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What the Trump Presidency Means for CCS: Policy Shifts and Opportunities for Asia

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SYNOPSIS

The Trump administration's return to office in 2025 has brought significant policy shifts favouring fossil fuel expansion, yet its stance on carbon capture and storage (CCS) remains unclear. Executive orders rolling back key climate policies coupled with tariffs and trade wars create unprecedented uncertainty regarding the direction and future of renewable energy, carbon management, and circularity in the United States (US), which has long been considered a global leader in CCS. This Policy Brief details the current state of CCS deployment in the US and its rollback of initiatives, highlighting the likely weakening of the US's role as a leader in CCS. We also examined CCS technological innovation, which shows a contrasting trend between the US and Asia's growing prominence in its capabilities.

KEY POINTS

- The Biden Administration's IIJA and IRA legislation has encouraged many upstream energy companies and startups to commit to large-scale investments in carbon management.
- The recent change in the US administration in January 2025 has led to the withdrawal of support for many renewable energy and climate technology investments.
- The future of CCS development in the US is now uncertain. While the IRA's 45Q provision for carbon credits and other support mechanisms remains intact thus far, conflict and uncertainty have resulted in CCS project delays, halts, and cancellations.
- East Asian countries are rapidly developing innovative CCS technology capabilities, giving them the potential to become key players in global decarbonisation efforts. The commitment to low-carbon development in Asia should remain steadfast, regardless of policy changes in other regions.

INTRODUCTION

In November 2021, the Biden administration passed the Infrastructure Investment and Jobs Act (IIJA), followed by the Inflation Reduction Act (IRA) in August 2022. Designed to stimulate economic growth post-COVID-19, the IRA allocated historic levels of funding up to 369 billion USD for various energy and climate projects, including renewable energy, grid energy storage, electric vehicle incentives, and home energy efficiency upgrades. Moreover, the IRA provides financial support for carbon capture and storage (CCS) and CO_2 utilisation, including enhanced oil recovery (EOR). CCS is an interconnected technology for CO_2 capture, transport, and storage that sequesters CO_2 in subsurface geological formations. Other approaches, such as carbon capture, utilisation, and storage (CCUS), typically involve EOR in its CO_2 utilisation by injecting CO_2 into depleted oil and gas fields for extraction.

Particularly, the IRA's 45Q provision is dedicated to power and industrial projects initiated before 2033 that are eligible for 12 years of transferable carbon credits. There are two qualified project types: dedicated geological storage and EOR/utilisation, each with two subcategories, which are point source CO_2 capture and direct air capture (DAC). In dedicated geological storage, it allocates 85 USD/tCO_2e for point sources and 180 USD/tCO_2e for DAC. In EOR/utilisation

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projects, it allocated 60 USD/tCO_2e for point sources and 130 USD/tCO_2e for DAC. The IIJA policy also intends to stimulate new CCUS technologies and initiatives through various investments: 937 million USD for large-scale CO_2 capture pilots, 2.5 billion USD for storage and transport, and 3.5 billion USD for regional DAC hubs. Subsequently, the recent announcement of the One Big Beautiful Bill Act on 4 July modifies the 45Q tax credit, equalising credit for EOR/utilisation and dedicated geological storage at 85 USD/tCO_2e for point sources and 180 USD/tCO_2e for DAC. These changes signal support for the American oil and gas sector, as the EOR extends production from legacy sites. Regarding other CCS incentives, their future status remains unclear.

The second Trump administration has clearly indicated favouring traditional oil and gas and withdrawing support for climate tech investments. CCS stands at the crossroads because, while many major players are oil and gas companies, its main role is to sequester CO_2 from industrial facilities. The Trump administration seeks to undo many of the Biden administration's policies on energy and carbon, including withholding unallocated funds and clawbacks of already awarded funding. Signs of CCS development slowdowns are already appearing. At the technological forefront, the US shows a declining trend in granted patents, while Asian nations are beginning to outspend the US and others in CCS innovation, creating opportunities for them to become key global players.

ANALYSIS

Favouring Upstream Industry, Uncertain Signals to CCS

Analysis shows that, as of February 2025, the US had a world-leading 352 CCS and utilisation projects in planning with a combined announced capacity of 795.6 $MtCO_2e$/year. Of the 352 projects, 42% are CO_2 capture projects, 24% are CO_2 storage projects, 21% are full chain (capture + transport + storage) projects, 7% are transport and storage projects, 3% are CO_2 transport projects, and 2% are CO_2 capture and utilisation projects. The momentum in CCS investments created by IRA 45Q includes those made by major energy players. For example, various companies have agreed to store more than 5 $MtCO_2e$/year along the US Gulf Coast. Many large energy companies have followed suit, including large equipment and service providers anticipating ecosystem formation driven by government policy incentives. Some of these incentives included 100 million USD in Department of Energy (DOE) funding for experimental carbon capture test centres, 1.2 billion USD to establish regional capture and storage hubs, 1.3 billion USD to support large-scale commercial site application of CCS and utilisation technology, and another 2.5 billion USD to fund carbon capture initiatives across the US. Many of these projects also qualify for the 85 USD/tCO_2e tax credit, which significantly defrays upfront capital expenditures.

However, at the time of this publication, the Trump administration has taken steps to halt and revoke further fund distribution for a wide range of energy projects. Regarding CCS, the IRA 45Q carbon credit programme and other measures are still active, but attempts are being made to undermine IRA and IIJA policies. In January 2025, the Trump administration issued Executive Order 14154, Unleashing American Energy, which called for an immediate pause of all IRA and IIJA funds through a 90-day review process. In the lawsuits that followed, in April 2025, the federal court ordered government agencies to reinstate the already awarded funding. However, in March 2025, the H.R.1946 bill, the 45Q Repeal Act of 2025, was proposed to repeal any CO_2 sequestration tax credit. This bill is currently in Congress, and no action has been taken to date. As CCS project development relies on tax credits and incentives, any attempt to revoke or modify policies puts CCS progress under even greater uncertainty.

A Significant Backslide in Momentum

The Trump administration's actions have had a chilling effect across the energy market, including CCS. Over the past three months, a significant slowdown in carbon capture projects has been observed, with many announced delays and postponements. According to the FSX database, 51 projects announced Final Investment Decision (FID) delays ranging from two to five years, with 61% of these projects delaying the decision until 2028. 68 projects have announced delays in the planned year of operation. Those slated for

2024/25 have almost all been pushed to 2026-2028. Only one has announced an acceleration from 2030 to 2027. Eight projects were suspended, cancelled, or decommissioned. 60 new projects, but at smaller scale have been announced.

Since the beginning of 2025, 38% of all tracked US projects have announced substantial delays. This could merely be correlated to the beginning of a new year and reporting requirements. However, the number is significant and could well be tied to the new administration's threats to withhold follow-on payments for grants and other support, prompting some to surrender awarded grants, which is also now being challenged in US courts by others. In fact, in May 2025, the US DOE announced that it would revoke 3.7 billion USD in previously announced funding impacting an additional 24 projects. This results in at least 75 projects with negative FID impacts, including those by major players such as ExxonMobil, PPL, Ørsted, and Calpine. Moreover, in the same month, the US DOE announced that 179 projects exceeding 15 billion USD would also be put under review.

Tariffs as an Additional Hindrance to the US Implementing CCS

An additional challenge for CCS projects in the US is the impact of tariffs on the cost and payback for many projects. CCS requires several key components such as imported steel for components and piping. Tariffs on imported subassemblies create additional cost pressures that reduce the financial attractiveness of CCS projects, especially those dealing with low flue gas CO_2 streams, where economics is marginal.

Table 1 shows the impact of tariffs on the required processing volume of CO_2 emissions to achieve an acceptable 8-year payback for CO_2 capture, as an implication of the rising cost of capture in industrial facilities. The CO_2 levels in flue gas are presented as a category because they directly affect the cost of CO_2 capture. A low flue gas concentration means higher energy and consumable costs per unit capture in addition to high upfront capital for modular capture and storage technologies. Under the tariff scenario, even with the 45Q tax credit, the annual flue gas processing volumes required to meet an 8-year payback increase significantly for lower CO_2 concentrations. At 5% CO_2, the required volume doubles from 170,000 to 340,000 tCO_2/year. This suggests that, despite revenue support from tax credits, higher CO_2 capture volumes are necessary to recover the investment cost due to tariffs. Higher-concentration CO_2 streams (e.g. 20%) require much less of an increase in the required process volume for economic payback. This highlights that, although US import tariffs do not directly target CCS, they undermine project cost-effectiveness, especially for more complex infrastructure or operating under dilute CO_2 conditions. Industries with low CO_2 gas streams (1-10%), which are estimated to account for more than 50% of all US manufacturing sites, will struggle to justify installing any carbon capture technologies in their facilities, leading to a further slowdown in CCS deployment in the US.

Table 1. Impact of tariffs on the required processing volume of CO_2 emissions to achieve an acceptable payback period (8 years)

% CO_2 flue gas	tCO_2 emission/year	
	Without tariffs	With tariffs
5%	170,000	340,000
10%	34,000	68,000
15%	20,400	51,000
20%	20,400	27,200

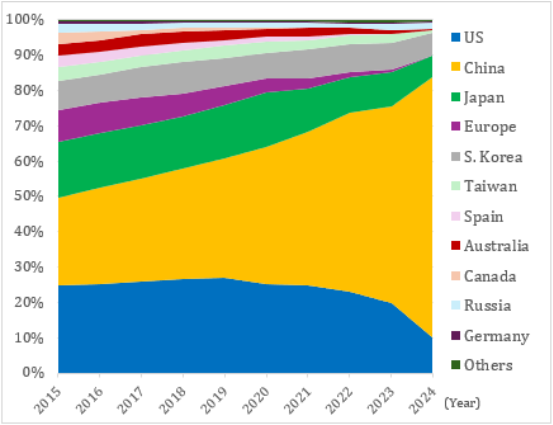
Note: The model assumes an average of 50% of hardware components and 90% of consumables, subject to 80% tariff rate. Further assumptions include 90% system capture efficiency rate, 0% fugitive emissions and stable carbon credit of at least 80 USD/tCO_2e as per the US IRA. Model available from FSX.

CCS Technological Innovation in Asia

In addition to CCS project slowdowns due to US climate policy, technological innovation is also declining. An analysis of Google's patent database of granted patents using the keyword term "carbon capture and storage" from 2015 to 2024 shows a significant shift in innovation patterns, accelerating away from the US (Figure 1). In 2015, the US and China were clear leaders in CCS technology development, each accounting for 25% of all awarded patents. By 2024, this had significantly changed to only 10% in the US and 74% in China. During the same period, Japan's share shifted from 16% to 6%, while South Korea maintained a steady 6-8% of overall new patent creation. This trend indicates that East

Asia has gained competence in R&D capabilities and innovative clean technologies. Japan and South Korea have several collaboration projects with Southeast Asian countries to develop transboundary CCS. The dialogue on CCS cooperation with China remains ongoing, along with other clean energy transition developments.

Figure 1. Granted patents of CCS, 2015-2024



Data source: Google patent database

Strong collaboration among Asian countries reflects aligned interest in decarbonisation and collective climate action. A commitment to low-carbon ecosystem development in Asia should persist, despite policy changes in other regions, such as the US. Asian countries' technological innovation capability is a great asset in building leadership in CCS ecosystems, potentially influencing international climate policy and market trends. Asian countries can position themselves as leaders in the global low-carbon transition.

CONCLUSION

The Trump administration's undermining of IRA and IIJA policy has created major uncertainty regarding the crucial incentives driving US CCS development. Import tariffs further challenge payback potential, particularly for industrial facilities with low flue gas concentrations, thereby stunting CCS project deployment. Thus, the decisions of the current administration are likely to weaken the US's role as a long-standing leader in CCS.

This dynamic underscores the critical need for the government to establish consistent policies across administrative terms. Energy infrastructure projects typically have high upfront investments and long lead times. Therefore, sudden policy shifts hinder implementation and affect the financial stability of projects already underway. This situation serves as a lesson for Southeast Asian countries currently in progress to develop CCS, highlighting the importance of having stable and consistent policies. Collaboration among Asian countries is pivotal in building large-scale CCS infrastructure. The commitment to low-carbon industry development in Asia should remain unwavering. Continued technological innovation and capacity growth will position Asian countries as key players in the global fight against climate change.

WHAT TO LOOK OUT FOR

- Continued deceleration of US climate projects and technology development per current policy trajectory.
- Negative impact of import tariffs and trade barriers on US clean energy and industrial infrastructure development.
- Increasing CCS partnerships among Asian countries and with nations outside the region.

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Keywords: Carbon Capture and Storage, Trump Administration, Innovation, Import Tariffs, Climate Policy

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