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Alternative Energies in United States: Navigating a Changing Landscape



Contents

Context.....

3

Advisory Board Insights.....

4

Executive Summary.....

4

Introduction.....

5

Industry Clarity: What Needs to be Addressed Now Versus Later?

6

Pivot From Green to Blue: What’s Actually Reaching FID?

8

Offtake Realities: Who's Buying, and Why?.....

10

EPC Models and Project Execution: What’s Changing?

12

Infrastructure and Supply Chain Bottlenecks.....

14

Market Outlook: The Next 12 to 18 Months.....

15

References.....

15



Context

The Energy Projects Conference & Expo (EPC Show), taking place on 16-17th June 2026 in Houston, is the largest event globally for professionals working on major energy projects. Bringing together six leading conferences under one roof, the EPC show will unite 10,000+ engineering, construction, commissioning, supply chain, operations & maintenance professionals to showcase how to deliver and operate major energy projects successfully in today's complex and challenging environment.

The EPC Show agenda is steered by a comprehensive Advisory Board, consisting of 50+ Senior Stakeholders and Project Leaders across Owner/ Operators, Utilities, EPCs, Offtakers, OEMs, Legislators / Regulators and Service Providers, with a specific focus on the planning, regulation, engineering and construction of alternative energies projects, including Hydrogen, Ammonia, SAF and Nuclear.

15+ of the Alternative Energies Advisory Board members met for confidential 90 minute meeting in August to discuss current industry developments. The EPC Show exclusive brings you insights in this report.

**All views are those of individuals only and not of their respective companies.*

**All quotes are anonymised.*



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Executive Summary

What is the alternative fuels market to do in a changing policy environment where fossil fuel is being prioritized and trade barriers are building up?

To find out, the EPC Show's alternative fuels track brought together some of the leading figures in the industry for an advisory board meeting. The conclusions were:

- The industry is pivoting from renewable-only or 'green' production to blue hydrogen and hybrid fuel models.
- Financial investment decisions (FIDs) require viable offtake routes, with new opportunities in sectors such as shipping and aviation.
- Execution models are shifting to focus on modularization and hybrid engineering, procurement, and construction (EPC) contracts.

Overall, the discussions summarized in this report illustrate that although the short-term outlook may appear challenging there is still clear long-term growth potential for players that are able to stay the course.

Introduction

It is an uncertain time for alternative fuels producers and stakeholders in the United States. The current administration is doubling down on fossil fuels, while America-first policies create challenges for global supply chains and export potential.

Against this backdrop, the EPC Show convened a meeting of a dozen of its alternative fuels stream advisory board members, to identify what opportunities are commercially viable today and what the industry needs to address in the next 12 to 18 months.

Participants included senior executives from energy companies, EPC contractors, equipment manufacturers, infrastructure developers, and chemicals companies.

This report summarizes the key points of the meeting, with quotes provided anonymously under the Chatham House Rule.



Advisory Board Insights

Industry Clarity: What Needs to be Addressed Now Versus Later?

A major challenge facing the U.S. alternative fuels sector is lack of clarity on issues ranging from the regulatory landscape to commercial opportunities. This situation is not unusual for an emerging market but has been exacerbated by policy reversals and market setbacks. Advisory board members voiced concerns over the long-term stewardship of sequestration infrastructure and the regulation of pipelines.

It is unclear, for instance, which entities should be in charge of the monitoring and maintenance of sequestration infrastructure over timeframes of 20 years or more. Another issue is what the end of hydrogen subsidies might do to project viability.

In a similar vein, the experts highlighted a lack of standard hydrogen contracts. The North American Energy Standards Board is working on such a contract after having developed similar contracts for natural gas, and this is seen as being critical to transacting clean hydrogen as a commodity. Advisory board members also called for clean hydrogen

Expert view

"One of the things that we struggle with when you look at stewardship of CO2 sequestration is the long-term monitoring and rectification of the issues that may happen down the road. Who is responsible for that? The project entity may not even be around."

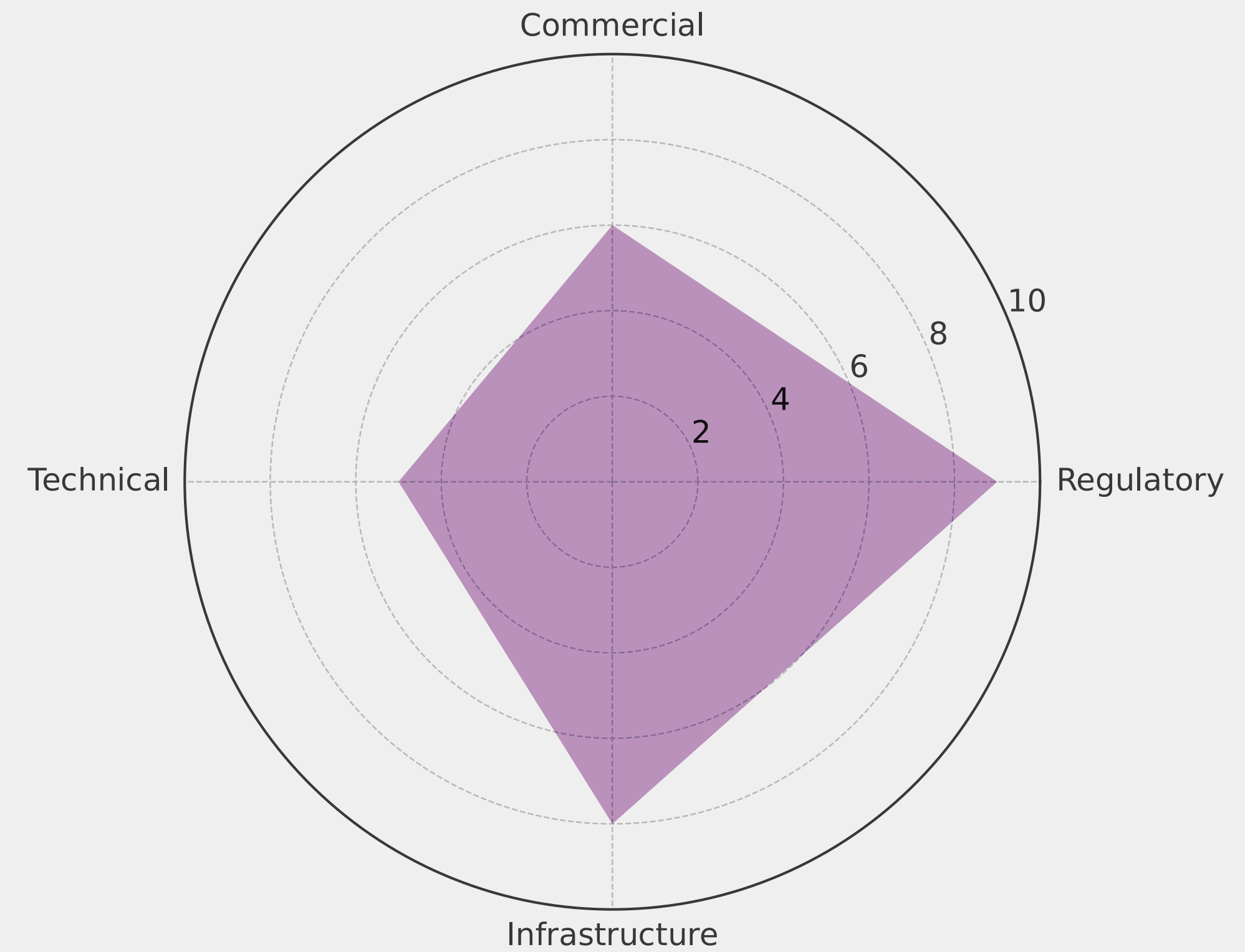


Figure 2: Alternative fuels advisory board perception of industry clarity gaps (EPC Show analysis).

standards and a certification scheme - an area that was being progressed by the U.S. Department of Energy but has not seen any updates since the start of 2025. Advisory members also called out the importance of a hydrogen carbon intensity attribute 'book and claim' market, similar to other energy markets. This enables carbon credits to be acquired separately from purchasing the carbon physically, and therefore accelerates the ability to address hard-to-abate sectors. Lastly, it was pointed out that the Ammonia Energy Association (AEA) is working on ammonia contracting with principles similar to those being addressed for clean hydrogen. This is important to U.S. exporters who will likely ship clean hydrogen via clean ammonia as a carrier.

Under the current administration, the members said, blue hydrogen producers are essentially being left to determine what carbon intensity their products should have, often based on bilateral agreements with offtakers.

This means there is a danger that producers could end up addressing different standards for their customers and for the U.S. tax authorities charged with offering credits.

One major implication of this lack of clarity is that project developers will need to be doubly sure of their likely markets before making investment decisions.

A product such as blue ammonia, for example, might end up having only limited appeal in North America, but might also not be suitable for export to regions such as Europe if produced using U.S. standards—which for now are less stringent than the European Union's.

Sustainable aviation fuel (SAF) production could face similar challenges, with Europe imposing stricter feedstock rules than what the U.S. is promoting through tax incentives.

Addressing these issues will be critical to U.S. alternative fuel producers since demand for products such as blue ammonia is expected to come mainly from export markets in the near term.

Until standardization takes hold, there is a view that the carbon intensity of fuels such as hydrogen could be dictated by the requirements and cost sensitivity of specific offtakers.



Pivot From Green to Blue: What's Actually Reaching FID?

The analyst firm Wood Mackenzie predicted in December 2024 that blue projects would account for the dominant share of final hydrogen project investment decisions in the U.S., and that prediction has certainly come to pass.

The Trump administration has rolled back many of the clean-energy-friendly policies introduced by President Biden, as well as introducing new or higher tariffs, reducing the scope for renewables growth and electricity cost reduction—and tilting the field in favor of blue projects.

For now, advisory board members reported varying levels of cost being quoted for both green and blue hydrogen projects, related to many factors – including the quality of renewable resources, access to low cost natural gas, ability to reuse existing infrastructure, applicability of tax incentives and the levels of EPC expertise.

The projects that are progressing most smoothly to FID are those that can demonstrate solid, diverse revenue streams. These can include secondary revenues from carbon capture and utilization in the case of blue hydrogen and ammonia projects.

Expert view

“Data centers are paying a higher premium on electrons than a hydrogen customer would. So electrons are going to become expensive. Opex is going to be the dictating factor for green hydrogen, even if you have optimized everything on the capex side.”

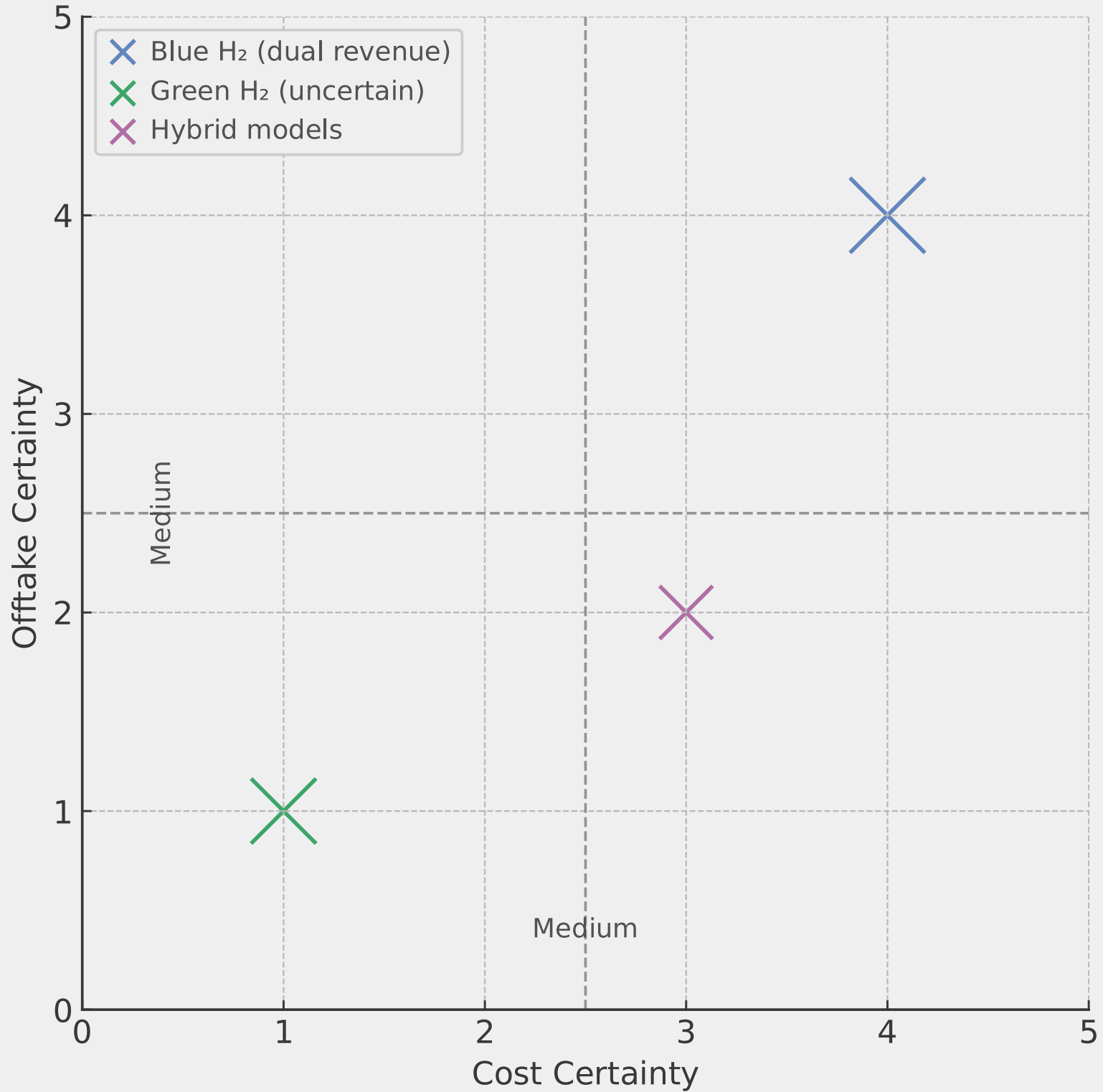


Figure 3: Green versus blue hydrogen bankability matrix (EPC Show analysis).

Pivot From Green to Blue: What's Actually Reaching

Such projects can benefit from a combination of the \$85-per-metric-ton carbon capture tax credit and income from enhanced oil recovery, for example.

Another success factor is optimal risk-sharing between project partners, since EPC contractors may not be well placed to take on all the performance risks of new technologies.

Even with this, project schedules of 18 to 24 months are not unusual, with projects sometimes undergoing pre-feasibility studies, pre-front-end engineering design (FEED) work, FEEDs, and even FEED refreshes before proceeding to construction.

This year has brought greater clarity around incentives, potentially improving the ability for boards to make financial decisions, but the market remains “very dynamic across the board,” according to one view.

At the same time, advisory board members said, the clean energy supplies available in the U.S. are increasingly sought after to power data centers.

Along with slower-than-predicted renewables growth, this is putting a premium on the renewable electricity required for green hydrogen electrolysis.

Contrary to forecasts of two or three years ago, the expectation now is that electricity will become more expensive and operating expenses will become increasingly important in determining the cost of green hydrogen production.

Unless project owners can take advantage of regionally low clean energy pricing or flex electrolyzer loads to capture electricity pricing troughs, the cost increases will dent the viability of projects and could prompt a switch to blue production.

But such switches are not without complications, including delays to project completion and the need for new permits to take into account carbon sequestration, transport, and storage.



Offtake Realities: Who's Buying, and Why?

Energy security and sovereignty concerns have distracted many potential offtakers worldwide from pursuing decarbonization, weakening demand for alternative fuels and affecting the viability of projects.

Even major industrial gas suppliers are finding it hard to obtain commitments, and a lack of offtake agreements plus low levels of market demand are emerging as major barriers for project FIDs.

Despite this, advisory board members noted growing appetite from hard-to-abate sectors such as shipping and aviation, and potential opportunities in the data center market.

Vessel fuel demand is growing following the International Maritime Organization's April 2025 approval of a net-zero framework and 2050 goal for emissions reduction in international shipping.

There are already hundreds of ethanol-, methanol-, and ammonia-ready ships on order, and a growing number in service.

Similarly, the International Civil Aviation Organization has established a global framework for SAF that sets a modest target of reducing industry fuel intensity by 5% at the end of the decade before ramping up to net zero emissions by 2050.

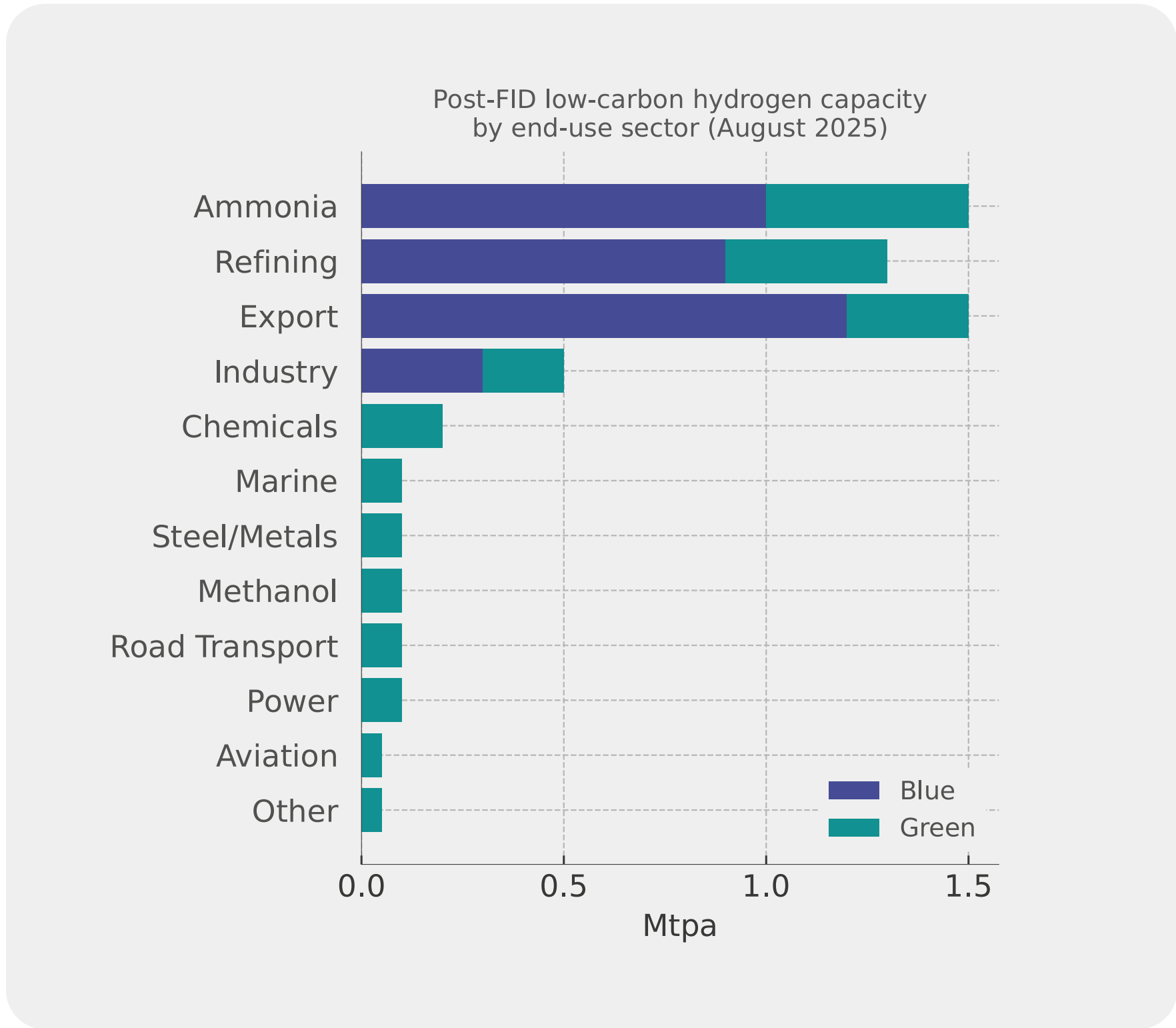
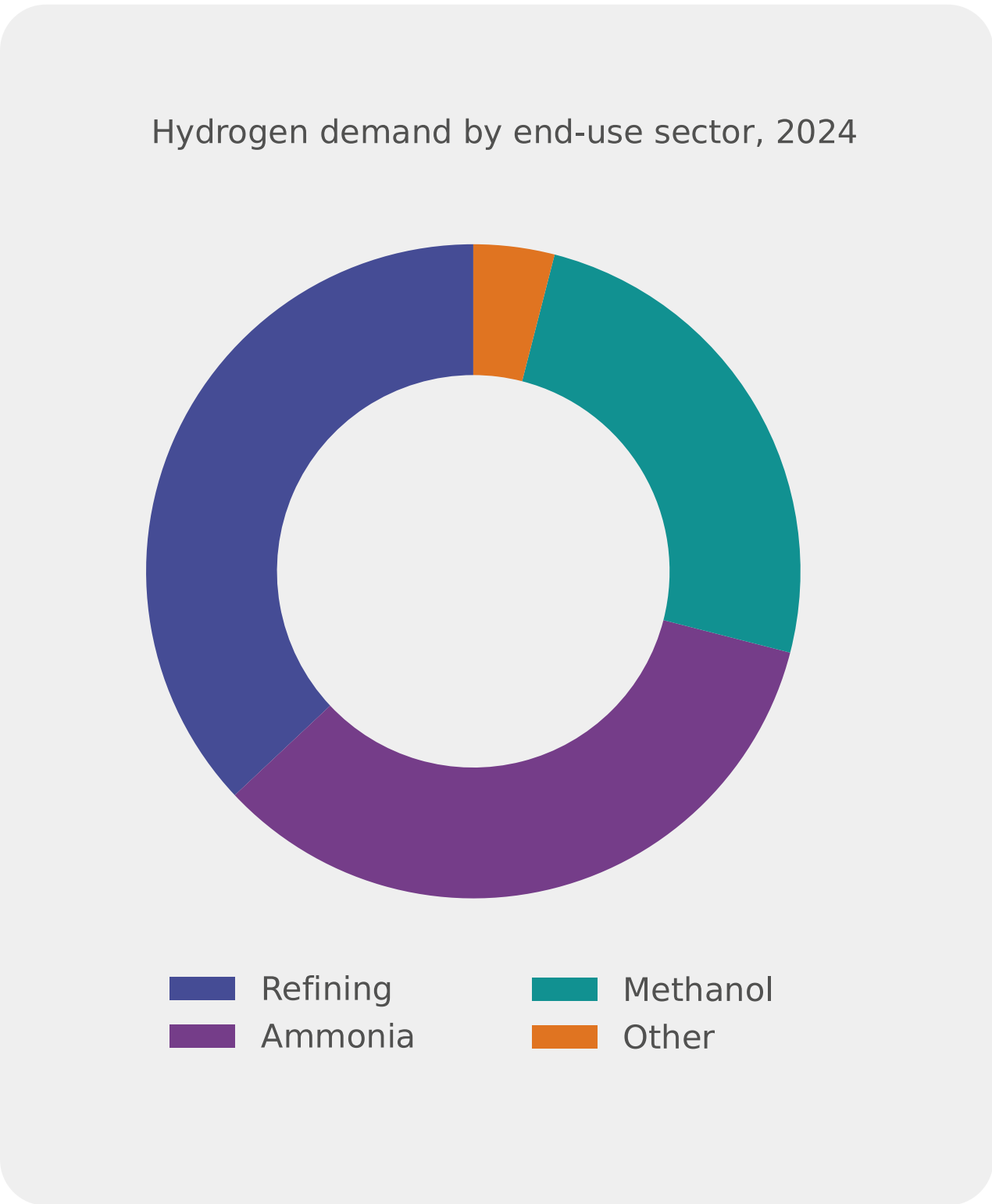


Figure 4: Global hydrogen demand and levels of low-carbon production capacity that have passed a final investment decision (FID), by end-use sector (Source: Wood Mackenzie Lens Hydrogen).

Expert view

“Stiff mandates for decarbonization of the world vessel fleet may represent an appreciable demand signal. The need to accommodate the fleet in geographies where you’re fueling them could help to catalyze or de-risk projects, particularly around methanol.”

The move to SAF has broad international support but has yet to stimulate production pathways beyond the re-use of waste and residue fats, which is the cheapest option.

Beyond this, advisory board members expect to see the emergence of biomass gasification with Fischer-Tropsch processes, an area where hydrogen and gas producers could play a larger role.

For now, an ongoing challenge with all these areas is the price of alternative fuels versus traditional options.

In most cases, uptake of premium-priced low-carbon fuel will depend on the availability of subsidies or the existence of mandates, which could make Europe an important driver of demand in the short term.

In the U.S., the pricing issue could be exacerbated by the elimination of tax incentives, giving project owners a tight window in which to secure solid long-term offtake agreements, scale production, and ultimately reduce costs.

With limited domestic demand, a question for U.S. players will be how well they can compete with foreign rivals boasting lower costs and more stringent carbon intensity standards.



EPC Models and Project Execution: What's Changing?

Another perhaps foreseeable challenge facing the alternative fuels market is that as early schemes have moved towards commissioning it has become apparent that the projects are often more complex and risky than originally envisioned.

According to advisory board members, this has led to EPC contractors often hesitating to assume technology risks without strong partner relationships or asset track records.

Another trend is growing adoption of modularization, whereby major units and components are manufactured and tested off site rather than in situ.

This can help reduce costs and delivery timeframes, particularly where serial unit production is involved, making it an attractive option in places such as the Gulf Coast where most recent projects have exceeded their budgets and schedules.

Modularization is also attractive because it can reduce reliance on on-site contractors, an important benefit given the acute labor shortages seen in

Expert view

"Modularisation allows you to drive efficiencies. In the Gulf Coast, having access to water, you can make modules bigger. Taking away man hours from the project site and putting those into a fabrication area, there's synergies that benefit the project cost and schedule."

EPC Model Selection

Traditional EPC

Lump-sum turnkey
Mature tech only
EPC holds most risk

Hybrid EPC

Shared risk
Flexible financing
Carve-outs common

Modularisation

Labor risk mitigation
Faster schedule
Logistics challenges

Figure 5: Decision tree for alternative fuels project EPC model selection in the U.S. (EPC Show analysis).

EPC Models and Project Execution: What's Changing?

areas such as the Gulf Coast. One advisory board member cited a shortage of 60,000 workers.

But modularization carries its own risks, such as adding to integration complexity and increasing transport and logistics requirements. Some modules may be too big for traditional shipping routes, and so may need to be broken down and reassembled, adding complexity.

While such challenges can be tackled by learning from early movers, the decision to adopt modularization is still often being made on a project-by-project basis based on factors such as the permits required to get modules on site.

Bank financing can add even further complexity to module production, with EPCs typically seeking a significant carve out for fixed-price construction work.

Hence, many EPCs are embracing hybrid approaches where only some parts of a project are carried out on a modular basis. Furthermore,

offshore modularization could be affected by U.S. tariffs on goods from countries such as China and India.

Adding to this picture is the need for some projects to be executed at speed.

Here again, the ability of an EPC to take on technology risk is greatly affected by the bankability and familiarity of the technologies involved, and whether the contractor has been involved in concepts or pilots.



Infrastructure and Supply Chain Bottlenecks

One issue in switching from green to blue fuel production is that the latter requires infrastructure for carbon sequestration, transportation, and storage, as well as pipes and tanks for hydrogen.

This infrastructure is sorely lacking today and is one of the biggest bottlenecks facing blue fuel project delivery.

Advisory board members said some repurposing of natural gas pipelines for carbon dioxide was taking place in the U.S., with hopes that integrated energy majors might make investments for enhanced oil recovery, but availability remains limited.

Meanwhile, permitting for new pipelines can take up to two or three years because of community concerns and manpower shortages.

Besides this, the alternative fuels market is competing for resources with an invigorated liquified natural gas (LNG) export industry and a clean energy sector that is rushing to build as much as possible before tax support schemes run out.

This situation demands early engagement with EPC partners, to align timelines and create realistic delivery plans, and an understanding of the available infrastructure capacity in areas being surveyed for development.

Expert view

"We're competing with LNG. On top of that, we see the electrical components that used to take 50 weeks to get are now taking three, three-and-a-half years. That's partly to do with the microchips and partly to do with limited resources in electrical fabrication."

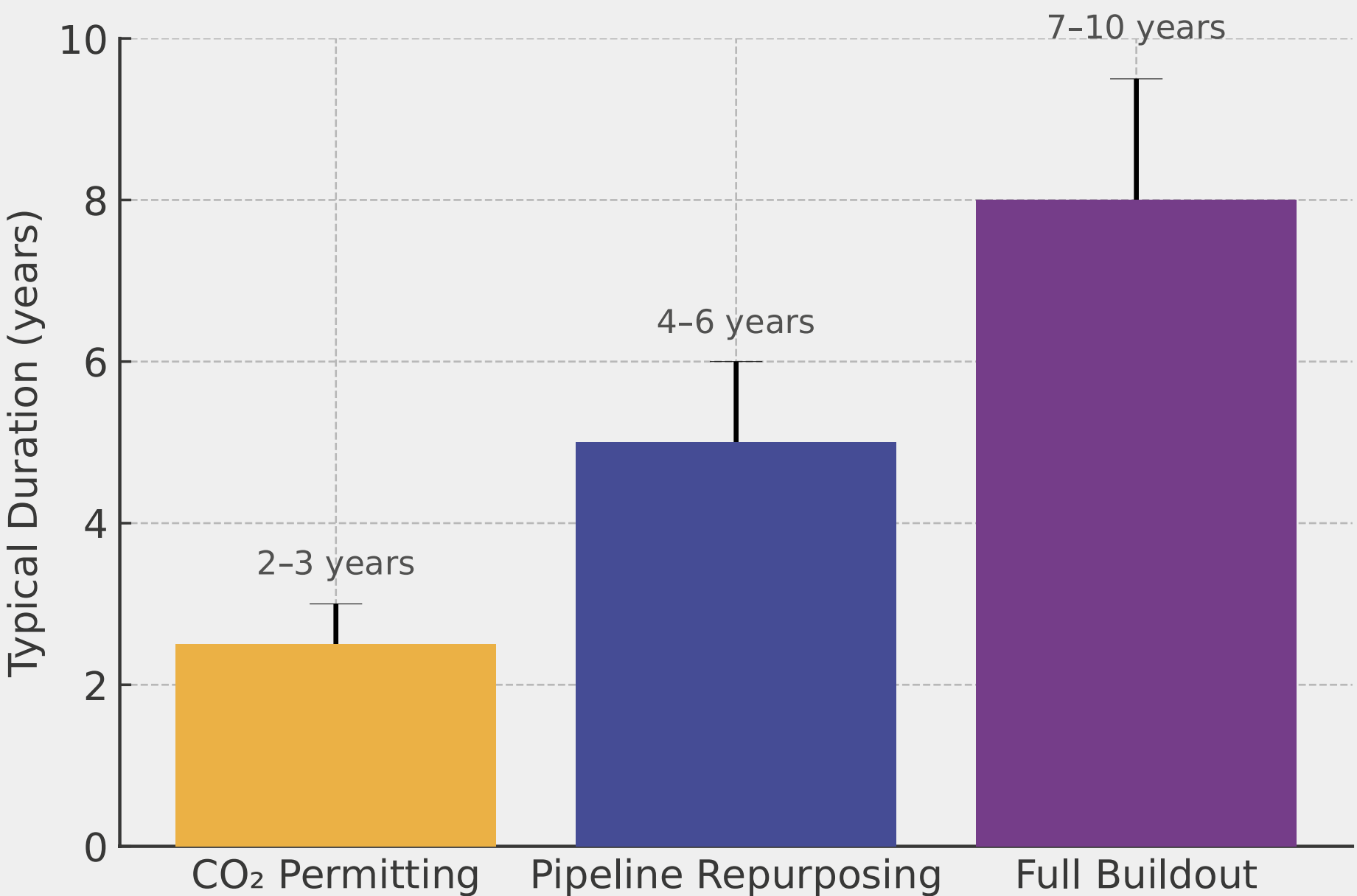


Figure 6: Typical timelines for alternative fuel project milestones (EPC Show analysis).

Market Outlook: The Next 12 to 18 Months

The advisory board meeting highlighted important uncertainties in the alternative fuels community regarding policy, infrastructure, market demand, and project financing.

The effervescence of previous years has been tempered in 2025 by the sobering realities of project development and a volatile outlook for policy and the economy. These headwinds look set to stay for the near future, challenging industry expectations of growth and maturity.

While it is true that many of the challenges being experienced by the industry are global in nature, there is a real danger that the U.S. could lose out in the coming months to regions such as Asia and Europe where momentum on alternative fuel development is being maintained.

To avoid this, the U.S. industry needs to fight for clearer standards, stronger offtake commitments,

new EPC approaches, and enhanced collaboration among stakeholders to drive project execution and market growth.

It will also be important for industry players to capitalize on the current strengths of the U.S. market, such as its world-class EPC community and deep energy infrastructure experience, not to mention the continuing value of tax incentives in the short term.

Gaining a seat at the energy policy table will not be easy over the next 12 to 18 months, as the fight for fuel engages powerful forces in U.S. industry.

To be heard, it is clear that the alternative fuels industry in 2026 can no longer be guided by technology hype but will instead need a clear focus on bankability, execution, and scale.



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1. Press release, "Key things to watch for Hydrogen in 2025", Wood Mackenzie, December 17, 2024.
2. Press release, "European refiners may hold the key to scaling green hydrogen, says Wood Mackenzie", Wood Mackenzie, August 21, 2025.