Energy Studio: Impact

Optimizing asset decisions with analytics-ready data




S&P Global
Commodity Insights

Section One

‘Energy Studio: Impact’ Fundamentals

Learn more about key workflows and who they are designed for. The section also covers the main platform features and explains underlying data by listing available datasets. Visit us at spglobal.com/Impact

About ‘Energy Studio: Impact’

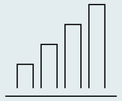
‘Energy Studio: Impact’ is a platform that transforms big data into real-time analytics across the entire energy value chain at the speed of curiosity.

It covers upstream, midstream, emissions, and commodity pricing datasets and was created to help executives, financial analysts, engineers and geoscientists make better decisions faster.

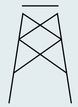
Built on S&P Global’s best-in-class energy data, ‘Energy Studio: Impact’ provides the ability to extract meaningful insights from complex technical data in a matter of seconds not weeks.
Whether you are trying to understand what drives productivity, quickly screen M&A candidates, or benchmark performance, our data, and integrated workflows will get you there faster.

The platform can tackles the main challenges facing today’s energy and financial capital market professionals:

Review and aggregate type curves at varying levels of granularity for every producing well in North America



Quickly and accurately predict asset’s future production



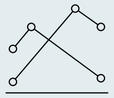
Easily identify underperforming wells that could potentially be improved with recompletions

Quickly determine if a certain operator is a good investment candidate

Benchmark assets against your peers to determine how your strategy is working

Make smarter M&A decisions faster

Validate operator claims of forecasted production on potential investments



Understand overall trends in the energy industry without being an industry expert

Platform data

The ‘Energy Studio: Impact’ platform integrates pre-built and ready-to-use disparate datasets across the entire North American energy value chain, from permits to production, and covers upstream, midstream, emissions, and commodity pricing.

The platform includes the following analytics-ready data:

Rigs and permits

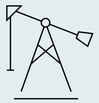
Rig data extends back to 2013, while permit data captures all active/expired permits throughout time.

Acreage valuation

Quality-based acreage maps for every square mile in all North American plays. Acreage quality is benchmarked by distance- and vintage-weighted well performance within each square mile.

Transactions and assets

All closed transactions and assets on the market, including company polygon map layers.



Wells and production

350+ attributes in the well and production table for all 6+ million wells. Includes geologist-picked landing zones via S&P Global’s PRODFit solution, well/completions design, and monthly reported liquids, gas and water production.

Predictive production

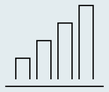
Type curves and production forecasts for all producing wells in North America. Additionally, predict production of non-existing wells utilizing more than 4,000 machine learning models.

Production decline

Monthly well-level production decline models, up to 55 years, for all wells exhibiting peak production, derived from Harmony’s proprietary AutoDecline. Leverages AI-enhanced ARPS based model with complete visibility on all assumptions.

Well-level economics

Derived well-level CAPEX and breakevens.



Remaining inventory

Acreage and inventory table showing remaining acreage for each operator, play, acreage quality rank and economic viability.

Map layers

County lines, well paths, midstream infrastructure and subsurface geology (isopach, thermal maturity, structure and faults).

Platform features

The flexible nature of the platform makes it easy to use pre-built dashboards or create custom dashboards. Impact comes with 11 base dashboards, and unlimited options to create new dashboards, add custom SQL measures, and share with team members. The platform is device agnostic and allows users to consume over 620+ million rows of data without the need to refine the dataset.

Ease of use

Anyone can dive into the pre-built dashboards and immediately begin to tell a story with the data.

Custom SQL

Ability to create custom, dynamic, sensitivity analysis utilizing parameters and custom SQL.

Performance

Device agnostic, Impact allows clients to consume over 620+ million rows of data without the need for refining the data set.

Workflows

Eleven pre-built, configurable, dashboards that address common workflows, allowing clients to derive value from the data day one.

Customize your experience

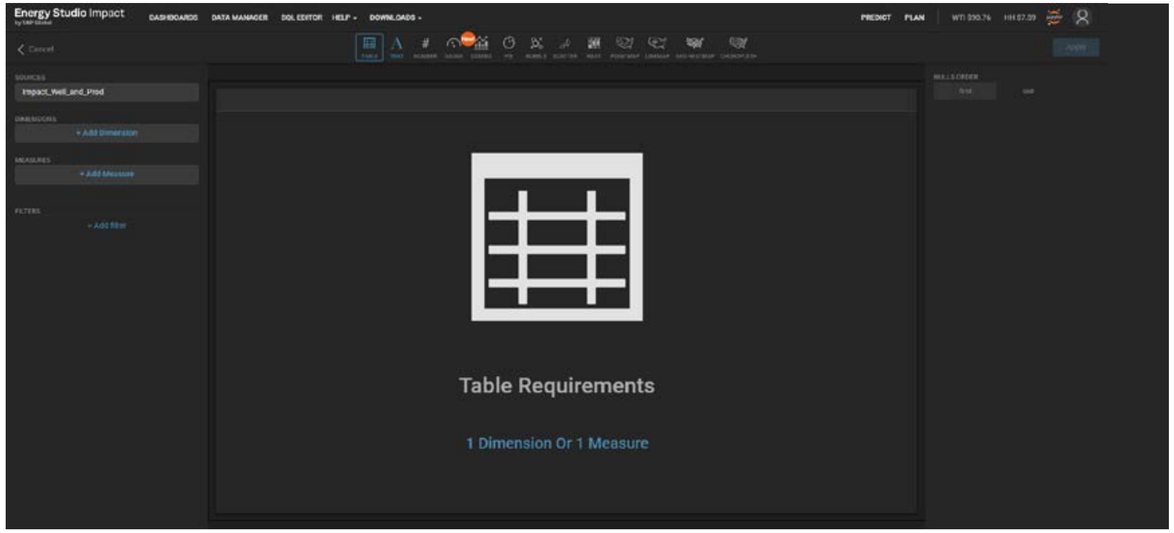
‘Energy Studio: Impact’ is designed to allow users flexibility over creating their own workflows. Eleven pre-built , configurable dashboards allow clients to dive in and derive value immediately, but each user can create, save and share custom dashboards to suit their given workflows. Parameters and custom SQL tools allow for dynamic scenario and sensitivity analysis as well as custom measures.

‘Energy Studio: Impact’ allows you to bring your own analysis and assumptions to life. The platform’s SQL tools allow you to:

Create custom fields and measure

Customize assumptions on derived data attributes to model different scenarios and determine sensitivities

Modify assumptions and visualize the results



Create your own custom dashboards from a variety of out-of-the-box charting and mapping features. Save and share your workflows with your team and collaborate in real time.

Section Two

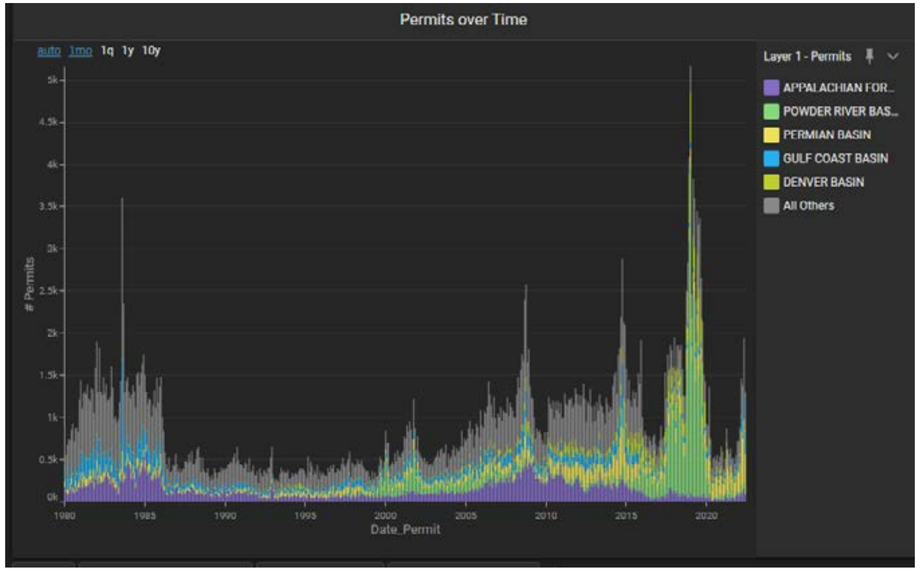
Key Workflows To Model Industry Trends and Predict Production

Learn more about the platform's workflows for analyzing past and present industry activity, including permitting, drilling, and completions. These trends provide insight into a play's lifecycle and potential production. Visit us at spglobal.com/Impact

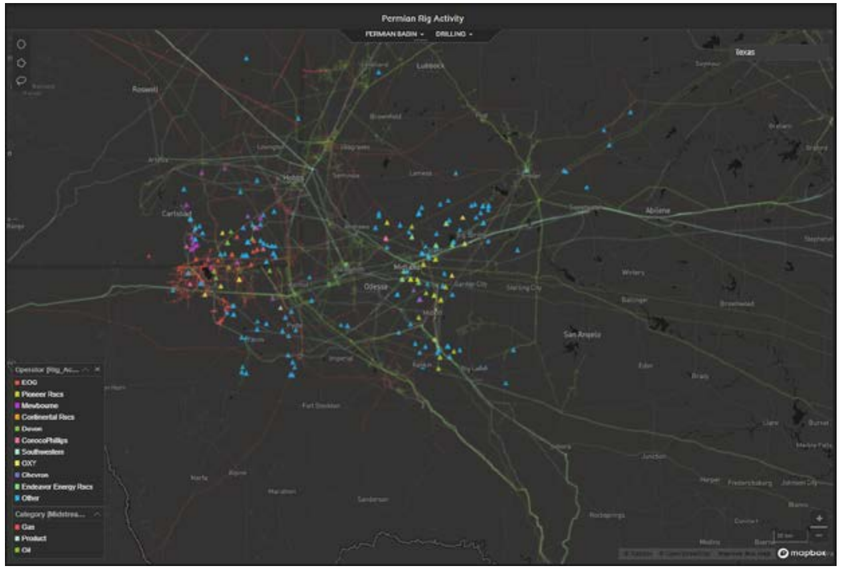
Understand current and historical industry trends

Stay ahead of the curve with the latest permitting and drilling activity. The ‘Energy Studio: Impact’ platform’s rig and permit data is updated daily and includes data back to 2013. You can sort permit activity by the operator to see where each operator is focusing, and how their drilling activity has changed over time. In one click you can determine which permits are on undeveloped acreage. You can also view permits by type to see how many permits are for new drills compared to recompletions.

Rig data is another valuable tool for understanding current industry activity. Keep track of where your competitors are drilling, plan ahead for future service opportunities, and know when and where to expect production. Add the acreage quality layers to see how many rigs are drilling in high-quality areas and who the operators are. With this information, you can identify high-grading practices sooner than ever before. Round out the analysis with midstream data to understand the operational complexity of getting the hydrocarbons to the pipelines.



Permits issued over time in the U.S.

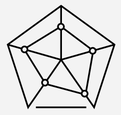


Drilling activity in the Permian Basin, colored by operator, with the pipeline network in the background.

Get insight into historical engineering trends

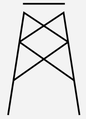
Well designs and completions practices change over time. As operators develop basins, they learn what works and what doesn’t. Operators adjust and optimize lateral length, well spacing, proppant volume, fluid volume, number of frac stages and more. For many operators, improving completions and well designs is the key to improving performance.

Analyzing basin-wide engineering trends gives insight into how well design and completions affect production, in both the core and fringe areas of a play. Looking at these trends helps identify correlations between well design, completions characteristics, and well performance.

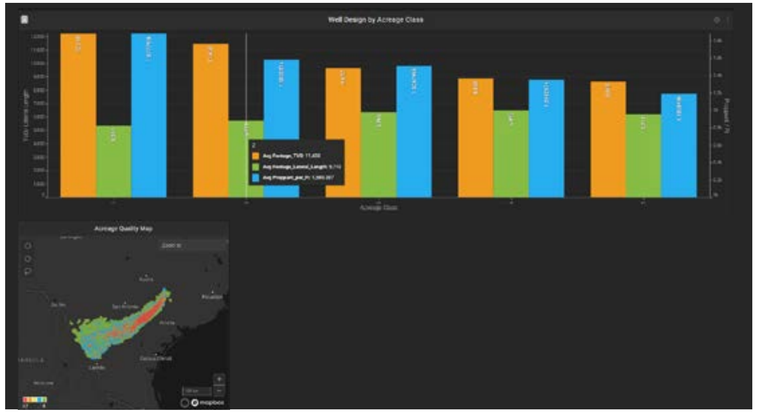


Compare the completions designs of the over-and underperforming wells

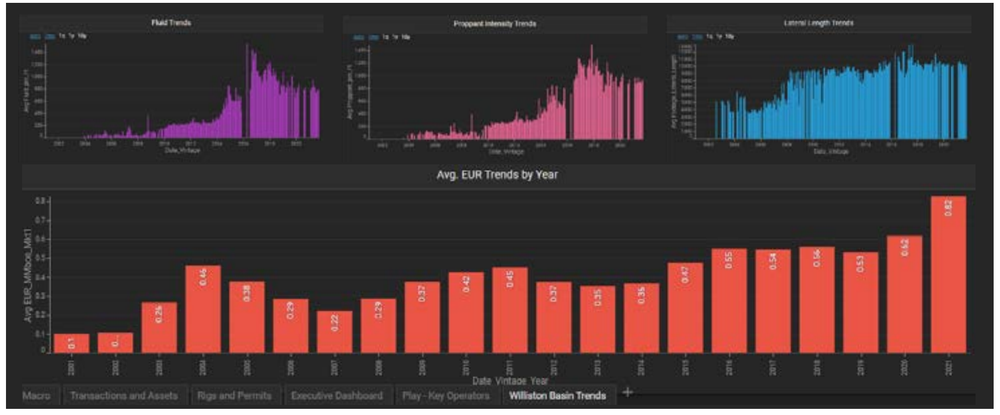
Identify completions differences between a basin’s core and fringe areas



Analyze completions by service company



Acreage class and well designs in the Eagle Ford. Compare proppant volume, TVD and lateral length of wells in each acreage class. Identify overperforming Eagle Ford wells, analyze their engineering and apply the practices to underperforming or undeveloped areas.



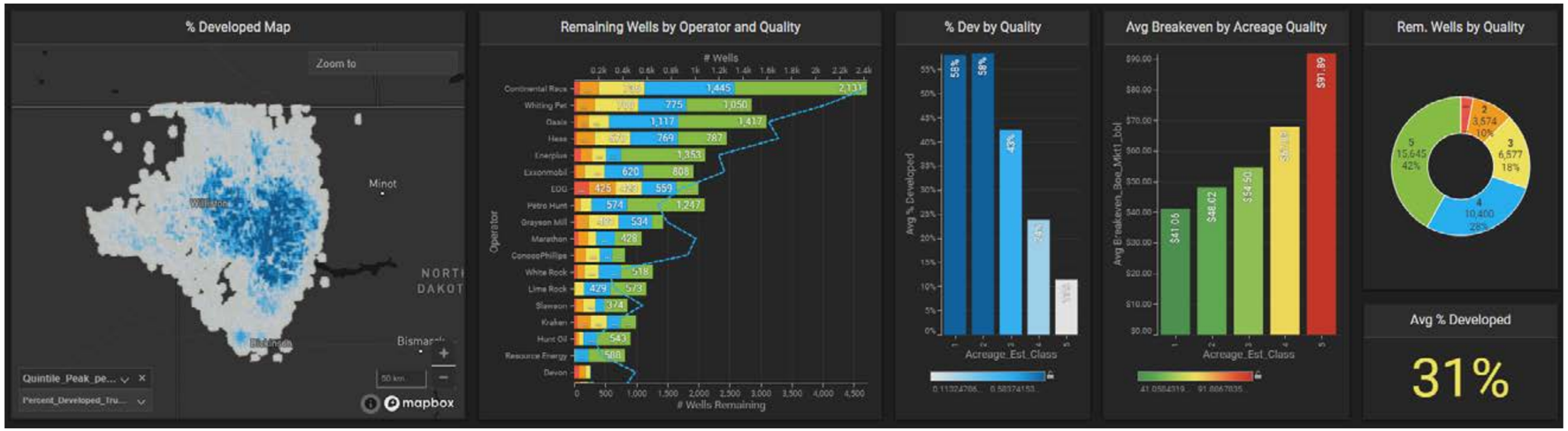
A major operator’s engineering practices over the past 20 years in the Williston Basin. Their wells’ EUR has increased over time, as they have optimized fluid volume, proppant intensity and lateral length.

Evaluate the lifecycle of a play

Gain a full understanding of what a play has to offer, which operators have room for growth and what future production might look like. Determine what the price of oil or gas needs to be to make a play economically viable.

The platform includes analytics-ready data for:

- Current rigs and permits
- Amount of acreage developed
- Operators with remaining acreage
- Quality of remaining acreage
- Economics
- Historical transactions
- Available assets

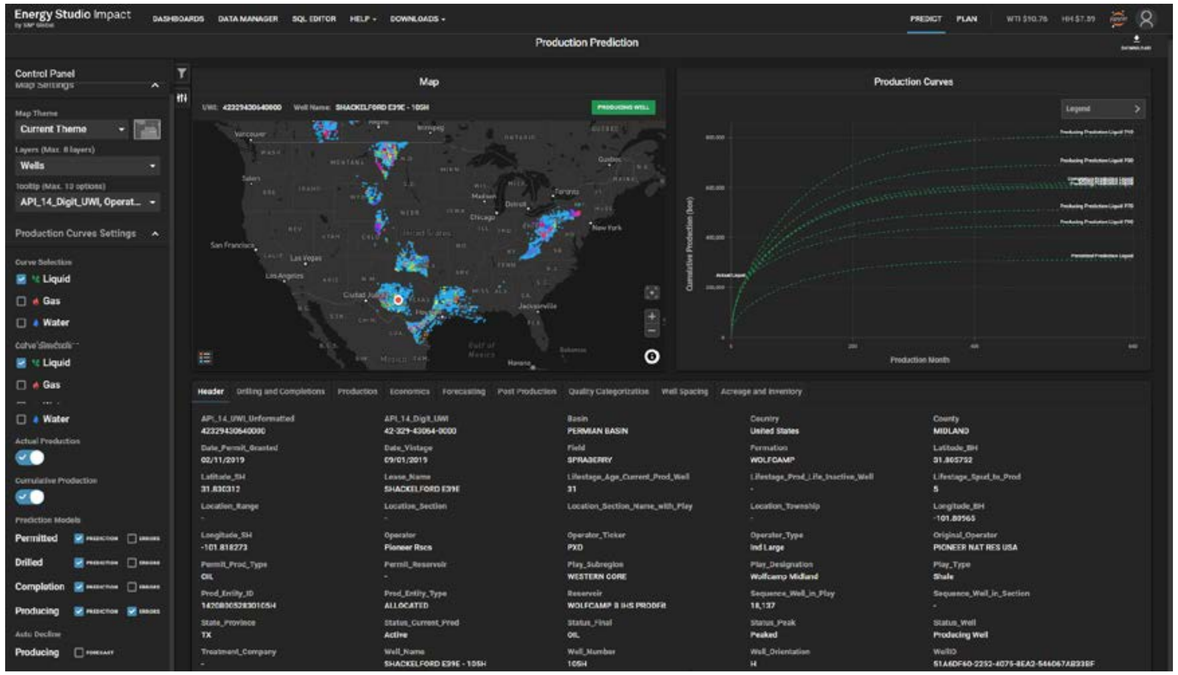


A birds eye look at the Bakken Shale. 31% of the total play has been developed; however, 70% of the remaining wells are in the bottom two acreage classes. At current oil prices, those wells are still economically viable. Continental Resources, Whiting Petroleum, Oasis and Hess have the largest acreage positions remaining.

Validate operator claims about future production

When assessing M&A candidates, don’t rely on operators to provide data about their assets. ‘Energy Studio: Impact’ has historical, current and predictive data to help you accurately model production and make investment decisions with confidence.

After evaluating an M&A candidate’s potential and comparing it to offset acreage, validate their claims about future production. The platform has type curves for every producing well in North America, so you can independently forecast their asset’s future production. Additionally, plan a future well at a specific location, input design parameters and determine expected production.

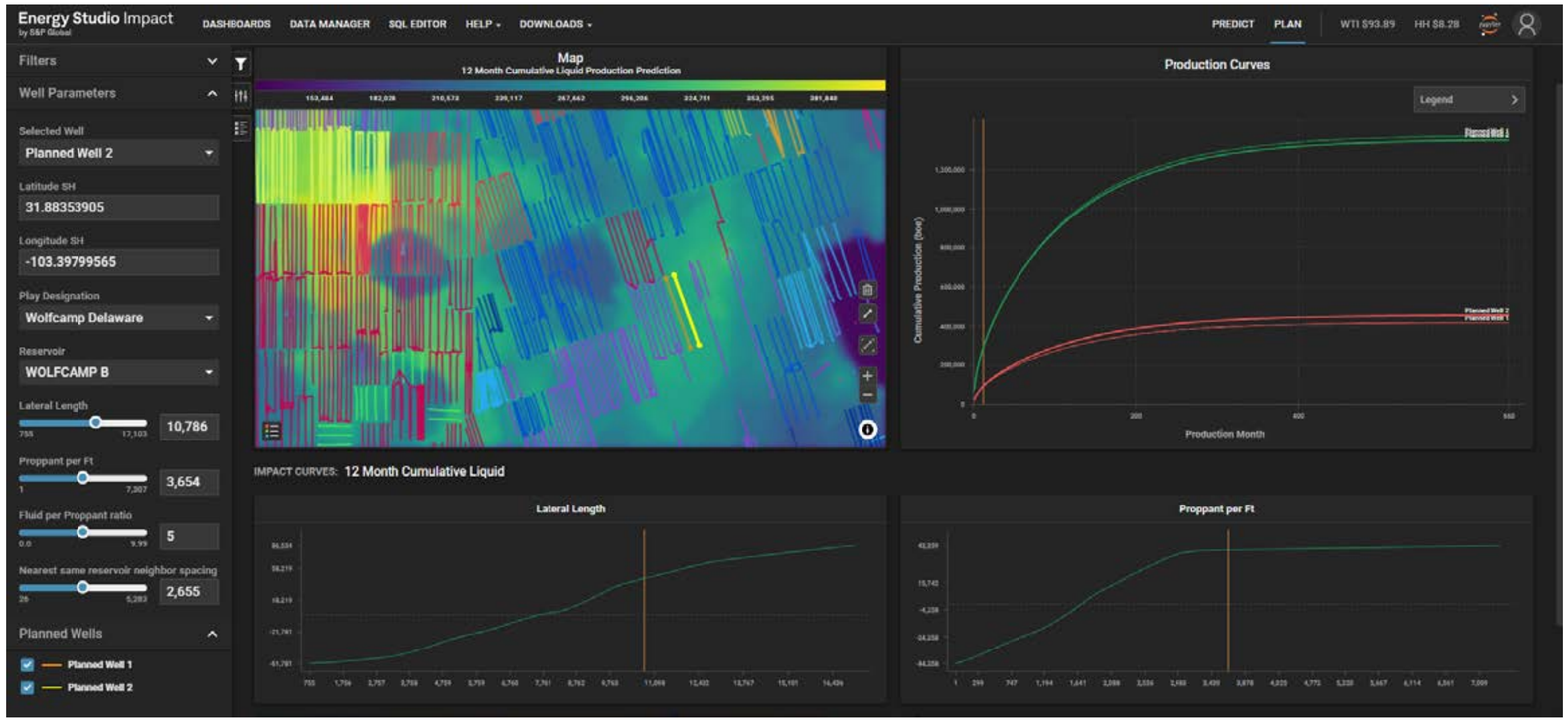


View predictive production for existing wells at all stages of a well’s life: permitted, drilled, completed, and producing.
Plan a hypothetical well and determine production.

Predict production for future wells

Leverage data science with a few clicks within Impact’s Plan/Predict module which uses over 4,000 predictive production machine learning (ML) models to allows users to plan wells, modify parameters and determine the resulting production.

Plan a well or group of wells in a given play and bench and modify well design parameters to predict production. Utilize impact curves in order to quickly identify the correlation between well design parameters and well productivity, resulting in optimum well design to maximize productivity.



Predicted production for two planned wells in the Wolfcamp Delaware based on specific well design.

Section Three

Key Workflows For Asset Optimization

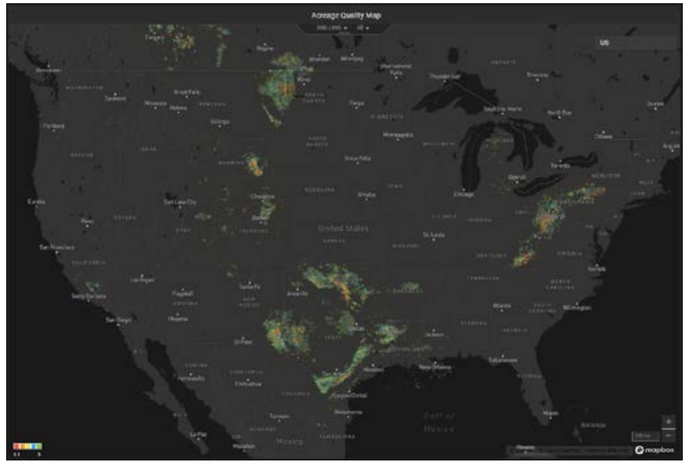
Learn how to use acreage quality maps, well spacing and historical production/completions data to make a development plan for your asset. Offset production data and type curves can be used to identify candidates for recompletion and model an asset's future production. Visit us at spglobal.com/Impact

Put performance in context with acreage quality maps

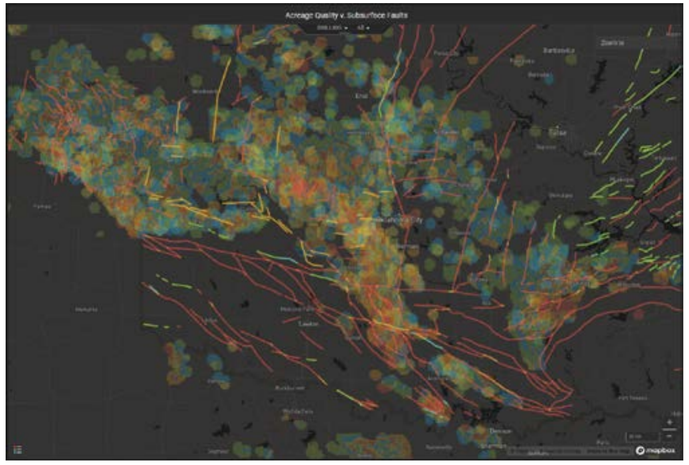
‘Energy Studio: Impact’ features an acreage quality map for all of North America. Each square-mile grid cell is graded from one to five, where one is the highest quality acreage. These rankings are based on the performance of the wells within each square-mile cell. The rankings account for the surrounding acreage and are weighted by the vintage of the wells.

Use the acreage quality map to:

- High-grade your acreage
- Predict future production
- Create an asset development plan
- Evaluate purchase and investment opportunities
- Determine the life cycle of an area and the operators within it
- Identify which operators have over or underperformed relative to their acreage quality



Acreage quality across the U.S. Class 1 and 2 acreages represent the core areas of the basins, shown in red and orange.



Acreage quality (shading) in the Mid-Continent region compared to geologic faults (lines). Geologic data provides valuable information for high-grading acreage.

Identify recompletion candidates

Are your wells meeting their full potential? Find out by comparing well performance to acreage quality. Underperforming wells that are in top-tier acreage may be candidates for recompletions. Use the detailed completions and engineering data to determine why certain wells in your portfolio did not perform as well as expected.

Completions practices change over time. Compare underperforming wells to their peers and analyze completions practices across each play.

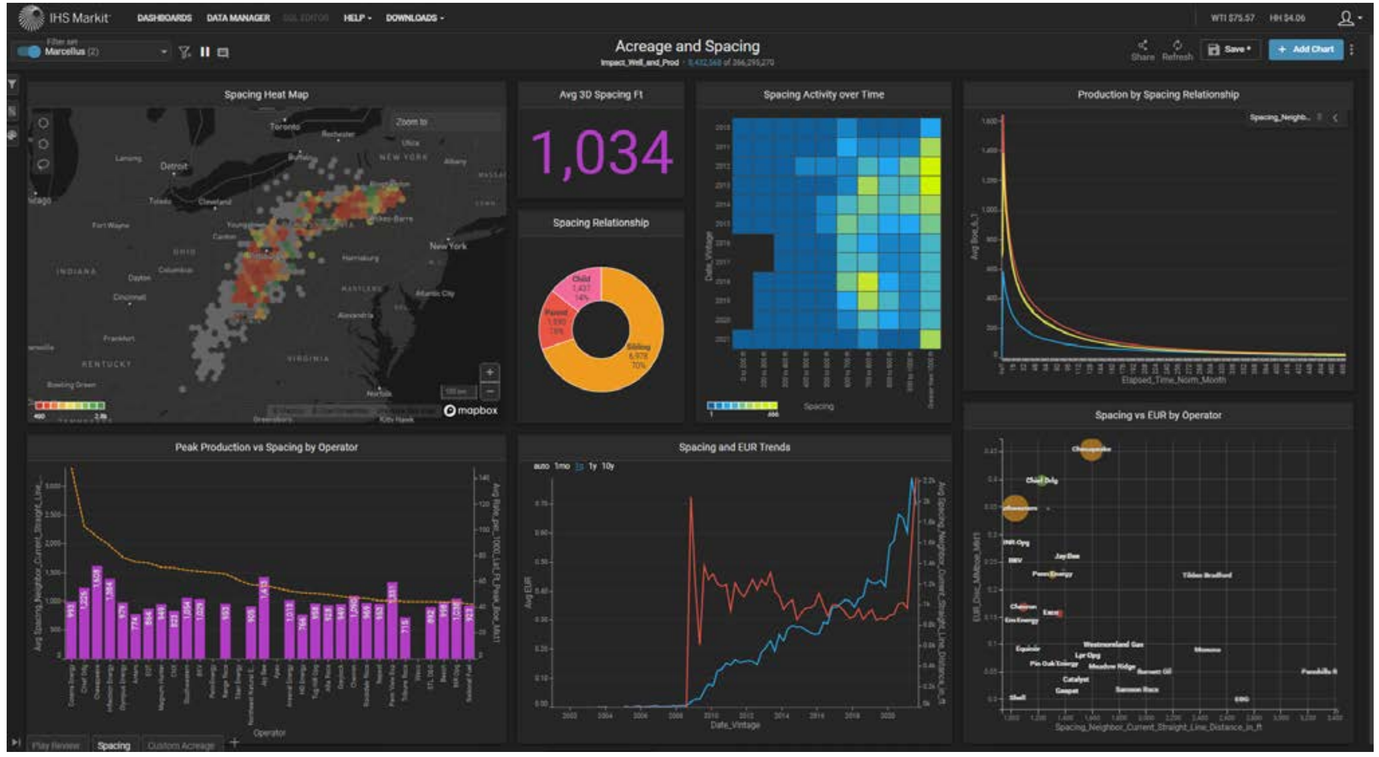
Completion trends in the Haynesville from 2002 to 2020. Proppant intensity, number of frac stages and fluid volume have all increased over time.

If your underperforming wells are in high-quality acreage, it may be time to recomplete them using modern completions techniques.

Determine optimal well spacing

Create the best development plan for your asset with a solid understanding of potential correlations between well spacing and productivity. Identify parent, child, and sibling wells and whether productivity has been affected by offset drilling. Determine what portion of wells in an area are fully bound, partially bound, or unbound.

Well spacing impacts both production and future development opportunities—understand the impact of spacing before you drill, and set your asset up for success.



High-level spacing trends in the Marcellus

View spacing at the well level or aggregate averages to the reservoir, play or basin levels.

Look at vertical, horizontal and 3D well spacing, including left and right neighbors

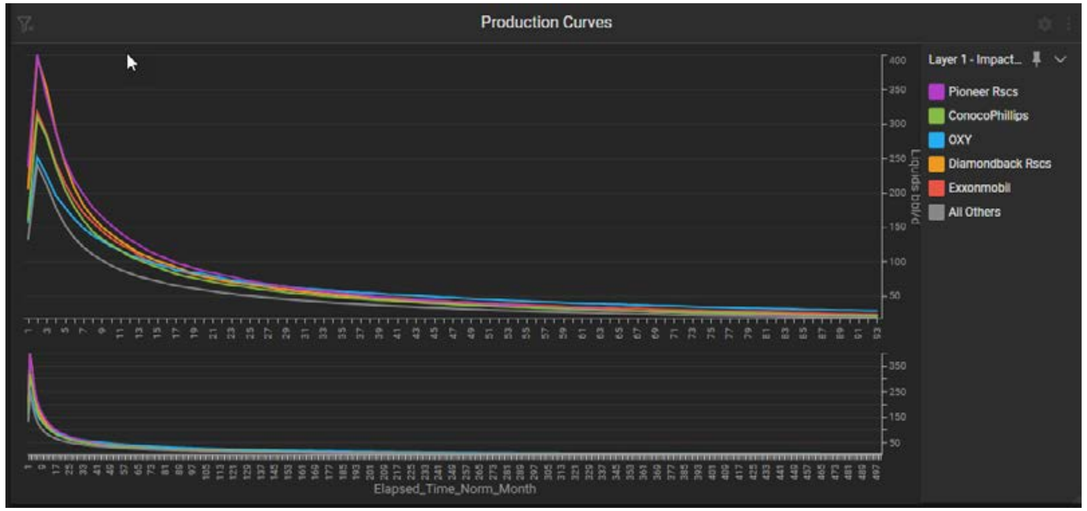
Analyze parent-child-sibling well relationships

Determine forecasted production with pre-loaded type curves

‘Energy Studio: Impact’ is pre-loaded with type curves for every producing well in North America that has peaked. Artificial intelligence and Harmony’s proven screening methods were used to partition wells and produce hyperbolic parameters to generate accurate production forecasts.

The type curve dataset saves hours of work and removes analytical limitations. For operators with limited datasets that are restricted by basin, formation or discipline, pre-generated type curves are critical. Users have access to type curves for entire basins, enabling analysis at a much larger scale than most operators have access to. These type curves provide a comprehensive, unbiased view of production forecasting—without tedious manual calculations.

Left: production curves and cumulative production for all wells in the U.S. Right: details of hyperbolic parameters (by well) for all wells in the U.S.



Liquid production curves showing historical plus forecast production for 55 year or until terminal decline for all wells in the U.S. Figure shows the first 100 months of production.

Section Four

Key Workflows To Benchmark and Evaluate Performance

Learn more about custom benchmarking. Benchmarking tools provide insight into your company's performance and M&A candidates' performance. Visit us at spglobal.com/Impact

Evaluate operators for M&A potential

Investment opportunities come up quickly. Are you ready to respond? ‘Energy Studio: Impact’ helps you quickly weed out bad M&A candidates, so you focus on the best opportunities. From there, you can drill deeper and complete a detailed analysis with your company’s specific metrics.

The data in ‘Energy Studio: Impact’ can help you fully understand an operator’s portfolio and that portfolio’s future, without relying on the operator to provide you with data. Better understanding leads to better business decisions.

Where is your acreage in proximity to your M&A target’s acreage?

Is their acreage in the core or the fringes of the basin?

Is there more left to drill or is their acreage fully developed?

Are they over or under performing on their given acreage?

Pioneer’s Wolfcamp Midland acreage colored by quality (left) and percent developed (right). Red and orange represent high-quality acreage, while darker blue represents more developed acreage. The high-quality acreage areas are highly developed.

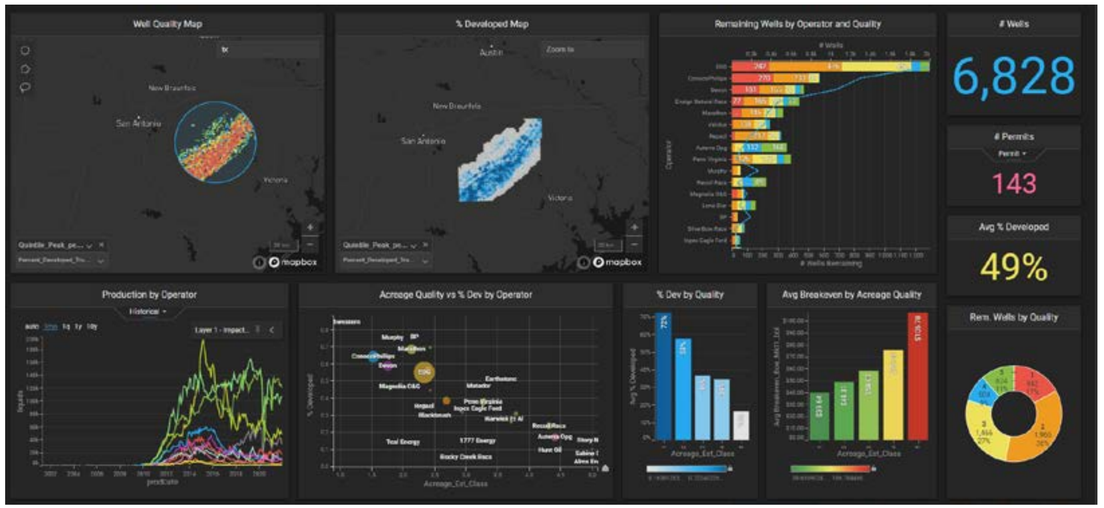
Benchmark operators by basin

Companies with their eye on a specific basin can quickly evaluate the performance of all operators in the area. Comparing all operators in a basin contextualizes performance and potential, so you can make M&A decisions with confidence.

Use offset drilling, completions and production data to evaluate a target’s performance against their peers.

Compare a potential M&A target’s well performance to acreage quality maps to see if the wells have reached their full potential, or if there is room for improvement.

Segment operators by play and create custom analyses to rank potential purchases according to your company’s KPIs.



Core Eagle Ford acreage. The area is 50% developed, with the majority of remaining wells in second-class acreage. EOG has the largest number of remaining wells, although ConocoPhillips has more first-class acreage positions.

Compare companies side-by-side

With ‘Energy Studio: Impact’, you can quickly understand how two operators compare, how your company is performing relative to your peers, or evaluate an investment opportunity.

Benchmarking companies against peers or competitors provides valuable context for performance. You can get insight into how a company is performing overall, performance in a certain play, or performance by company division.

Use the benchmarking tools to compare:

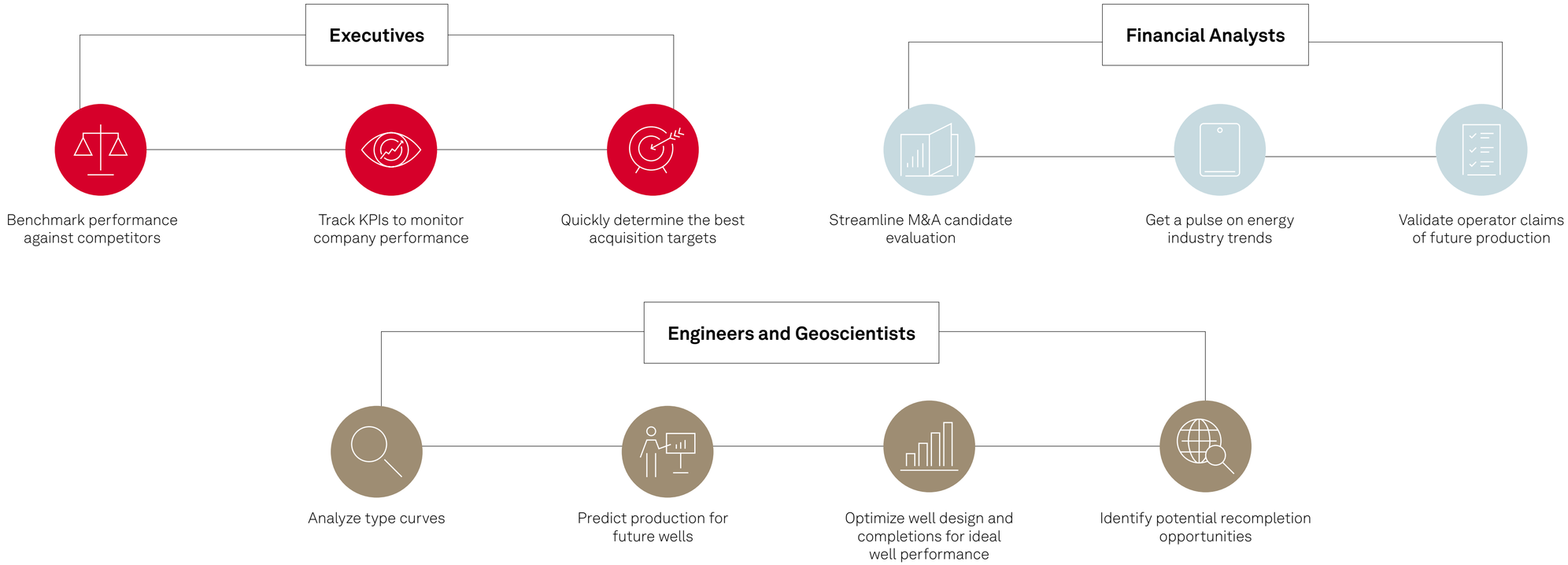
- Breakeven
- Average type curves
- Well design and completions practices
- Acreage quality
- Average well productivity
- KPIs specific to your company

Benchmarking companies against peers or competitors provides valuable context for performance. You can get insight into how a company is performing overall, performance in a certain play, or performance by company division.

A side-by-side comparison of ExxonMobil and Chevron in the Permian. The two companies are neck and neck, with similar breakevens, completions practices and number/quality of remaining wells.

How ‘Energy Studio: Impact’ can help you?

Purpose-built for executives, financial analysts, engineers and geoscientists.



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Want to see the platform in action?
Book a 15-minute personalized demo session

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