ESF NORTH AMERICA 2026
ADVISORY MEETING TAKEAWAYS

Held on the 15 January 2026

DEMYSTIFYING AI

Many businesses and leaders feel compelled to talk about AI or fear being left behind. In some cases, there is a lack of understanding about what AI actually means, and the irony is that our industry has been using forms of AI for decades, having long relied on linear programming, predictive modelling, optimization, and control systems to make complex operational decisions. These tools analyse data, forecast outcomes, and recommend optimal actions within defined constraints, which by any practical definition, is artificial intelligence.

BEYOND THE BUZZ

As the conversation around AI matures, it is becoming more polarized. Some view it as hype with an unclear payoff, while others continue to invest heavily. Either way, we've reached a point where the focus must shift from experimentation to value, ensuring investments deliver demonstrable returns.

AI INTEGRATION IN ENGINEERING

EPCs are increasingly deploying AI-driven applications to improve project deliverables, streamline engineering design, and reduce costs, benefiting engineering teams and passing the savings on to the customer. There is a significant opportunity to integrate business operations and engineering workflows into a single, unified platform. This integration is new, enabling better project de-risking and lowering both OpEx and CapEx. Furthermore, agentic AI is changing tasks such as technical and commercial bid evaluation from a once-120-hour manual effort to a 6-hour task.

DATA IS IN OUR DNA

With many companies in the industry originating from the subsurface world, data acquisition, seismic interpretation, and predictive modelling are part of our DNA. Transferring that expertise into the surface domain, across assets and refineries, requires investing in data readiness, including sensor deployment and the infrastructure required to capture high-quality operational data at scale. This unlocks predictive maintenance, improves asset reliability, and significantly enhances operational performance.

PARTNERING AND STRENGTHENING ADJACENT VALUE CHAINS

Growing demand from hyperscalers, data center owners, and AI compute users for dependable, low-carbon power is creating significant commercial opportunities for the energy industry to partner on firm, clean power solutions, such as energy parks, and other models supporting AI and data center infrastructure.

AI AS AN ENHANCEMENT, NOT A REPLACEMENT

Agentic AI is often misunderstood. While there are concerns and emerging research around the cognitive effects of offloading too much decision-making to AI, human expertise remains critical for analysis, judgment, and accountability.

AI CAN PROCESS MORE DATA, BUT LEGACY ASSETS LIMIT DATA GENERATION

We're leaning on infrastructure built and designed for a completely different era of analytics. Most plants and units were built 20 or more years ago, with fixed data flows that are difficult to change. For example, a cracker built in the 1990s lacks the physical capacity to add sensors or expand instrumentation.

CLIMATE LEADERSHIP

The AI race is on, grabbing today's headlines, but arguably just as important and equally existential for industry is the climate race, which could become a major geopolitical advantage for those who lead.

RIPPLES OF RATIONALIZATION

Despite persistent uncertainty over the past 12–18 months, the last six months have brought greater clarity on policy, driving significant rationalization and presenting a clearer view of the assets with cycle durability and structurally advantaged operability. Capacity expansion in renewable liquid fuels is likely to remain limited.

ADVISORY MEETING TAKEAWAYS

DEFINING SUCCESS IN RENEWABLE LIQUID FUELS

Today's margin environment remains very thin and unfavorable. Continued volatility and policy uncertainty are driving a shift in focus from feedstocks, capacity and volume toward durability, efficiency, reliability, and operability as key EBITDA drivers for renewable liquid fuel assets.

CAPACITY VS. VOLUME AND DURABLE VALUE CREATION

Capacity and volume are often seen as competing with durable value creation. In reality, capacity is a key driver of durable value creation, and the two should be considered in tandem rather than in opposition.

LOOKING BACK TO LOOK FORWARD

While the domestic outlook for mandates, incentives, and penalties appear relatively certain for the next three years, as we look forward, there is value in looking back over the past year to trace how these market incentives for renewable liquid fuels have evolved and what we can learn from that journey as we think about what comes next for renewable liquid fuels.

CALIFORNIA'S PERFECT STORM

2024 saw a convergence of incentives. The RIN and LCFS markets were running hot, and when stacked with the blender's credit and the alternative fuel mixture tax credit, renewable fuels could be sold at a negative price and still make profit, compressing margins for other fuels across the West Coast.

THE PENDULUM NATURE OF RENEWABLE FUEL INCENTIVES

as the political landscape shifted, and the role of petroleum products is reinforced, we've witnessed the risks and consequences of over-reliance on incentives. Leaning too heavily on them, especially by cannibalizing traditional operations for a full renewable conversion, can get you bitten. Projects must stand on their own merits, not just on incentives, with flexibility and optionality built in.

THE ECONOMICS OF RENEWABLE FUELS

Today, incentives remain in place to support both the oil and agricultural sectors in producing renewable liquid fuels. Under the RFS, ambitions are increasing again for this year and next, which should support higher RIN values and improve the economics of renewable fuels.

REAL ECONOMICS MATTER AGAIN

The "golden years" of 2022 and 2023, when RIN and LCFS values reached extraordinary levels, are unlikely to return, but renewable fuels can still be attractive as the market normalises. The key is ensuring operations are profitable and sustainable on their own, so fuels can continue to be sold even if the incentive pendulum swings again.

EXPERIENCE AND KNOW-HOW PAY OFF

The refining sector has repeatedly demonstrated its ability to adapt to complex regulatory and technical challenges, such as the introduction of ultra-low-sulfur diesel and reformulated gasoline. That experience gives the industry a real opportunity to apply the same technological know-how to keep improving performance on both the petroleum and renewable sides of the business.

ALTRUISTIC BUT REALISTIC

Sustainability must also be financially sustainable. While early leadership can help shape standards, as markets grow, mature, and attract participants with different approaches to sustainability, commercial viability becomes equally critical. Long-term success requires realism and the ability to remain profitable.

STABLE INCENTIVES FOR SCALABLE DECARBONIZATION

Extending the 45V tax credit to 2027 has been critical for low-carbon hydrogen and low-carbon ammonia, enabling projects to move forward to FID and into construction. Foreign investors are showing strong interest in blue ammonia projects on the Gulf Coast for export into the Asia-Pacific markets. This underscores the role of stable incentives in enabling decarbonization at scale.

IMO, A MISSED OPPORTUNITY?

The two blue hydrogen plants ExxonMobil is considering could eliminate approximately 9–10 million tons of CO_2 per year, but progress on these projects has been paused due to uncertainty around the IMO framework. The Trump administration's pressure to postpone the agreement is hoped to be temporary once it becomes clear that participation will actually benefit the U.S. and support domestic production of low-carbon ammonia on the Gulf Coast.

OLD TECHNOLOGIES, NEW APPLICATIONS

The OBBB 5% extension under 45V is prioritizing speed-to-market and a resurgence of proven technologies, reapplied in cleaner ways to accelerate decarbonization. Gasification is an example that has regained relevance when paired with CCUS and carbon capture.

MEME STOCK

Today, market sentiment and headline news, amplified by social media and narrative framing, can influence stock valuations in ways that aren't tied to the underlying profitability or financial metrics. In the chemical sector, reports suggest that companies announcing AI adoption can see positive market reactions, while Chevron and other U.S. energy companies' share prices jumped overnight following the U.S. capture of President Nicolás Maduro.

ADVISORY MEETING TAKEAWAYS

IS VENEZUELA A REAL STORY FOR U.S. REFINERS?

If Venezuelan heavy crude re-enters the market at scale, what does it displace, and where do those trades occur? The most direct competition is likely with Canadian barrels at Gulf Coast refineries. If Venezuelan crude does return and improves conventional feedstock economics, economic parity becomes even more important for renewable fuels, SAF, and low-carbon alternatives in a margin-sensitive market. But the outcome remains heavily risk-weighted by Venezuela's production uncertainty and political economy.

HISTORY MATTERS

Oil majors have been burned badly before by asset nationalization in Venezuela. While we've seen traders come back into the market, there's a huge difference between buying a cargo of crude and investing billions into assets. Given the history and the reality that much of the regime is still intact, a lot would have to change before companies are willing to invest billions back into Venezuela, and it's hard to see how the administration could provide the guarantees needed.

RENEWABLE FUELS IN A CHALLENGING MARKET

Renewable diesel and SAF remain the primary renewable fuel pathways, but despite significant hype around SAF, relatively little capacity has come online. The reality is that under today's regulations, there aren't many specific incentives for SAF, aside from a few states such as Illinois and Minnesota.

SAF VALUE CHAIN ECONOMICS

In North America, vegetable oils are the prioritized and incentivized SAF feedstock, but supply is limited. As SAF scales, feedstock availability becomes the binding constraint, and if the feedstocks become the constraint, is most of that premium going to sit with the feedstocks?

FROM CROP TO WINGTIP

Taking a step back and asking what is genuinely best for the world, the answer is likely localized value chains that minimize transport, complexity, and lifecycle emissions. In that case, should SAF production be concentrated in jurisdictions with the strongest incentives and most efficient logistics, with environmental attributes booked and claimed elsewhere?

VALUE CHAIN INTEGRATION

The problem with hydrogen isnt the technology or the know-how, it's the cost and value chain integration. Government incentives help, but they're not enough on their own. We need a full value chain discussion that addresses production, transport, storage, and end-use economics. Like with SAF, accounting for emissions and tracking sustainability, whether Book & Claim, PCF, or chain-of-custody, is crucial to enable us to advance these big ideas and big concepts.

ESF North America

ESF North America 2026 will bring together industry leaders in **Houston** from **May 20-21** to explore how technology, innovation and collaboration can drive a **resilient, competitive,** and **more sustainable** future in which the refining and chemicals industries play a leading role.

I'M INTERESTED IN ESF NORTH AMERICA 2026 »

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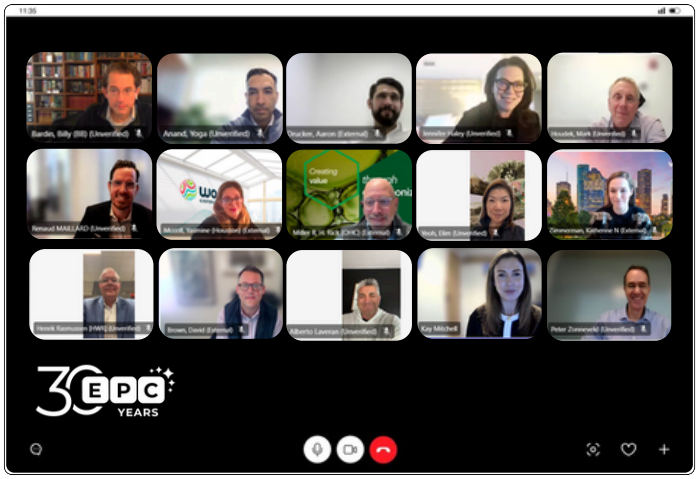

ADVISORY MEETING TAKEAWAYS

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