



KyCurve: Market price forward curves

KyCurve helps trading, structuring and risk management to construct monthly, daily, hourly and half-hourly price forward curves. The curves match with all the relevant price quotations in the market, so are arbitrage free. At the same time, the curves follow seasonal, daily and hourly historical shapes. The model relies on an advanced statistical methodology to find these shapes.

- ✓ Contains smart algorithm to calculate expected forward curves
- ✓ End-of-day and live curves based on intraday orders and trades
- ✓ Applicable to power, gas and other commodity markets
- ✓ Available as a data service, and as software solution

End-of-day forward curves are widely used for marking-to-market all trading positions. During the day, hourly power and daily gas forward curves help to set the best price for all sales and trading opportunities, and to optimally dispatch the trading assets.

Benefits

How do I get a good price forward curve?

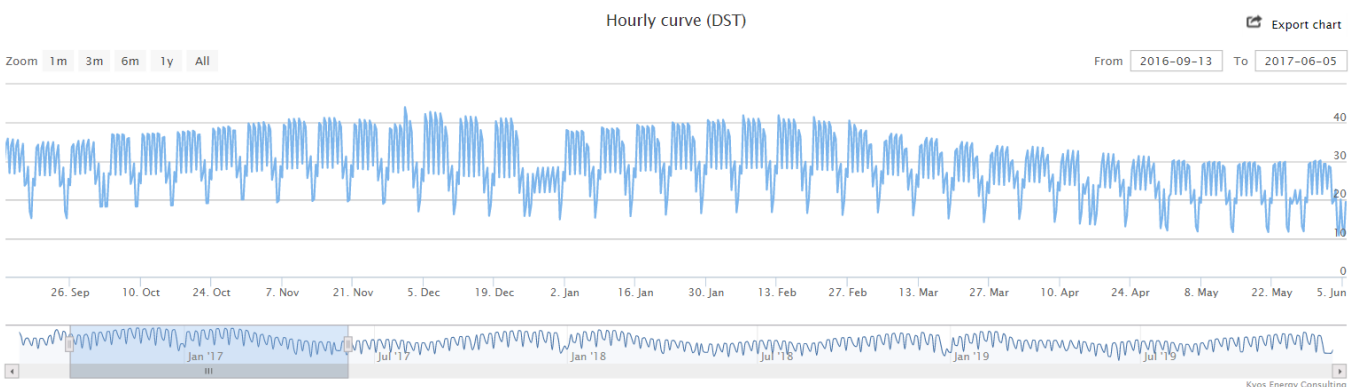
A good forward curve includes seasonal patterns, deviates between weekdays and weekends, incorporates public holidays, and contains the right level of variation between the hours. KyCurve performs all these tasks automatically when new settlement data arrive. The KyCurve model can be used to construct detailed curves for power, gas and other commodity markets.

Price live contracts based on orders and trades

Much effort is often put into structuring end-of-day price curves. However, price volatility may be large during the day as well, requiring intra-day adjustments in order to correctly price contracts and assets during the day. KyCurve has an extra module for intraday reshaping of price curves based on live quotes from brokers and exchanges. It allows our customers to be on top of the market and provide the most competitive price quotations.

Use advanced model or get price curves as a service?

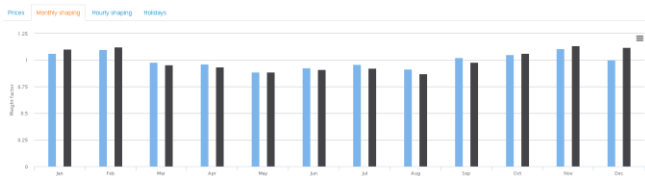
The KyCurve model can be delivered as a model in the KYOS Analytical Platform. This allows you to schedule calculations based on your own settings and data feeds. Alternatively, KYOS offers price forward curves for many European power and gas markets as a service via www.pricecurves.com. Depending on your preference, you can choose between both possibilities.



Features

KyCurve uses advanced statistics to make (i) an end-of-day forward curve and (ii) a live forward curve using information from live trades and orders.

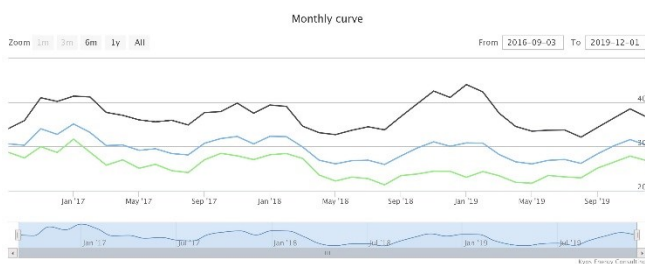
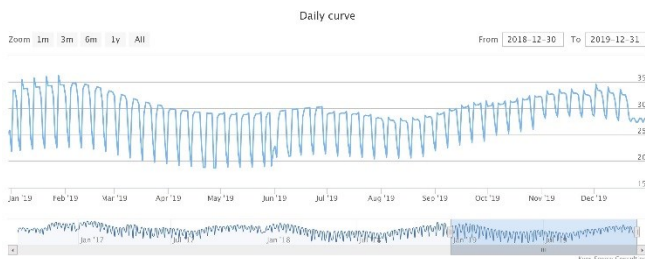
KyCurve is fully integrated in the KYOS Analytical Platform. Automated data feeds with exchanges and data providers ensure you always have up-to-date prices, ready to be used for contract pricing, power plant dispatch or MtM calculations.



Methodology

KyCurve applies advanced statistics to calculate detailed price curves. Seasonal shapes are found based on historical relationships in forward markets. Weekday patterns are filtered from historical time series, and an innovative statistical routine determines the optimal daily and hourly shaping.

Of course, the impact of public holidays and bridge days is included in the optimisation algorithm.



KYOS Analytical Platform

KyCurve is fully embedded in the KYOS Analytical Platform to create detailed hourly price forward curves for power, gas and other commodities.

All KYOS Analytical models are developed in Matlab, and part of the KYOS Analytical Platform. Other software modules include:

- KyPlant: determine the value of a (portfolio of) power plants by quickly calculating the optimal dispatch,
- KyStore: optimize a gas storage and calculate values, delta positions and day-ahead trades
- KySwing: helps to generate most income from gas contracts by optimizing the contract flexibility
- KySim: generate Monte Carlo price simulations, relying on a hybrid approach of statistics and fundamentals
- KyPF: generate hourly price forecasts and simulations for one or more power markets.
- AtRisk: calculate both Cashflow and Earnings-at-Risk. Both metrics show the distribution of future results over longer horizons.

The KYOS Analytical Platform is developed in PHP. A MySQL or MS SQL database is used for data storage. Compiled Matlab models perform the analytical calculations.

Technical information

The Platform can run on a Windows and on a Linux environment. The platform is delivered by default as cloud solution, and it can also be installed on a local server.

The Platform can operate as a stand-alone software application. Automated price connections are possible and recommended. Connections to other systems for contract data and calculation results can be developed based on customer specifications and the XML protocol.

An installation on a local or cloud server is typically performed in one working day.

