



# FORWARD CURVES: YOUR MANAGEMENT STRATEGY

Simplifying the Deployment and  
Management of Forward Curves



## Introduction

The ability to manage and utilize accurate forward price curves is a critical aspect of commodity trading and risk management. In a market environment with plenty of geopolitical uncertainties, (e.g., COVID-19 pandemic, Ukraine-Russian War, Middle East tensions), the need to validate valuations, understand exposure and align risk tolerance strategies across the business is undeniable. There is also ever-growing oversight by regulators, stakeholders and financiers, which intensifies the criticality for forward curve development and use by those trading and/or managing commodity portfolios. This is a global phenomenon as profitable trading opportunities become more difficult to find.

Enterprises looking to leverage complex forward curves face an array of important decisions. They must decide the age-old build or buy question. Many software providers can help, but not all are equal. You should understand your requirements and assess the options based on what is important to your organization. Do you need to make better informed valuation? Do you want to make better investment and trading decisions? Do you need to calculate price forward curves in real time?

Do you require a system that will strategically grow with your business needs? Do you need access to the ever-growing energy products which feed your curve formulas? Do you need a system that tracks methodology changes over time and keeps a history of all curve builds? Understanding the important compliance and audit requirements, as well as your company's best practices regarding documentation, controls, disaster recovery and the product release and testing process, will ensure you choose what's right for you. With all the various requirements and continuous solution investment, any organization can see that leaving the solution to a third-party provider makes complete sense. You will most likely save money in the long run.

In this paper, we discuss Enverus CurveBuilder and why it is the answer to your price forward curve management strategy. We also review how our solution provides a holistic solution that simplifies your deployment, management and operational concerns.

## FORWARD CURVE: WHAT IS IT?

A forward curve is not a price forecast. It is the current price a buyer is willing to pay for a commodity product that will be delivered at a future date. When the price from the buyer meets a seller's price, there is clear transparency in the forward curve. In markets where high-volume trading is conducted on large commodity exchanges, there is critical need for the ability to quickly calculate forward curves to improve price transparency. Most commodity market participants trade in low transparency markets, where markets are illiquid, which in turn requires the building of forward curves to create a representative price for valuation. Traders and risk managers need the ability to build a forward curve even when broker and exchange data do not have perfect liquidity (volume) or coverage. Forward curves that match products traded, time traded, periodicity, etc. allow them to optimize their trading decisions and better understand the risks involved.

Forward curves often require complex calculations to achieve an accurate valuation. Use cases include making informed trading decisions, conducting risk assessment, calculating profit margins, and settlements. While these forward curves are typically calculated at the end of the day (EOD), based on the importance of the use cases stated above, there is a strong desire to run the forward curve calculations in real time.



## PAST PROBLEMS AND NEW PROBLEMS

While enterprises try to maintain standards for data collection as new data sets are introduced, more unique configurations are required to collect and organize the fragmented inputs. Over time, managing the differences between these unique configurations becomes challenging and requires extensive

documentation and effort to understand how to manage and monitor the data collection process. Most companies in the commodity markets decide that they do not possess the economy of scale to build their own data aggregation service due to the cost and complexity of data systems. Therefore, it has become common practice for these companies to purchase a data aggregation and storage software service.

Forward curve management is much like data aggregation – the same problems exist, but third-party software providers are less likely to be in place. Companies often start their forward curve management strategy with an internal custom process. The calculations start off very simple but over time the complexity and the cost of supporting the process grow. In the last 10 years, forward curve management software has become more readily available to commodity market participants. It is common practice for companies to consider utilizing a third-party software provider for their curve management solution. It is even more common to find a solution which has a combined offering of data aggregation and curve building.



## WHAT TO CONSIDER WHEN BUILDING YOUR FORWARD CURVE STRATEGY

The strategy should start with a build versus buy decision that occurs when looking at options to solve forward curve creation and management. In many cases, a build starts out of necessity in Excel. A reliance on Excel and/or in-house development can seem like the fastest and least expensive option but comes with many potential systemic risks. The individual who built the Excel sheet may be in a new role or no longer at your company when it is time to add a new product to the process. This results in reverse engineering the sheet or building a completely new process. In addition, in-house solutions often fail to scale and lack active disaster recovery mechanisms. With in-house solutions, clients miss many industry best practices and functionality that an established software suite provides.

**Audits are required;** the lack of a detailed audit trail in Excel creates unexplainable differences with counterparties and auditors, resulting in monetary losses, litigation and a substantial amount of wasted time. Custom development is often missing detailed documentation, controls and a release process as required by auditors.

**Change is a constant;** the fundamental changes in the global commodity market will continue. Modifications include infrastructure adjustments for the export of oil by the U.S. to coincide with the dramatic price movement of gas. In addition, the move to renewables is changing the landscape. These dynamics often require logic changes in how companies calculate their curves. Solutions that enable seamless logic changes and point-in-time abilities are required.

**Data boom will continue;** the growing number of traditional sources with increased volumes paired with new alternative data sources show no signs of slowing down. In fact, the number of new products which have reached the market in the last two years has exploded exponentially. Companies need a curve solution that scales with the forward-looking needs regarding the amount of data and the timeliness required. A company might currently need to run curves one day after the close of the market, but next month may need to run a curve hourly. Solutions that enable clients to adapt to data and time requirements have a competitive advantage.

**Quality in, quality out;** a curve solution requires high quality input data. Quality can be measured in terms of correctness, completeness, timeliness, accessibility and consistency. A lack of completeness creates the most problems if not fully addressed in a curve solution. This often includes metadata such as units of measure, currency, time of release, start of the term, end of the term, time zone and holiday calendar. These data points are often missing from traditional sources and require custom processes to collect or create the required metadata.

Collaborating with a third-party software provider is an increasingly popular strategy leveraged by leading companies in the commodity market. The table below outlines key points to consider when looking at a third-party provider for your price forward curve strategy.

- ✔ Experience with forward curve creation, input data and general domain
- ✔ Established user interface that can handle the most complex calculations
- ✔ Connected workflows/APIs to deliver the curve(s) to a target system
- ✔ Full audit trail with versioning and the ability to roll back changes
- ✔ Redundancy for disaster recovery with minimal to no down time
- ✔ Continued investment in the product suite with a clearly defined roadmap
- ✔ Data quality utilizing advanced quality checks and alerts
- ✔ Transparency into curve calculation details
- ✔ Scalability and timeliness for real-time curve calculations
- ✔ Accurate metadata, including calendars
- ✔ Complete security and access controls

## FORWARD CURVES AND ENVERUS

CurveBuilder from Enverus is used by top commodity market participants to accurately measure risk, increase real-time price transparency, mark positions faster, achieve compliance, reduce operational risk and improve organizational efficiency. This solution enables traders and risk managers to incorporate proprietary data into their curves for increased transparency with source and logic traceability.

A coherent set of integrated tools to perform data management, curve building and visualization of both EOD and real-time forward prices and curves is a distinct advantage for personnel on the trading floor. Ensuring front-, mid- and back-office staff are operating from a single source of curves means valuations and management reporting are created on the same basis with the same up-to-the minute prices, reducing reconciliations and accelerating decision-making. The ability to mark prices faster based on intraday snapshots or achieve earlier EOD settles also provides competitive market advantage and allows more accurate risk management and trading decisions.

The foundation of Enverus CurveBuilder is built on scalable, secure technology that enables traders and risk managers to calculate complex curve logic in milliseconds. The calculations are based on event triggers, including data availability.

Together, the calculation speed and event triggers enable the real-time curve building. These real-time curves are published to the Enverus MarketView flagship data visualization tool for trader and risk manager consumption and are pushed, at user defined intervals, to third-party energy trading and risk management (ETRM) systems. The solution enables clients to calculate thousands of curves in seconds throughout the global trading day and has advanced quality checks constantly running on the input data and the output curve to assure the highest quality marks.

Rigorous data management is combined with visualization and mobile consumption to maximize the ability of your analytical team. This Enverus MarketView-CurveBuilder combination provides a complete enterprise data management system and decision analytics platform that allows for real-time forward curve construction capabilities. The Enverus team can implement an integrated suite of its data management, visualization and analytics tools to provide customers with the ability to build real-time curves based on their custom specifications and business requirements.

## WHY ENVERUS?

- ✓ Real-time curve building: Write contracts and negotiate transactions with confidence
- ✓ Intuitive user interface: You don't need to be a quant to build a curve
- ✓ Largest global user community: More than 10,000,000 curves built daily
- ✓ Deep market and curve expertise: Access to Enverus' global experts
- ✓ Fully integrated and automated solution: Curve Building through price integration

## Conclusion

Leading companies in the commodity market continue to collaborate with software providers to manage their forward curve strategy. Companies that select a proven, global curve solution provider see the partnership as a competitive advantage. Forward curve management is a dynamic process with changing input and output requirements, making it is important to partner with an experienced software provider with a proven track record of success.