

PUTTING DATA ANALYTICS TO WORK IN ENERGY TRADING



Introduction

Margins are tighter for commodity merchants as we enter the next decade. As trading groups face off, leveraging data analytics is absolutely key. So, what's the best way to use internal data, and how can trading companies avoid the dangers of subjective biases when designing complex and strategic database assets?

One thing is for sure—many of the once legendary players in commodity trading have chosen the exit. Massive investment banks such as Deutsche Bank, BNP, and SocGen have called it quits in physical commodity trading. Now more than ever before, the commodity traders who are in it for the long run need to stack their toolboxes with technologies that will push them towards continued profitability.

Regardless of your technological prowess, we can all agree that access to the deepest datasets is a key to success. What you do with the data, and how you choose to leverage it in trading decisions, sets up vast potential for trading improvements. Enverus Trading & Risk offers several solutions that give users the power to be as involved (or uninvolved) as desired in developing market opinions.

In this paper, we'll go over some of the most exciting solutions coming to you from our team. If you want to harness machine learning, plug in our forecasts to your own systems, or completely overhaul your forward curve management systems, keep reading. We have a solution for you.

QUANTS: IF YOU CAN'T BEAT 'EM, JOIN 'EM

How are you leveraging alternative data and the latest technologies when making trading decisions? As we enter the new decade, more risk managers and traders are plugging into the power of APIs and Python.

Today's modern traders may have the proficiency to build their own neural networks, but do they have the alternative data to put their Python skills to work as well? The answer is often no. Tools like Enverus Trading & Risk's Advanced Desktop Plugin (ADP) let quantitative analysts (or quants) do more with our flagship market data and enterprise management solution. Plug in to our pipeline of data and seamlessly access alternative data within Python using Enverus' out-of-the-box starter kits.

Millions of price and market fundamentals data points are accessible from hundreds of sources, including your own company's internal files. After adding on the MarketView ADP, users are just a few steps away from utilizing alternative data and simplifying the import/ export process interaction with Python. MarketView data pulls directly into Python after simply launching a Jupyter Notebook and importing our GvWSConnection module.

Figure 1 | Building A Neural Network Is Easy Using The Marketview Advanced Desktop Plugin.

```
# Import the MarketView module
from GvWSConnection import *

# Establish connection with DB
conn = GvWSConnection(USERNAME, PASSWORD)

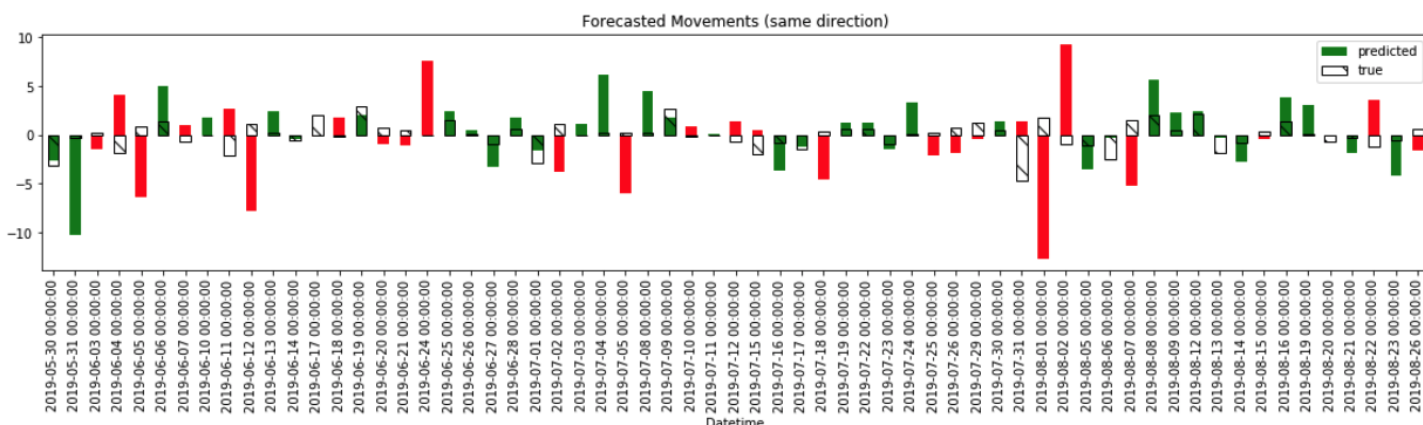
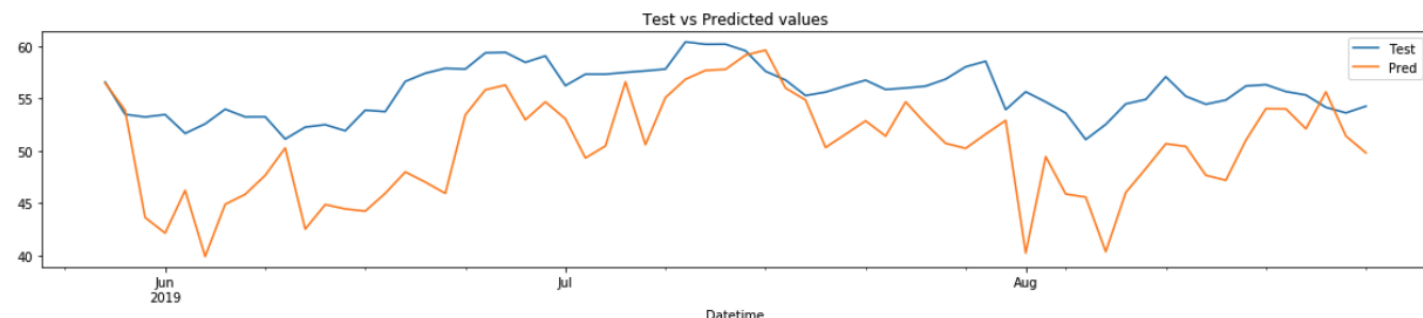
# Symbols to call
symbols = ['GCL','GRB','GHO', 'GNG']
data_size = 4000

# get last 4000 daily values for 4 symbols
print("* Daily Data Call for {} symbols *".format(len(symbols)))
dl = conn.get_daily(['/'+symbol for symbol in symbols], num_of_bars=data_size)

print('{} components retrieved'.format(len(dl)))
print_results(dl)
```

* Daily Data Call for 4 symbols *
15500 components retrieved

PriceSymbol	TradeDateTimeUtc	Open	High	Low	Close	Volume	MidPoint	OpenInterest
/GNG	2003-10-01 12:00:00	4.83	4.855	4.62	4.677	53032	4.7375	66185
/GNG	2003-10-02 12:00:00	4.677	4.73	4.565	4.686	34176	4.6475	63533
/GNG	2003-10-03 12:00:00	4.69	4.845	4.625	4.767	35120	4.735	62826
/GNG	2003-10-06 12:00:00	4.767	4.91	4.66	4.904	28525	4.785	60112
/GNG	2003-10-07 12:00:00	4.904	5.21	4.88	5.14	67124	5.045	52322
/GNG	2003-10-08 12:00:00	5.155	5.225	5.05	5.148	43586	5.1375	48533
/GNG	2003-10-09 12:00:00	5.165	5.52	5.12	5.494	62314	5.32	48938
/GNG	2003-10-10 12:00:00	5.539	5.8	5.445	5.652	52098	5.6225	45684
/GNG	2003-10-13 12:00:00	5.66	5.69	5.39	5.547	37094	5.54	45285
/GNG	2003-10-14 12:00:00	5.535	5.72	5.355	5.475	45115	5.5375	45133
/GNG	2003-10-15 12:00:00	5.466	5.52	5.34	5.431	27827	5.43	45669
/GNG	2003-10-16 12:00:00	5.43	5.51	5.35	5.411	26207	5.43	44112
/GNG	2003-10-17 12:00:00	5.408	5.408	5.025	5.036	42643	5.2165	42358
/GNG	2003-10-20 12:00:00	5.036	5.036	4.74	4.772	47406	4.888	37853
/GNG	2003-10-21 12:00:00	4.77	4.96	4.76	4.875	32521	4.86	34609
/GNG	2003-10-22 12:00:00	4.88	5.01	4.83	4.924	31136	4.92	30541
/GNG	2003-10-23 12:00:00	4.929	5.02	4.85	4.913	33475	4.935	26880
/GNG	2003-10-24 12:00:00	4.92	4.97	4.75	4.786	26929	4.86	25487
/GNG	2003-10-27 12:00:00	4.71	4.71	4.5	4.512	35187	4.605	24566
/GNG	2003-10-28 12:00:00	4.529	4.544	4.42	4.486	38761	4.482	17035
/GNG	2003-10-29 12:00:00	4.49	4.544	4.39	4.459	0	4.467	0



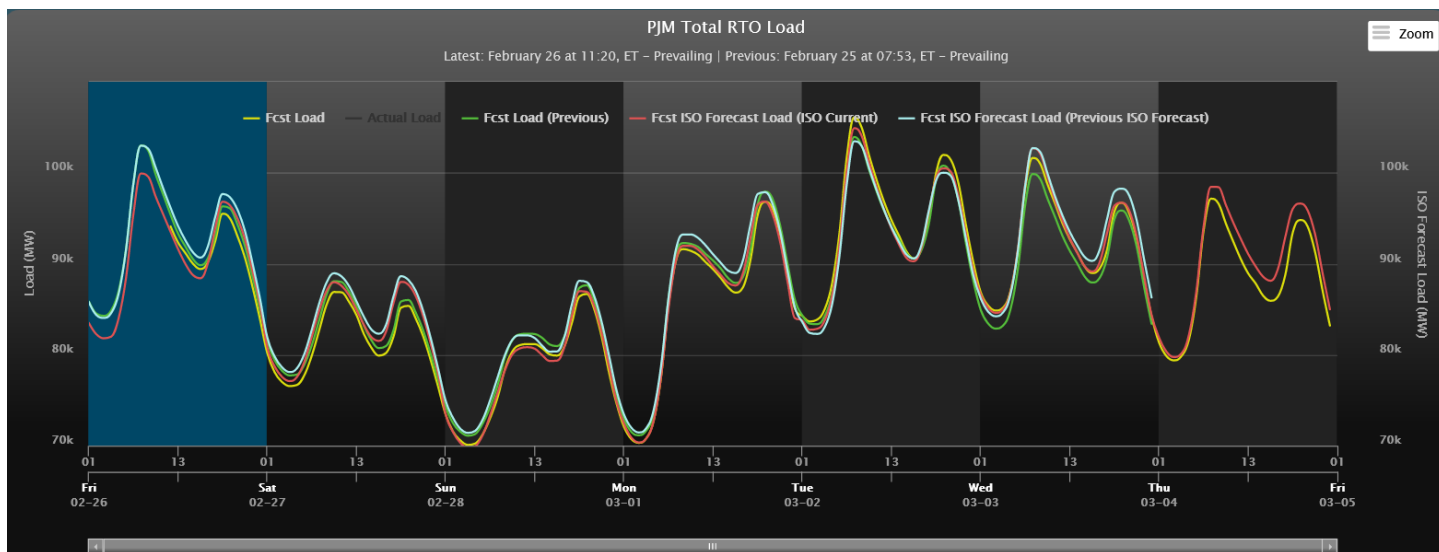
We challenge you to leverage our data to integrate machine learning and optimize data management in the front, middle, and back offices of your trade floor.

POWERFUL ENERGY FORECASTS REQUIRE POWERFUL COMPUTING

Even if you're not a quant, you can do more with your market data if you're paired up with the right research team. The Enverus MarketView® Fundamentals experts have utilized machine learning and artificial intelligence for more than 20 years with their Oil & Gas Analytics tools, as well as their Pattern Recognition Technology (PRT) forecasting tools. They continue to improve their forecasting techniques and push boundaries by implementing new technology via deep learning.

The next generation of deep learning builds on the latest technologies by utilizing more granular data and more computing power. We've laid the foundations to expand use of this technology across the energy landscape, including supply/demand model forecasting, natural gas forecasts and more power load forecasting models in 2020.

Figure 2 | Enverus Trading & Risk Offers Cutting Edge Short-term Load And Price Forecasts To Electric, Gas, Solar, Hydro, And Wind Markets Using Machine Learning And Deep Learning.



Pricing data is vital to creating accurate forecasting tools, but the combination of pricing and fundamental data is even better. Whether your area of focus is crude, natural gas, NGLs, or power markets, the Enverus fundamentals experts team has mountains of production and scheduling data, models, and forecasting tools for all energy trading professionals.

Whether you like to build your own forecasts, or are just too busy to find the time to do it, the MarketView Fundamentals team allows you to be as involved—or uninvolved—as you need to be when shaping opinions on energy markets.

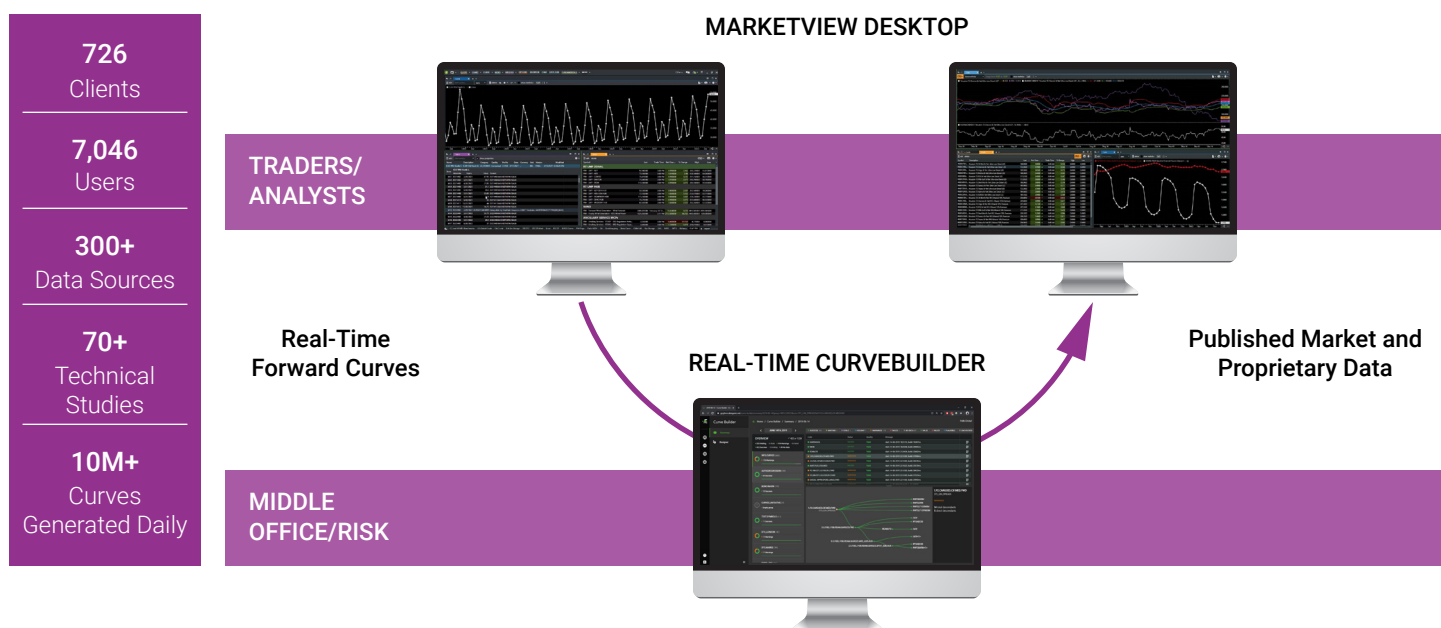
WHY WAIT UNTIL END-OF-DAY? FORWARD CURVES SHOULD UPDATE IN REAL TIME

With the new decade will come new standards for price data delivery. It's 2020, are you really still waiting until the end of the day to process and manage forward curves?

You can't analyze company risk or accurately value your PNL in commodity trading without forward curves. This vital part of the business is changing rapidly as analysts beef up their coding skills. It's no small investment of time or money, but many energy companies' trade divisions are turning to in-house solutions for managing the thousands upon thousands of data points required for building complex forward curves.

Yet as we approach a new decade, traders are also asking themselves, "Is our in-house curve management a solution or a headache?" The answer is leading many analysts to Enverus' Curves-as-a-Service (CaaS) software tool, CurveBuilder. CurveBuilder is a fully managed service that doesn't cut corners and harnesses the power of MarketView data. It automates market data collection, stores clients' business logic, runs curve calculations, and distributes curves in real time.

Figure 3 | Update Your Forward Curves In Real Time With Enverus Curvebuilder Solutions. Make The Most Of Your Marketview Desktop By Enhancing It With Published Market Data And Internal Company Data.



YOU HAVE THE POWER TO DECIDE HOW TO PROSPER

The 2020s have already kicked off as an unprecedented and tough decade for commodity markets. The uncertainty of it all is why commodity traders wake up every morning to battle another day. Many say it's what keeps them going and guessing throughout their career.

You can't always predict where the market is heading, but you do have the power to utilize new tools to make better decisions. Whether you choose to harness alternative data and send it off to your quant, or prefer a more white-glove service by entrusting your market data with us, Enverus offers a suite of data analytics that is sure to improve your decision making and put you in a strong position.