

How Federal, State Plans Could Bring Carbon Capture To US

By **Hunter Johnston and Jeff Weiss**

Early efforts at decarbonizing the world economy focused on production of electricity with renewable energy technologies. But many policymakers are now considering how the world can reduce carbon emissions by using renewable and low-carbon feedstocks throughout the industrial sector.

This challenge will take many years to accomplish. In the meantime, there is an opportunity to immediately and substantially reduce emissions from fossil fuels through wide-scale deployment of carbon capture, utilization and storage, or CCUS.

So-called blue fuels — fuels produced using CCUS — are increasingly available at scale, and can make a major contribution to transitional decarbonization goals within the 2030-2050 time frame. That said, there are legal, commercial, regulatory and policy issues in the European Union, the U.S. and elsewhere that must be resolved to fully support the deployment of CCUS technologies and products.

This is the third part of a four-part article about CCUS. This installment looks at the potential for CCUS and decarbonization in the U.S. **The first part** discussed the need and new momentum for CCUS. **The second part** reviewed key decarbonization developments in the EU. The final installment will consider how the interests of multiple stakeholders may align around CCUS, identify some issues that must be resolved and make recommendations that may help promote global adoption of CCUS and decarbonized supply chains.

Decarbonization Policy in the U.S.

Biden Campaign Decarbonization Policy

President-elect Joe Biden adopted carbon capture as a major part of his climate and energy policy during the 2020 presidential campaign. His platform included these three targeted CCUS components:

- Decarbonizing industrial heat needed to make steel, concrete and chemicals, and reimagining carbon-neutral construction materials;
- Decarbonizing the food and agriculture sector, and leveraging agriculture to remove carbon dioxide from the air and store it in the ground; and



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- Capturing carbon dioxide from power plant exhausts, and sequestering it deep underground or using it to make alternative products.[1]

Biden's climate plan goes further:

Accelerate the development and deployment of carbon capture sequestration technology. ... Biden shares the Carbon Capture Coalition's goal "to make CCUS a widely available, cost-effective, and rapidly scalable solution to reduce carbon emissions to meet mid-century climate goals." Toward this end, he will double down on federal investments and enhance tax incentives for CCUS. At the same time, to bring new carbon capture technologies to market, Biden will continue to fund carbon capture research, development, and demonstration.[2]

Further, under Biden's Carbon Border Adjustment plan, the U.S. government would:

Pursue strong new measures to stop other countries from cheating on their climate commitments. We can no longer separate trade policy from our climate objectives. Biden will not allow other nations, including China, to game the system by becoming destination economies for polluters, undermining our climate efforts and exploiting American workers and businesses. As the U.S. takes steps to make domestic polluters bear the full cost of their carbon pollution, the Biden Administration will impose carbon adjustment fees or quotas on carbon-intensive goods from countries that are failing to meet their climate and environmental obligations. This will ensure that American workers and their employers are not at a competitive disadvantage and simultaneously encourage other nations to raise their climate ambitions. Biden will also condition future trade agreements on partners' commitments to meet their enhanced Paris climate targets.[3]

Leading Carbon Fee With Border Adjustment Proposals Introduced in the 116th Congress

Two similar bills introduced in Congress last year provide some insight into how Biden's proposals could become law. S. 1128, introduced in the Senate by Sens. Sheldon Whitehouse, D-R.I., Brian Schatz, D-Hawaii, Kirsten Gillibrand, D-N.Y., and Martin Heinrich, D-N.M., as well as H.R. 4926, introduced in the House by Rep. Earl Blumenauer, D-Ore., would impose both a carbon fee and a border adjustment fee for energy-intensive manufactured goods.[4]

Both bills are expected to be leading frameworks for carbon policy in the 117th Congress.[5] The major features of these bills are as follows:

- Each bill would amend Section 38 of the Internal Revenue Code to impose a carbon fee equal to \$52 per ton of carbon dioxide on products produced from coal, petroleum products and natural gas.
- The bills would provide for a refund for payment of any carbon fee imposed by the bill for any carbon that was sequestered as a result of CCUS.[6]

- There would also be a refund for the export of any product for which a fee was imposed.[7]
- In addition, there would be provisions for border adjustments for energy-intensive manufactured goods, as well as associated emissions and imports.[8] In general, the border adjustment fee would refund to the person exporting energy-intensive goods the amount of the cost of such good attributable to any carbon fees imposed by the government. This refund would be reduced by the amount of any fees imposed by a foreign nation on an equivalent basis on the energy-intensive product by the nation to which such good is exported.[9]

Similar to the European Commission's CBAM proposal, the apparent objective of these bills is to ensure that there is a level playing field in both the U.S. and overseas markets from a competitiveness perspective, which would prevent "carbon leakage" across borders.[10]

There are various other additional carbon fee bills that have been introduced in Congress that incorporate border adjustment concepts for energy intensive industries.[11] These bills acknowledge the role of a border adjustment in the context of a carbon fee scheme, but there are administrative differences in the manner in which the fee is calculated, and the eligibility criteria for imposition of the tax and the border adjustment.

Although a carbon fee with a border adjustment could be supported by many in the Democratic party, the fossil fuel energy industry, led by the American Petroleum Institute, has been opposed to policies that increase the cost of American oil and gas exports, which it argues could lead other countries that might otherwise purchase U.S. liquefied natural gas to rely more on coal.[12]

In sum, it appears that the Biden administration will pursue its CCUS goals through a multilateral approach to climate policy — similar to the strategy used by the Obama administration.[13]

California LCFS

California's regulatory approach to CCUS has the effect of encouraging the development of a whole slate of blue products for use by industry to meet decarbonization objectives based on carbon intensity.

California's Low Carbon Fuel Standard, or LCFS, program is designed to reduce greenhouse gas emissions associated with the life cycle of transportation fuels used in California, and to diversify the state's fuel mix.

The LCFS program uses a "pathways" approach to lowering emissions, under which various fuels and feedstocks are assigned carbon intensity scores that are qualified to generate credits under the LCFS program, depending on the carbon intensity of the pathway fuel as compared to the annual carbon intensity target.

It is a simple formula: Any fuels used in California that fall below their carbon intensity

target — including ethanol, biodiesel, renewable diesel, compressed natural gas and biogas, hydrogen, and electricity for electric vehicles — can generate credits.[14] Those above the target, such as conventional diesel or gasoline, generate a deficit, requiring credits to comply with the standard.

CCUS is an eligible technology that can generate credits for pathway qualified fuels sold into the California fuels market under certain conditions.[15] Although the carbon capture does not need to take place in California to qualify for credits, if a project uses a fuels pathway approach to generate credits, the fuel must be sold into the California market.

This policy thus provides an incentive for companies to use CCUS as a means to produce blue products — such as ethanol or other alternative fuels that employ CCUS to reduce the carbon intensity of the pathway fuels — to be sold into the California market.

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[1] <https://joebiden.com/clean-energy/#>.

[2] Id.

[3] Id.

[4] S. 1128. <https://www.congress.gov/bill/116th-congress/senate-bill/1128/text>; H.R. 4926. <https://www.congress.gov/bill/115th-congress/house-bill/4926/text>.

[5] <https://www.politico.com/news/2020/10/14/biden-trade-fight-global-warming-429495>.

[6] See Sec. 4691(c) Refunds For Capturing Carbon Dioxide And Production Of Certain Goods.

[7] Sec 4691(c)(3), Exports.

[8] S. 1128, Sec. 4695, Border Adjustments for Energy-Intensive Manufactured Goods.

[9] Id.

[10] <https://www.niskanencenter.org/wp-content/uploads/2020/07/Border-Adjustments-in-a-Carbon-Tax-Niskanen-Center.pdf>.

[11] See H.R. 4058, The Stemming Warming and Augmenting Pay Act; H.R. 3966, the Raise Wages, Cut Carbon Act; H.R. 4142, America Wins Act; and H.R. 763, the Energy Innovation and Carbon Dividend Act of 2019.

[12] <https://www.politico.com/news/2020/10/14/biden-trade-fight-global-warming-429495>.

[13] Id.

[14] <https://stillwaterassociates.com/lcfs-101-a-beginners-guide/>.

[15] <https://ww2.arb.ca.gov/resources/fact-sheets/carbon-capture-and-sequestration-project-eligibility-faq>.