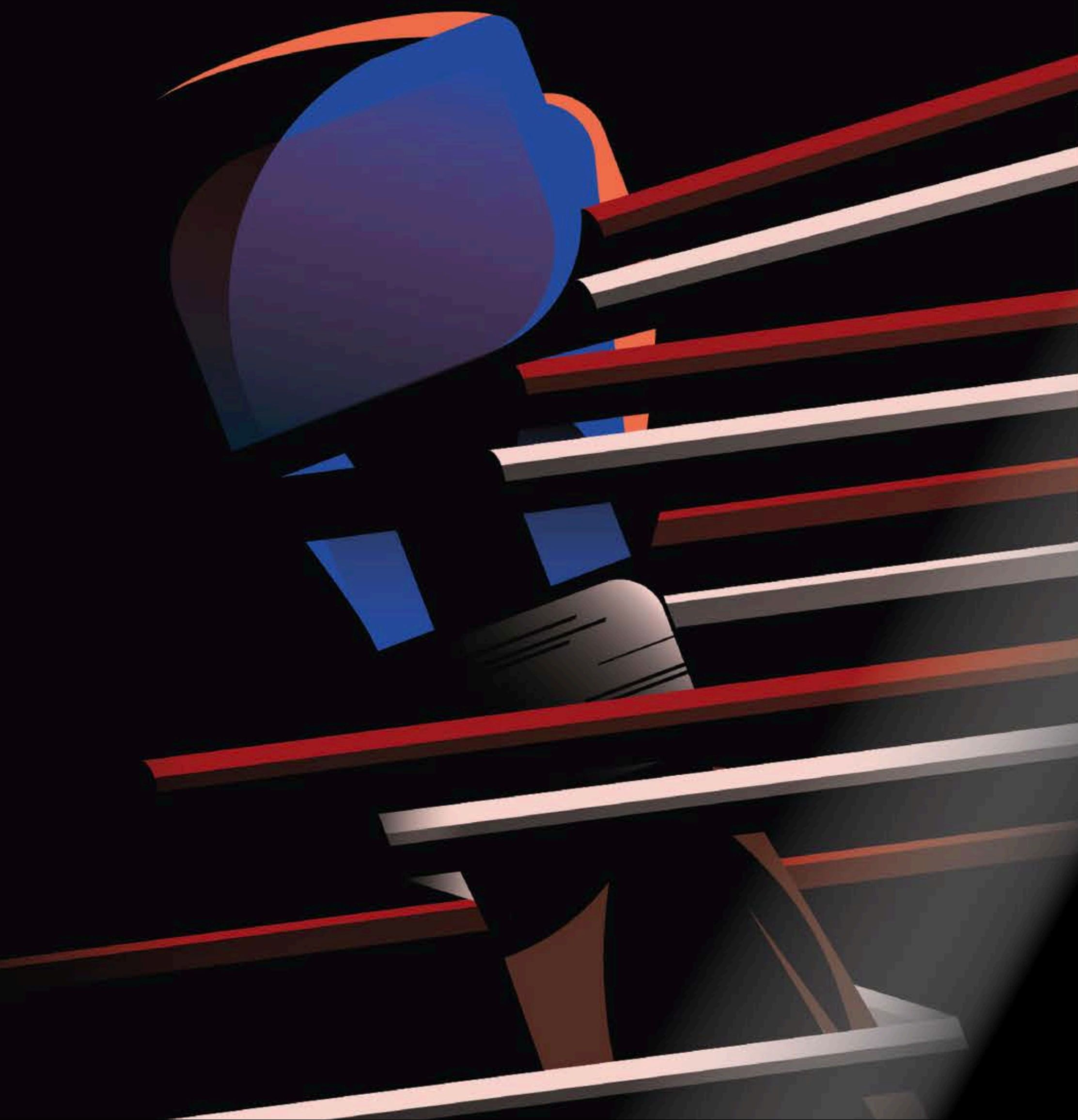
CAPSTONE

Q2 2025



DOWN BUT NOT OUT

Why Clean Fuels are Ready to Rise

Introduction

After years of sagging margins and wavering investor confidence, America's clean fuel sector may be poised for a turnaround. A series of policy developments—set to unfold in the coming months—will ease persistent headwinds and restore momentum to a beleaguered industry. Policy changes exacerbated problems at the start of 2025, but Capstone expects clarity on the 2026 Renewable Fuel Standard (RFS), confirmation of the 45Z production tax credit, and other regulatory shifts to offer a much-needed shot in the arm. This note surveys the most consequential of these developments and what they might mean for markets.

- **Capstone believes that a comprehensive 2026 Renewable Fuel Standard (RFS) proposal will be released in the fall. The RFS mandate is the key factor in increasing margins and demand for renewable diesel, biodiesel, and renewable natural gas (RNG). Even a less polished rule released in the coming months would increase renewable diesel demand by up to 3 billion renewable identification numbers (RINs) (equivalent to 1.4 billion gallons of renewable diesel). It would also address ongoing uncertainties, such as small refinery exemptions (SREs) and the use of cellulosic waivers.**
- **We believe formal proposed RFS rules will be released by year-end, with changes favorable to crop-based producers such as Phillips 66 (PSX). There has been a record drop-off in renewable diesel and biodiesel production, driven by a transition from the larger $1 per gallon biodiesel blenders tax credit and years of low demand from the current RFS rules. Market participants are increasingly relying on the guidance on the 45Z clean fuel tax credit. Despite tax credit volatility, historic market behavior shows that the release of a strong RFS mandate for future years can quickly boost margins, with tax credits acting as a force multiplier.**

- Capstone believes delays in finalizing California's Low Carbon Fuel Standard (LCFS) rules may push implementation to at least Q2 2025, or even into 2026, which would prolong weak credit prices and discourage investment in clean fuel projects. However, once implemented, we expect the increased program stringency to stabilize and eventually increase credit prices, benefiting low-CI fuel producers like Clean Energy Fuels Corp. (CLNE), Gevo Inc. (GEVO), and Aemetis Inc. (AMTX).
- Other key issues we are tracking: 1) The potential of a return of the blender's tax credit (BTC) this year, 2) The expansion of state LCFS programs, and 3) Expansion and enhancement of state-level sustainable aviation fuel (SAF) tax incentives.

A DEEPER LOOK

While the short-term sentiment towards clean fuels is negative, we believe several favorable policy catalysts will lead to improving sentiment in the next year. We are nearing a "floor" regarding sentiment towards US clean fuels policy and expect to see several positive policy moves on the horizon that will lead to improving sentiment around US federal and state clean fuels policy, these include: 1) a likely favorable 2026 Renewable Volume Obligations (RVO) decision out of the Environmental Protection Agency (EPA) (anywhere from three to six months; 2) growing comfort among investors and developers to depend on 45Z for investment decisions; and 3) favorable outcomes on several key state clean fuels policies (LCFS, SAF credits)

Exhibit 1: US Clean Fuels Policy Issues and Outlook for 2025

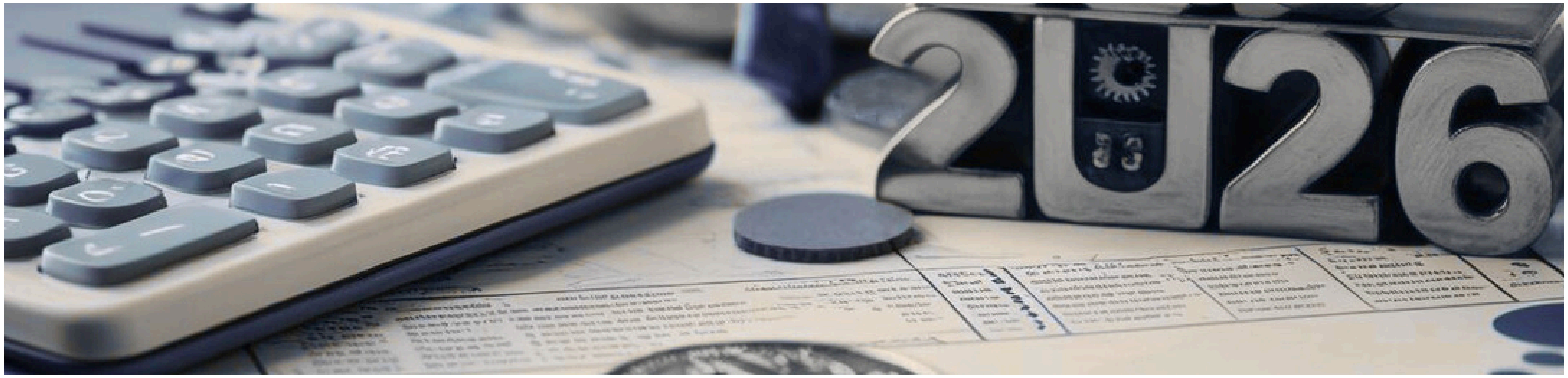
Policy	Issues	Timing			Capstone Outlook
		Q2	Q3	Q4	
2026 RFS proposal (Key Policy)	Current volume mandates are far below production capacity for renewable diesel and biodiesel, while cellulosic mandates are above ability of RNG to generate RINs				Proposal will have large volume increase and boost margins, but likely delayed until fall
Small Refinery Exemptions	EPA has outstanding SREs that could flood the RINS market if handled without balancing in a 2026 RFS proposal. Court cases are still outstanding.				If the RFS proposal is delayed until the fall, it will likely handle SREs without disturbing the market
45Z Rulemaking	Without a formal proposal, some parties are hesitant to fully value the tax credit on their books or in trades. Differentiation of feedstocks disadvantages soy feedstocks for renewable diesel.				We expect Treasury to publish proposed regulations by year-end 2025 and final regulations potentially in mid-2026.
Return of the BTC	The $1 BTC was replaced by 45Z but could be extended to 1) level the playing field for soy and 2) create larger margins for BBD fuels and feedstocks than 45Z.				We believe there will be lobbying push to extend the credit but believe odds of passage are <50%.

Likelihood: Low ○ High ●

Exhibit 1: US Clean Fuels Policy Issues and Outlook for 2025

Policy	Issues	Timing			Capstone Outlook
		Q2	Q3	Q4	
CA LCFS	The OAL rejection adds uncertainty to the implementation timeline for the LCFS amendments and delays support for credit prices.				Rules will be attempted but compliance for portions of 2025 may face litigation.
Cellulosic Waiver proposal	RFS compliance filing for 2024 has been delayed until after the proposal is finalized, delaying crucial 2024 data as well resolution cellulosic rules needed for understanding potential cellulosic waiver use in 2025 or future years.				Best case scenario is that the waiver rule is resolved in Q2 and compliance data is incorporated into a fall RFS proposal for 2026
Expansion of LCFS Programs	LCFS legislation has progressed the furthest in Hawaii with limited progress for bills introduced in New York, Minnesota and Illinois.				We expect a greater likelihood of new state LCFS bills passing during 2026-28.
Expansion and Enhancement of State-Level SAF Tax Incentives	The Trump administration has not outlined a SAF approach. In the meantime, Minnesota and Nebraska are taking steps to enhance existing SAF production incentives while Wisconsin, Nevada, Kentucky, and New York are assessing legislation to establish their own credits.				We believe states will continue to make progress over the 2025 legislative session to strengthen SAF tax credits.

Likelihood: Low High

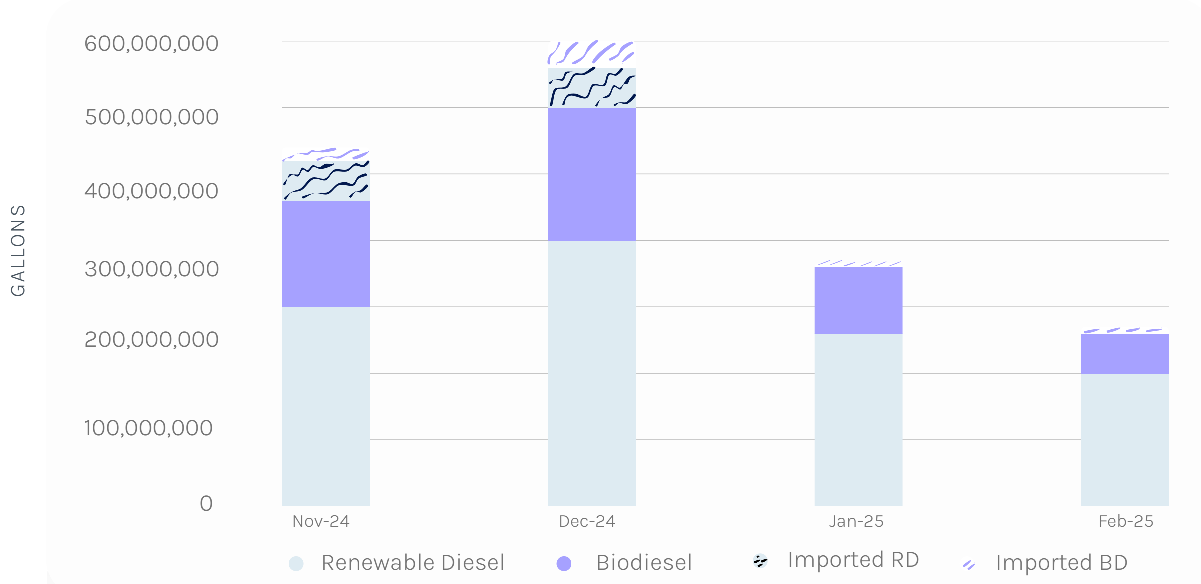


RFS Rules for 2026

The RFS is the lynchpin policy for US clean fuels. It remains the only policy with specific mandates for the use of particular fuel types, and combines with other incentives to make margins for biofuels. For example, a strong RFS requirement combines with tax credits to let BBD producers command margins that include most of the value from tax credits. Conversely, a weak RFS requirement means that biofuels producers haggle away most of the tax credit value to be competitive. In this way, the RFS mandate combines with tax credit to create big swings in margins, and this can occur suddenly around the announcement of changes in the requirements through proposed rulemakings.

The proposed RFS rules for 2026 were due in October of 2024, may arrive as soon as May. The rules can't come soon enough for an industry hampered by three years of rules that have set biomass-based diesel (BBD) fuels demand well below nameplate US capacity, which has grown to over 6.5 billion gallons from under 5 billion when the 2023-2025 rules were set in 2022. Combined with the transition in 2025 from the blender's tax credit to the less valuable 45Z producer's tax credit (see sections below), the industry has shrunk production by almost half at the start of 2025 (see Exhibit 2). There is broad consensus that a large Renewable Volume Obligation will be proposed for 2026, which will help stem the pain at renewable diesel and biodiesel plants.

Exhibit 2: Monthly US Consumption of Biomass-Based Diesel Fuels



SOURCE: CAPSTONE ANALYSIS, EPA DATA

But the same discussions urging high volumes indicate that the administration is still developing a proposal, and proper development takes several rounds of interagency review and approval by OMB before a proposal can be presented. This can take as much as six months. A hasty, politically expedient RVO (using work started under Biden) could end up with a half-baked rule that could be undone by a court case on SREs (see section below) or a resolution of the cellulosic waiver proposal for 2024 volumes (see section below).

A quick proposal with high volumes would only be partially helpful as smart traders would know that there would be a lot of risk of these unresolved issues. But with Trump recently angering farmers, the likelihood of a hasty rule to appease them has increased. Our base case is still that the Trump EPA is starting from scratch (not recycling Biden's work) and needs ~six months to get this done correctly incorporating a logical decision on SREs that appeases the courts as well as incorporating a decision on the cellulosic waiver proposal for 2024 and the compliance data from 2024, which has been delayed until after the finalization of the cellulosic waiver proposal.

Whichever timeline the EPA attempts, there is high certainty that the volumetric increase will be substantial and bring relief to an embattled BDD fuels producers, but is unlikely to change the needle on cellulosic RINs dynamics that have been permanently spooked by the potential return of the cellulosic waiver.

Small Refinery Exemptions

Under President Trump in 2017 and 2018, EPA began issuing small refinery SREs to small refiners (with throughput capacity under 75,000 barrels per day [bbls/d]) who petitioned for a financial hardship exemption. These exemptions lowered RINs prices and biofuels demand when they released RINs back into the market – equivalent to 4%-8% of the annual mandates. The resulting RIN oversupply disturbed the market balance and put downward pressure on all RIN prices, with cellulosic RIN prices particularly impacted.

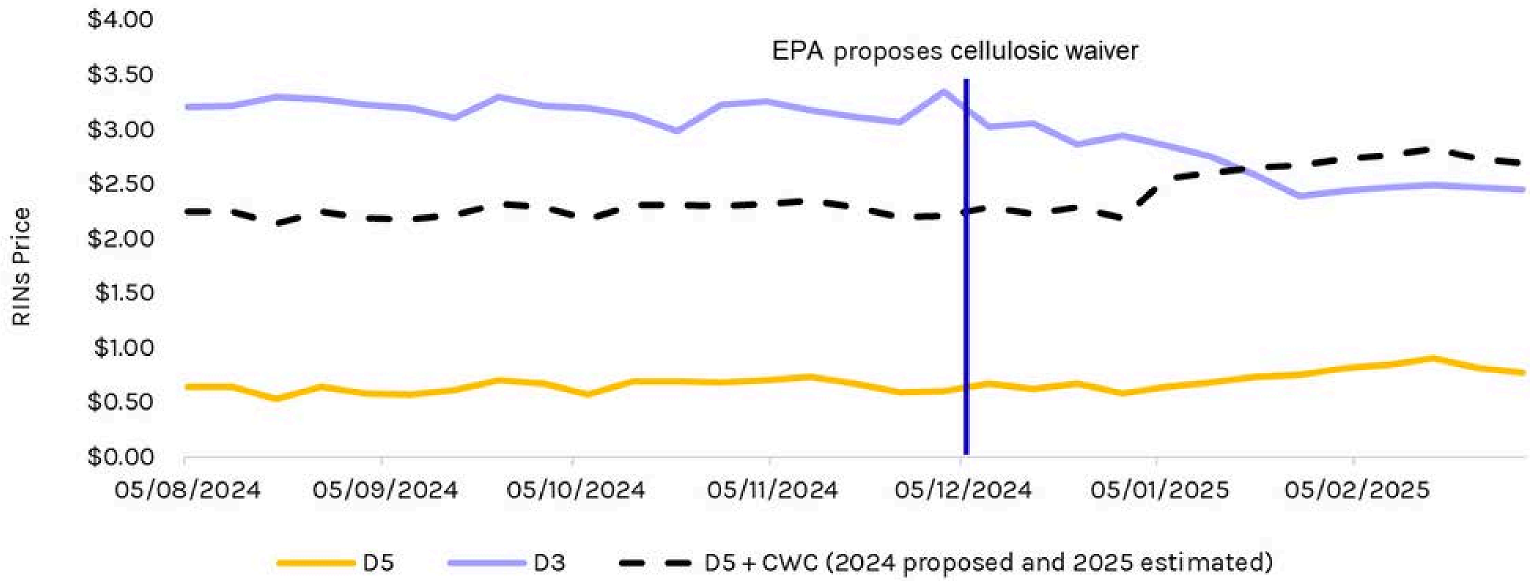
The Biden EPA adopted a blanket denial for all SREs, but in July 2024, the federal courts ruled to vacate that approach, and remanded all SRE denials – except for two petitions – back to EPA for reconsideration. There are now over 150 petitions outstanding (over twice as many as released before), and one SRE case still working itself through the courts.

Capstone believes EPA will face political and legal difficulty if it tries to revert to the policy of giving blanket approvals for SREs as seen in the first two years of the first Trump administration. We expect EPA under Trump will follow the moderate SRE policy he adopted in 2019 and create a rule that shifts compliance obligations from exempt refineries to non-exempt refineries, which negates the SRE impact. However, such a rule is vulnerable to being upended unless time is taken to respond to the last SRE court challenges. Uncertainty around the resolution of SREs and the potential impact on RIN prices may continue until later in the year, even if a proposed rule comes out in the late spring.

Cellulosic Waiver Proposal

In response to industry concerns about the shortfall in cellulosic RINs generation, EPA proposed a cellulosic waiver for 2024. Following the announcement, RIN markets hedged prices based on the possible return of the cellulosic waivers. While there is neither a conclusion to the issues around a 2024 waiver proposal nor a request for a 2025 waiver or proposal, the market is behaving as though a cellulosic waiver is in place. D3 RIN prices have dropped below the "cap" of a theoretical CWC price plus current D5 RIN prices (see Exhibit 3). Capstone expects this paradigm to last for the rest of 2025.

Exhibit 3: Weekly Average Prices for D3 RINs, D5 RINs, and Theoretical "Cap" Price (D3 + CWC)



Source: Capstone Analysis, EPA data

Cellulosic Waiver Proposal

In March, the EPA ruled that 2024 compliance filing would be extended until the next "quarterly compliance deadline after the effective date" of the waiver decision. The "effective date" of a decision is 60 days after publication, so this can push off compliance until several months after the decision on the cellulosic waiver. Typically, 2024 compliance data would be used in the calculations for the next set of RFS requirements for 2026 and beyond. If the EPA puts out a 2026 proposal before it has full 2024 compliance data, it may be forced to eventually make significant revisions in the final 2026 rule if the data is significantly different than its estimates. Similar to the threat of SREs, the hanging threat of potential changes to the proposed volumes from delayed 2024 compliance data could add uncertainty to the marketplace for all RIN types even after the 2026 proposal arrives.

45Z Rulemaking and Legislative Outlook

Capstone has long believed that Congress is unlikely to repeal the Section 45Z credit during budget reconciliation negotiations due in large part to significant support for the credit from an influential block of Midwestern Republican lawmakers. We believe any legislative changes to the credit would likely look to prohibit foreign feedstocks from participation, or remove indirect land use emissions from the credit's emissions model, mirroring legislation recently introduced. That said, we view the likelihood of the change as less than 50% due to the political difficulties of building a coalition to change existing tax law. For example, renewable diesel producer Phillips 66 (PSX) will likely oppose import restrictions.

From a regulatory perspective, Capstone expects the Trump administration to publish proposed regulations for the credit by year-end 2025, and final regulations around mid-2026. We expect the Trump Treasury to be receptive to amending the guidance and subsequent 45ZCF-GREET model to make it more favorable to higher CI fuels like crop- and soy-based clean fuels, in addition to continuing the prohibition of allowing foreign used cooking oil (UCO) to participate in the credit.

Potential return of the Blender's Tax Credit

Capstone believes that the political dynamics have changed slightly on a BTC return in the past few months and that the likelihood of passage this year is less than 50%. To date, no bill has been introduced to extend the BTC during the new Congressional session. However, Capstone expects a lobbying push later this year to extend the credit. That push will likely be driven by fuel retailers and truck stop operators in addition to potentially the soy farming industry. Future legislation would likely mirror text of last year's BTC extension bill that would extend the credit for one year while prohibiting stacking of the BTC with 45Z.

With the release of the 45Z guidance and emissions model, we expect less support for a BTC return from the renewable diesel industry as certain feedstocks such as tallow and used cooking oil earn more value under 45Z than the BTC.

Some producers may also prefer 45Z as it removes the competition of imports. In addition, there are a decreasing amount of "must-pass" legislative vehicles to attach an extension to. Republicans could look to extend the credit via the budget reconciliation process or a government spending bill ahead of the new funding deadline on September 30. We view the budget reconciliation process as a less likely avenue since Republicans are typically looking for "pay-fors" to extend the 2017 Tax Cuts and Jobs Act. Another potential hurdle for a BTC extension is the extent to which the ethanol industry opposes the credit as it could be seen as a threat to the 45Z credit. Capstone will continue to monitor the outlook for a BTC return.

California Low Carbon Fuel Standard

Capstone believes that administrative delays in implementing the LCFS amendments are likely to sustain the current low credit prices until there is a passage of the rules and clarity on a timeline for implementation. Once implemented, we expect the new LCFS rules to eventually increase credit prices, benefiting all clean fuel producers.

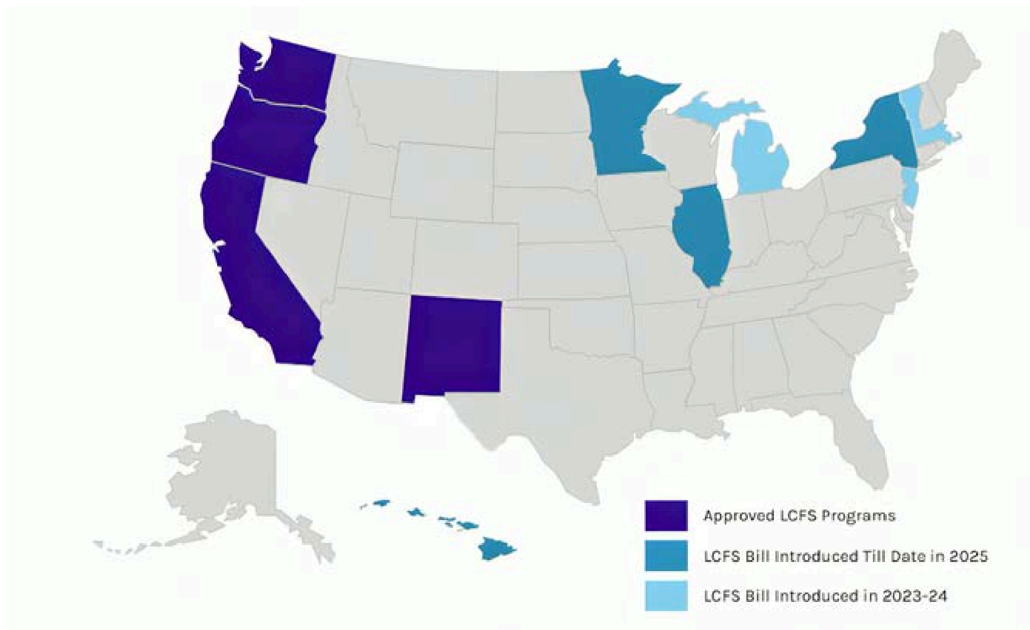
California Low Carbon Fuel Standard

We believe the California Air Resources Board's (CARB) April 4th release of an updated 15-day package increases the likelihood that the Office of Administrative Law (OAL) will approve and publish the new LCFS rules before June 30th. However, we expect retroactive compliance for prior quarters to still face possible enforcement challenges and litigation risk, which the current 15-day package does not address. We expect retroactive compliance to particularly face pushback from entities that might submit compliance reports before the new rules are officially published. There is also chance that the program cannot even be implemented quarterly with the current rule language, and that might push implementation later or even to 2026. A later effective date or lawsuits on the implementation of the updated carbon intensity (CI) standards would delay support for credit prices and discourage project investment, disadvantaging producers of low-CI fuels, such as Clean Energy Fuels (CLNE), Gevo (GEVO), and Aemetis (AMTX). Historically, it has taken an average of 130 days between the initial OAL rejection and final approval of a CARB rulemaking.

Other US State Clean Fuel Standards

Capstone believes that likely increased stringency under Washington CFS, along with additional new state CFS programs likely being established over the remainder of Trump's term will expand credit generation opportunities for clean fuel producers through 2030.

Exhibit 4: Status of New State CFS Legislations



Source: Capstone Analysis

Other US State Clean Fuel Standards

Capstone assigns a 70% probability that the Washington State Legislature will pass HB1409 in 2025, which seeks to increase the CI reduction target for the state's CFS up to 55% by 2038 from 2017 levels. The bill passed its third reading (25-23) at the Washington State Senate, following its passage in the State House in March. The bill will now be transmitted back to the House for concurrence on the amendments introduced by the Senate, and then to Governor Bob Ferguson's (D) desk for approval.

New state CFS legislation has progressed the furthest in Hawaii, where SB1120 has passed both chambers of the legislature. However, the Senate has disapproved amendments introduced by the House, with the differences now likely to be resolved through a conference committee.

CFS bills introduced this year in New York, Minnesota, and Illinois have had limited progress. We expect a greater likelihood of new state CFS bills passing during 2026-28, with the expected rollback of federal incentives under Trump spurring increased regional decarbonization initiatives from state legislators through new LCFS programs.

US States Look to Enhance Existing SAF Tax Incentives as Federal Approach Remains Uncertain

As the federal government's approach to SAF remains uncertain, US states are picking up the slack in the form of enhancing existing SAF tax credits and contemplating the establishment of new production incentives. Legislators in Minnesota and Nebraska are weighing changes to their existing credits to further support SAF markets. In Minnesota, a bipartisan group of five Senators introduced SF 1312 in February and the bill continues to progress through the Senate. The companion bill HB 1669 has seen even more support with 15 bipartisan cosponsors. SF 1312 would extend the lifetime of the credit by five years, so its new effective date ends July 1, 2035, and would increase the annual tax credit allocation. In Nebraska, LB 8 (1 Democrat cosponsor) is being considered and would remove the annual $500,000 credit limit and make the credit available starting in 2028 instead of 2027.

Several other states are assessing the feasibility of establishing SAF production tax credits – emphasizing the willingness of states to support the creation of innovative low-carbon technologies. Most recently on April 3rd, lawmakers in Wisconsin announced their intention to introduce a SAF production tax credit worth up to $1.50/gal to support SAF produced and used in the state. It is expected to be formally introduced in the coming weeks. In late March, Nevada lawmakers introduced AB 481, which provides up to $1.75/gal for the purchase of SAF produced outside the state and up to $2.50/gal for SAF produced in the state.

In Kentucky, four Republicans introduced HB 296 to establish a SAF production tax credit worth $1.50/gal for SAF used in the state and up to $2/gal for SAF produced in the state to further stimulate local production markets. The credit is proposed to begin January 1st, 2026 and last until January 1st, 2031. In New York, two Senate bills have been introduced but both have seen limited action. S01229 has one Democrat co-sponsor and would establish a SAF production tax credit for $1.25/gal or $1.50/gal for SAF made with domestically produced corn and/or soybeans. Similarly, S04065 has three Democrat co-sponsors to establish a tax credit of up to $2/gal for SAF purchased and used for flights departing from New York airports.