to 8 €/MWh. It is now at a similar level as the German coal plant. For French coal plants the outlook has consistently been higher at around 11 €/MWh.
- For gas plants, the UK and France have about equally high expectations with values of around 10 €/MWh. Germany has gained somewhat but is still lower at 6.75 €/MWh.
- The historical graphs on the next page show that June was better than April/May for new coal and gas plants in Germany. A 60% efficient gas plant could have earned a gross margin in the spot market of around 900 Euro per MW, while a 46% efficient coal plant could have earned around 2200 Euro per MW.

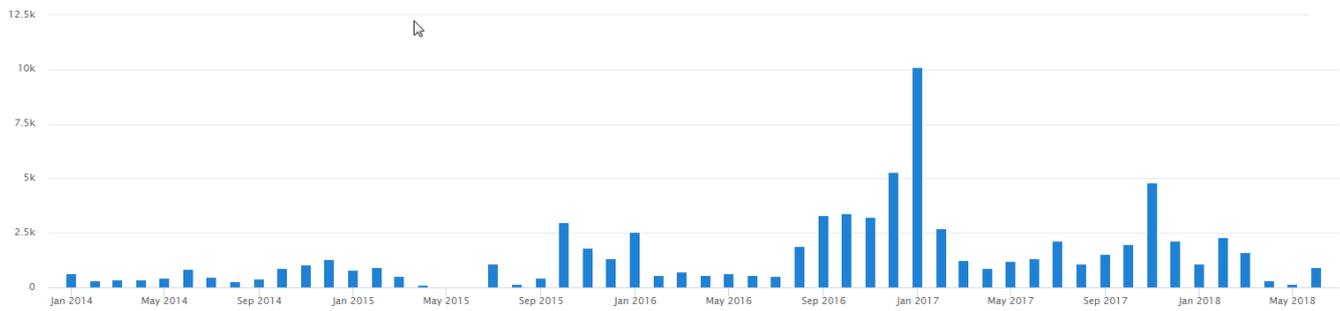
KYOS Assessment: Coal 46pc plant value 2019



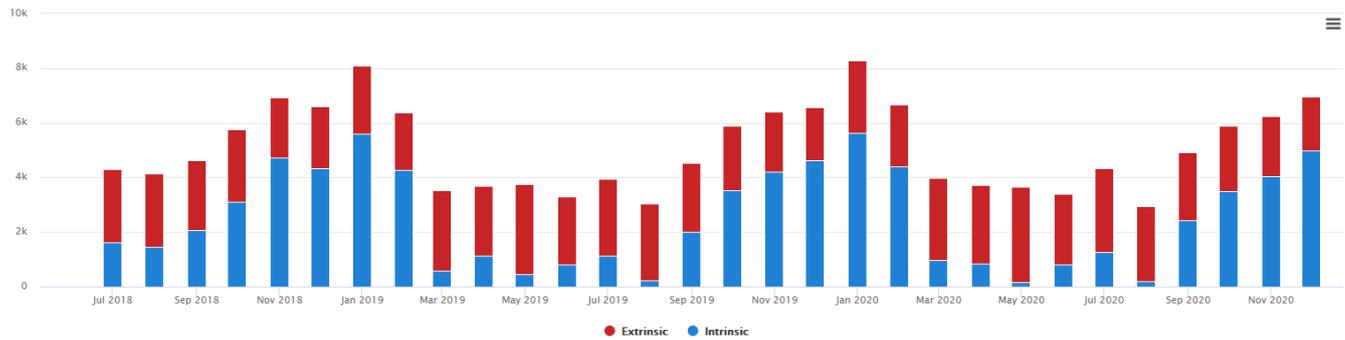
KYOS Assessment: Gas 60pc plant value 2019



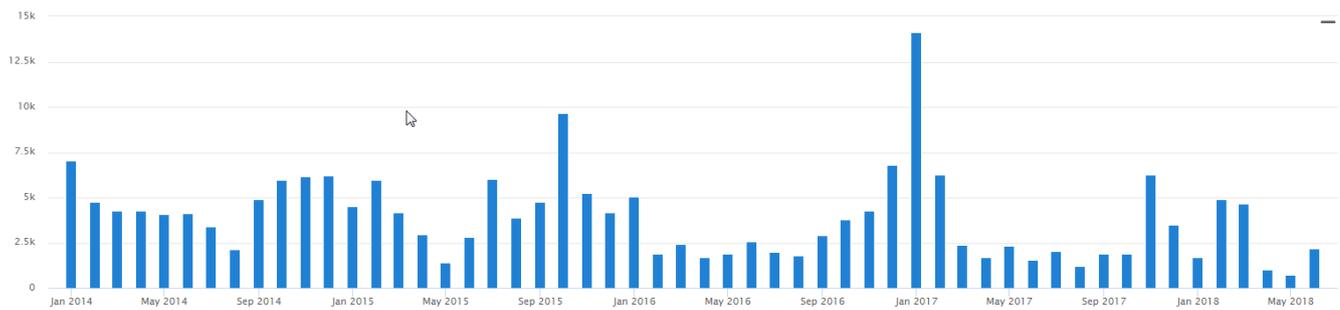
Realized value for the Gas 60% plant product (German market, value per MW)



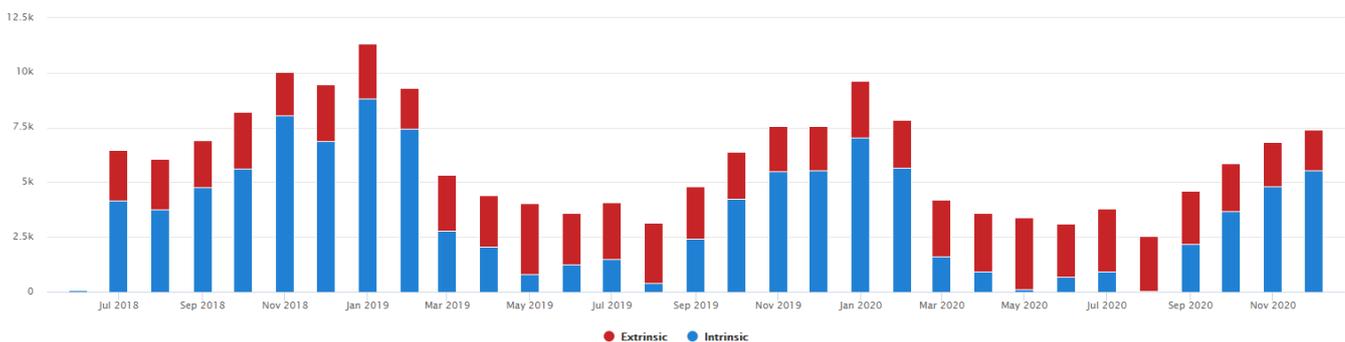
Estimated future value for the Gas 60% plant product (German market, value per MW)



Realized value for the Coal 46% plant product (German market, value per MW)



Estimated future value for the Coal 46% plant product (German market, value per MW)



Explanation

All valuations have been performed with KYOS software, in particular KyPlant and KySim. Simulation values are the average across a large number of Monte Carlo price simulations and using the least-squares Monte Carlo methodology to derive the optimal dispatch (exercise) of the products.

All plants and option products have a maximum capacity of 1 MW, at which they reach the maximum efficiency. The reported values in the table are for calendar year 2019. The 'option' products are strips of hourly clean spark or dark spread options, with no start costs and a single efficiency.

The other two products are more like real plants: they have start costs of EUR 30 (GBP 25) for coal and EUR 12.50 (GBP 11) for gas. Furthermore, to avoid a start, they can produce at 0.5 MW capacity at an efficiency which is 6% point lower.

The variable costs per MWh are EUR 3 (GBP 2.60) for the coal plant, and EUR 2.50 (GBP 2.15) for the gas plant. The coal plant also faces coal transport costs of 10 EUR (GBP 8.60) per tonne.

No other plant operational, investment or financing costs are assumed. Nor did we include maintenance, trips, minimum on- and off-times, ramp rates, etc. All these features can easily be modelled by KyPlant, but for simplicity are left out from this report.

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