

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. With growing and intensifying oversight by regulators, stakeholders, and financiers, forward curve development and use has become more critical to those trading and/or managing commodity portfolios. This is especially true as profitability trading opportunities become more difficult to find.

Enterprises looking to leverage complex forward curves face an array of important decisions. For example, they must decide whether to build solutions or to buy one. Many software providers can help, but not all of them are equal. You should have the ability to have your forward curve calculated in real time, it should scale to meet your curve needs as they grow, and you must have access to the full suite of meta data and calendars required. Additionally, it's also important to meet your auditors' requirements and incorporate industry best practices regarding documentation, controls, disaster recovery, and release process. When calculating your curve, you need to ensure that you are selecting the right input data and using the appropriate business logic.

In this paper we discuss MarketView CurveBuilder and why it is the answer to your 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. A majority of commodity market participants trade in low transparency markets, which in turn requires the building of forward curves to create a representative price. 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, and more allow them to optimize their trades and better understand the risk required.

Forward curves often require complex calculations to achieve an accurate valuation. Use cases include: making informed trading decisions, conducting risk assessment, calculating profit, and billing counterparties. 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.

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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 datasets. 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 is currently less likely to have a third-party software provider 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 grows, as does the cost of supporting the process. 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.

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 will likely be in a new role or not 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.

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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. These dynamics often require logic changes in how companies calculate their curves. Solutions that enable seamless logic changes and point-in-time abilities is 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. Companies need a curve solution that scales with the forward-looking needs in terms of the amount of data and the timeliness required. A company might currently require their curves run one day after the close of the market, but next month may need to run a curve every hour. 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, access, and consistency. A lack of completeness creates the most problems if not fully addressed in a curve solution. This often includes meta data such as units of measure, currency, time of release, start of the term, end of the terms, time zone, and holiday calendar. These data points are often missing from traditional sources and require custom processes to collect or create the required meta data.

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 software provider for your forward curve strategy.

✓	Experience with forward curve creation, input data, and general domain
✓	Scalability and Timeliness for real-time curve calculation
✓	Established User Interface that can handle the most complex calculations
✓	Meta Data to calculate curves
✓	Complete Calendars to be used in calculations
✓	Data Quality has advanced quality checks and alerts
✓	Business Continuity Risk
✓	Complete Security and Access Controls
✓	Full Audit trail with the ability to roll back changes
✓	Transparency on how the curves are calculated
✓	Redundancy for disaster recovery with little down time
✓	Connected Workflow to deliver the curve to a target system
✓	Integrated Product Suite to connect front, mid, and back office
✓	Established set of APIs
✓	Clearly Defined Roadmap

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FORWARD CURVES AND ENVERUS TRADING & RISK

MarketView CurveBuilder is used by top commodity market participants to accurately measure risk and 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 end-of-day 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 reports 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 end-of-day settles also provides competitive market advantage and allows more accurate risk management and trading decision making.

The foundation of MarketView CurveBuilder is built on scalable and secure technology that enables traders and risk managers to calculate complex curve logic in milliseconds. The calculations are based on event triggers, including new input data availability. Together, the calculation speed and event triggers enable the real-time curve building. These real-time curves are published to the MarketView Desktop for trader and risk manager consumption and are pushed to third-party systems such as risk 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 desktop and mobile consumable information by leveraging the power of visualization and analytics tools. This combination provides a complete enterprise data management system and decision analytics platform that allows for real-time forward curve construction capabilities. The team can implement an integrated suite of its data management tools, and visualization and analytics tools, to provide customers with the ability to build real-time curves based on their custom specifications and needs.

CONCLUSION

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

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MARKETVIEW CURVEBUILDER KEY DIFFERENTIATORS

Real-time curves

Sub-second calculation speed

Real-time, triggered, manual, or scheduled curve building

Established **User Interface**

- Point and click
- Dynamic shaping and extrapolating
- Sandbox-to-build, with changes tracked
- Test harness
- Versioning and rollback with audit trail
- Curve build dependency diagram, data, and logic
- Out-of-the box quality assurance
- Curve process logs
- Capability to handle the most complex curves

Single source (**Front desktop** user base, back, and middle office)

Mobile access curve results

Transparency on curve in front-office application

Largest set of out-of-the box logic for the energy markets (rules)

Extensible common backend

Breadth of calendars

Trayport connectivity

Data source independence

Established curve building tool 10+ years

Largest **global user base** 10+ million daily curves

Largest global team with deep curve knowledge

Manual overwrite with changes tracked

Lowest business continuity risk

[View Our Do-it-Yourself Guide to Building a Forward Curve.](#)

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