

Biorefinery Cost & Margin Analytics



In the drive towards a sustainable bioeconomy, companies aim to promote environmentally-friendly and economically viable biorefinery systems. Yet, understanding global biorefinery competition requires complex calculations and a deep knowledge base. Companies spend considerable time collecting and analyzing data on macroeconomic trends, cost factors, and supply-demand dynamics to assess competitiveness and boost profitability.

The Biorefinery Cost & Margin Analytics tool, powered by S&P Global Commodity Insights, addresses these challenges by providing a user-friendly way to benchmark the global biorefinery industry. Utilizing extensive knowledge and robust data, it allows companies to explore cost and margin variations based on geography, production capacity, technology, feedstock, and integration approaches. This tool empowers companies to assess biorefinery performance, identify rationalization opportunities, and evaluate potential acquisitions.

Key Features:

- Comprehensive biorefinery modelling, with 45+ biorefineries in North America covering over 90% of the capacity in the region. Ensuring your simulations are based on a wide range of real-world data.
- Output provided by biorefinery, region and company with possibility of user-inputted price forecast scenarios including feedstock scenarios. Allowing for simulation of your specific needs and alignment with business requirements.
- Annual cost and margin curves covering periods up to 5 years back and 10 years forward, providing a comprehensive view of past trends and future projections, helping to identify long-term patterns and opportunities.
- In-depth analysis of biorefinery profitability metrics including by-product credits, net margin, feedstock costs and more. Delivering you that complete financial picture, enabling a deeper understanding of what drives profitability in your operations.
- Insightful operational metrics such as biorefinery level margin comparison, feedstock sensitivity by time and level cost and margin curves. Helping you understand how different variables impact your biorefinery's efficiency and profitability.

Questions our tool can help answer

- How can I benchmark performance of the biorefinery industry over time?
- What is the position of our biorefineries versus our competitors or acquisition targets?
- How can I identify weak performing biorefineries that are at-risk of rationalization?
- How have companies performed historically and how will they perform in the future?

How do our clients use the Biorefinery Cost & Margin Analytics tool?

Biorefinery Benchmarking

- Evaluate the competitive position of existing assets locally, regionally, or globally.
- Review cost and margin estimates for competing assets by location and technology.
- Understand the impact of new capacity to an existing assets' performance.

Portfolio Improvement

- Understand risk and exposure to feedstock price fluctuations.
- Assess relative competitiveness of future hypothetical assets.
- Explore how economics shift under different future price scenarios.

Capital Investment Evaluation

- Calculate gross and net margins of new capital investments.
- Enhance the precision of investment metric calculations.
- Conduct scenario and sensitivity analysis to validate expected biorefinery performance.

Using an interactive, Power BI dashboard that calculates production costs and margin estimates by biorefinery or region, you can:

1. Evaluate Long-Term Competitiveness of a Biorefinery

Whether assessing the position of an existing operating biorefinery or determining the viability of a new investment, the Biorefinery Cost & Margin Analytics tool provides the full functionality required to effectively perform longer-term strategic analysis and benchmark the competitive position of biorefineries. Users can select to view different regions and biorefineries for a complete analysis.

- Understand the impact of market fluctuations over the next 10 years.
- Leverage the “adjuster” model to generate user-defined feedstock and product pricing scenarios to identify exposure.
- Input hypothetical biorefineries with user customised feedstock, capacity, utilisation, operating costs and yields to fully assess the competitive position relative to existing operating biorefineries.

2. Calculate the Impact of Market Changes on Cost and Margin Performance

With production costs and gross/net margins on a quarterly and annual basis, you can evaluate and compare biorefinery performance in the near-term, long-term, as well as review historical performance. The curves include expected capacity additions in line with our supply/demand balances, as well as industry rationalization.

- Shift from annual to quarterly curves to understand impact of near-term market volatility, regulatory changes, or biorefinery rationalization.
- Alter feedstock and product prices to anticipate the effect of a volatile market.
- Compare multiple time periods to understand the longevity of a market change and assess impact of capacity additions.

Margin Snapshot (Base case)

Select Biorefinery

Biorefinery A

Select Units

\$/bbl

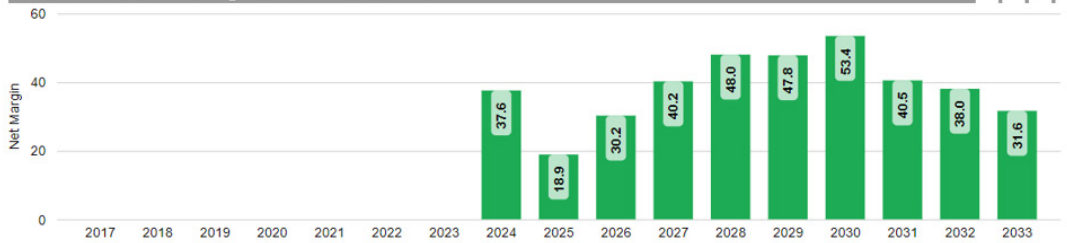
Year

2024

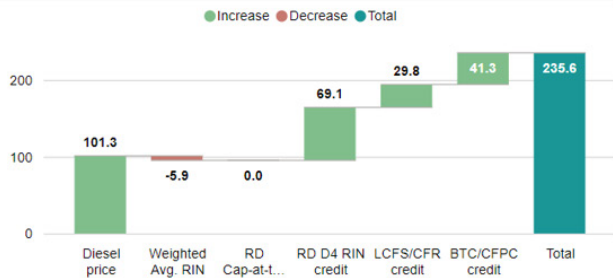
Selected Biorefinery Details

Biorefinery Name	Sub-Region	Market	Region	Startup Year	Biorefinery Configuration	Feedstock Mix	RD/SAF Delivered Location	Mode of Operation
Biorefinery A	North Dakota	US PADD II	North America	2024	ABC	Rapeseed oil: 50%, Soybean oil: 50%	California	Hybrid mode

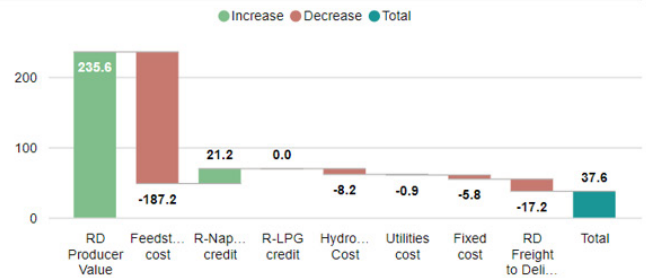
Renewable Diesel Net Margin for AIC Buford in \$/bbl



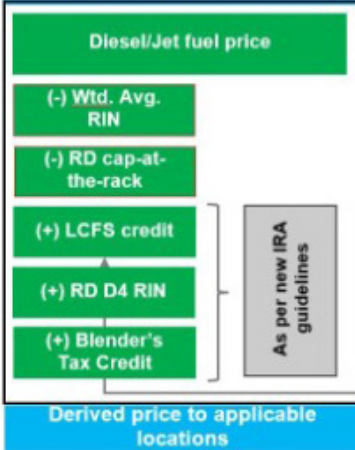
Renewable Diesel Producer Value \$/bbl for Biorefinery A 2024



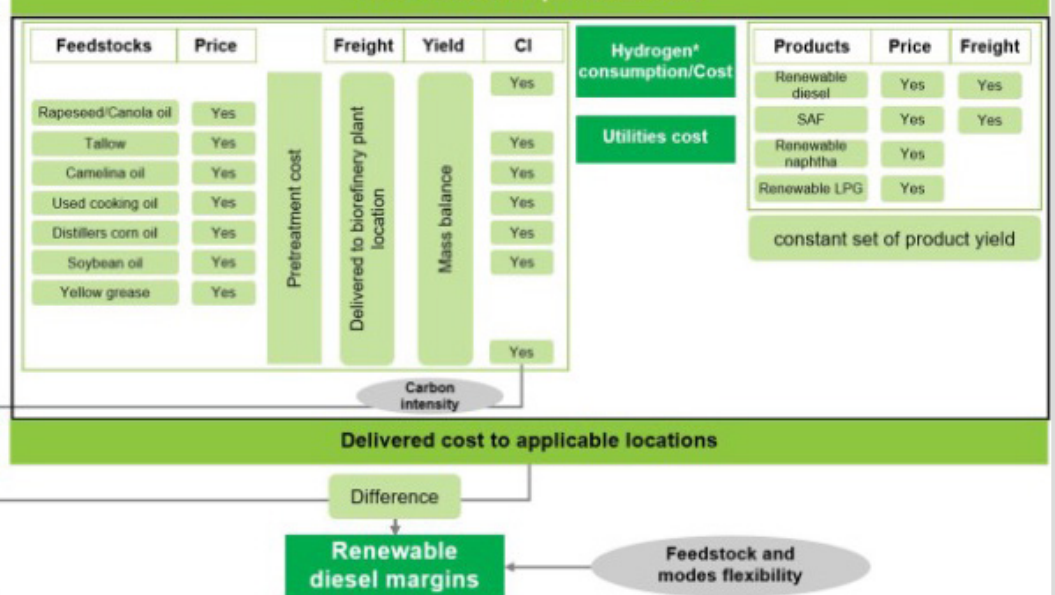
Renewable Diesel Net Margin \$/bbl for Biorefinery A - 2024



Renewable Diesel producer value



Renewable Diesel production cost



Methods available; Right now, using unit-based consumption

Benchmarking Metrics:

Biorefinery Output

- Biorefinery level yields
- Operating costs
- Logistics costs

Biorefinery Profitability

- Gross margin
- Net margin
- By-product credit

About S&P Global Commodity Insights

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