DATAPREE

Datapred for EEX

Introduction to the web application

1. Introduction

Datapred for EEX is a web application dedicated to buyers of power, natural gas and emission allowances.

You can access the application <u>from EEX's InsightCommodity platform</u>, and <u>from the Datapred website</u>.

The goals of Datapred for EEX are to help power, natural gas and EUA buyers with their reporting, to boost their market awareness, and to provide them company-specific decision support.

For this, Datapred:

- **Provides historical EEX prices** (with the corresponding dynamic statistical analyses average, min, max, volatility).
- Lets buyers upload, visualize and update past and projected power, natural gas or EUA consumption.
- Lets buyers **upload and visualize power, natural gas or EUA transactions**, in bulk (for example for past transactions) or one by one (for example for new transactions).
- **Provides quick profit and loss calculations** showing buyers where they are and where they could land with regard to average prices and total spend, compared to budget.
- **Computes EEX price trend predictions**, informing buyers of likely daily and weekly price trends up to 12 weeks ahead (with the corresponding accuracies, continuously backtested).
- **Displays future price corridors**, which complement price trend predictions by representing likely price ranges extending into the future (each range corresponding to a degree of likelihood).
- Generates what-if simulations, showing buyers how contextual elements (e.g. temperatures, economic activity) could affect EEX prices.

DATAPRED FOR EEX



- Monitors EEX price volatility (including upper and lower regimes), which since 2020 has become a key decision factor for emission allowance buyers.
- Identifies and quantifies price drivers the market and environmental forces affecting price movements at time t — based on tens of data streams.
- **Provides access to the contextual data streams** corresponding to the price drivers, together with the corresponding statistical analyses.
- Offers a comprehensive REST API covering every feature and underlying calculation of the web application.

We are **continually improving Datapred**, so stay tuned! We usually announce major releases on <u>the Datapred blog</u>.

2. Situation module

a. Transactions

Datapred lets you **upload and update your power, natural gas or EUA transactions**, saving you considerable time by automatically retrieving from EEX the relevant information about the corresponding futures contracts.



Natural gas futures contracts used by the company

When you close multiple transactions in a single day for the same futures contract, Datapred stacks them in the same vertical bar.

The information contained by the Transactions chart is **used throughout the Datapred application**.

b. Consumption and exposure

Upload your consumption plan. Datapred will then use the information contained in the Transactions graph described above (futures contracts, dates, volumes) to **show you what's required, covered, and exposed for the selected period**. It's that simple.



The chart **updates automatically every time you enter a new transaction** into Datapred.

c. Profit and loss calculations

Given your consumption plans and your transactions to date, where are you compared to your target price and budget for the selected period, and where can you expect to land?

Volumes			Prices			Values		
Required ()	242 990	MWh	Target price 🕕	EUR	45,75	Budget ()	EUR	11 116 792
Covered 🕕	88 280	MWh	Current average price 🕕	EUR	65.12	Current spend 🕕	EUR	5 748 890
Exposed 🕕	154 710	MWh	Projected price ()	EUR	52.79	Projected spend	EUR	12 827 027

The three tables at the top of the Situation page use the information contained in the Consumption and Transactions graphs, and Datapred's direct connection to EEX prices, to quickly answer these questions. « Projected price » and « projected spend » start from the current average price and current spend, and assume that **any outstanding requirement for the selected period is covered at today's price**.

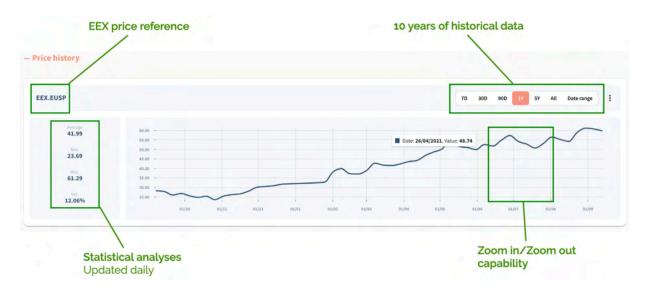
Barring the analyses and forecasts of Datapred's Markets module, this is the best estimate of what you can expect for the entire period.



3. Markets module

d. Historical EEX prices

To place the ensuing analyses and predictions in context, Datapred provides **historical EEX prices**¹, with the corresponding dynamic statistical analyses (average, min, max, volatility).



Users can **navigate 10 years of historical EEX prices**, choosing the price range they want to focus on, and zooming in and out selected time frames. The statistics on the left adjust to the selected time frame.

e. Price trend predictions

Compared to today, do we anticipate prices to increase or decrease, over the next 12 days, weeks or months?

The Price trends table answers that question. It also provides **the corresponding market visibility** (high, medium and low, continuously updated like the predictions, and backtested over 12 months).

¹ Direct from EEX, updated daily.

Price trends												
									Day	Week	Month	
Week + X 20)	+1 W+2 /09 27/09	W+3 4/10	W+4 11/10	W+5 18/10	W+6 25/10	W+7 1/11	W+8 8/11	W+9 15/11	W+10 22/11	W+11 29/11	W+12 6/12	Price tren
Trend	~ ~	~	~	~	~	~	~	~	~	~	~	prediction
Accuracy 175	5% 73%	78%	81%	96%	97%	90%	83%	92%	88%	80%	71%	

These price trends predictions are based on <u>Datapred's award-winning</u> modeling engine for time series.

f. Price corridors

Knowing in which direction EEX prices will probably move in the future is valuable, but which ballpark figures are we talking about?

Datapred's price corridors complement trend predictions by representing likely price ranges extending into the future.



Price corridors are **useful for fine-tuning your buying strategy, but also for testing potential price bounds**.

Datapred lets you **navigate to any date in the past and display the analyses and predictions that were available at that time**.

Interestingly, when you check price corridors on that date in the past, you can seen how EEX prices actually evolved since that date — and how accurate the price corridors were.



g. Simulations

Besides forecasts (in the shape of price trend predictions or price corridors), simulations are a natural way to explore potential energy market developments.

For example: How would German power prices move if temperatures dropped 2°C? Would a Chinese economic slowdown bring Italian gas prices down?

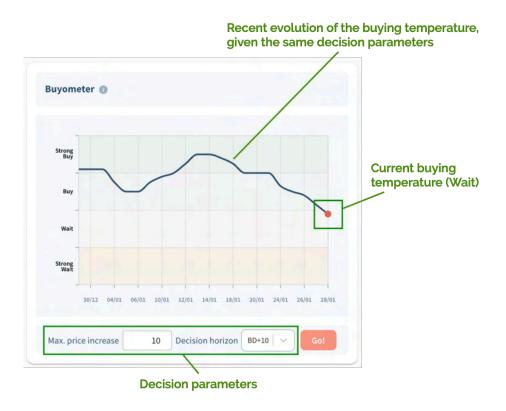


Datapred leverages its quantification of energy price drivers (see section 7 below) to generate continuously updated simulations that contribute to your market awareness and help with your financial planning.

h. Buyometer

As a buyer, you make decisions based not only on your understanding of market dynamics, but also on your own operational constraints.

The buyometer is an innovative tool that **displays the "buying temperature" of the day, combining Datapred's market analyses and predictions with the optimization of two adjustable decision parameters**: the maximum price increase you can tolerate, and the time you can wait before buying.



Differing decision parameters will yield differing buying temperatures, especially when price volatility is high

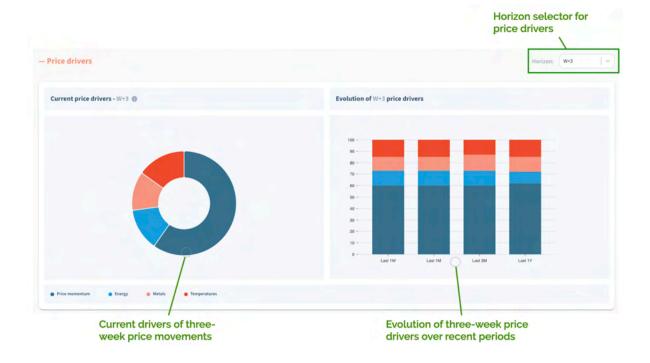


Here is an example, for the PEG DA spot on 2 February 2022:



i. Price drivers

Where is all that coming from — what are the market or environmental forces currently affecting EUA, natural gas or power prices?



We call these forces « price drivers », and — based on tens of data streams² — Datapred continuously identifies and quantifies them.

² See Contextual data section.



Quantitative price driver analysis is a great complement to industry expertise.

Qualitative market research may discuss market forces that are real but hard to capture with hard data. And conversely, quantitative analysis may isolate price drivers that are unexpected, but nonetheless have a significant impact.

j. Contextual data

In addition to EEX data, **Datapred's analyses and predictions are based on tens of contextual data streams**: energy prices, weather information, stock prices, macroeconomic indices...

You can **access that contextual data in Datapred's Explore tab**. For each data stream, we are providing the same continuously updated statistical analyses as for EEX prices.



We are constantly testing the relevance of new contextual data streams, and adding them to Datapred when they contribute.



4. API

All the features described above, and the underlying calculations, are covered by Datapred's REST API.

API documentation is <u>accessible upon request</u>.



5. About Datapred

Datapred is a web application offering **a new way to buy energy and raw materials**.

Datapred helps buyers:

- Track their energy and raw material transactions in one user-friendly and connected place.
- Adapt to new market or operational conditions, challenge business rules and resolve trade-offs.
- Flawlessly execute the selected buying or hedging strategies, and provide robust reports to their stakeholders.



