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## What can CCUS projects bring to the energy and industrial sectors in Mexico?

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### Abstract

Over the last decade, Mexico has put in place several actions for reducing its greenhouse gas emissions. As a country where the petroleum, manufacturing and heavy industry play a critical role in the economy, carbon removal technologies are essential for sustainable development and meet climate commitments. Nevertheless, the country faces different challenges related to national development and reinforcing state-owned companies in the energy sector to stabilize the economy and improve citizens welfare. To comply with both objectives –climate and economic–, technology innovation and sustainable planning represent an unprecedented opportunity.

Mexico's current NDC and its mid-century strategy considers the implementation of commercial CCUS projects to meet its decarbonisation goals towards 2030 and 2050, respectively. CCUS is a key technology in the national decarbonisation pathways for major industries, however, its implementation is expected until 2030. Since 2014, national institutions, in collaboration with international entities, have worked together in developing the activities of Mexico's CCUS roadmap. Nonetheless, this process still faces several challenges related to public funding, regulation and stakeholders acceptance. The enactment of ambitious climate commitments and the efforts to embrace CCUS have not been sufficient to raise awareness about the urgency to integrate low-carbon technologies to decarbonise Mexico's economy.

At a national level, Mexico has an enormous opportunity to boost CCUS through enhanced oil recovery (EOR). Worldwide, projects success has been associated with EOR activities since they provide benefits such as revenues from oil sales, infrastructure in place, and expertise from the oil and gas industry for CO<sub>2</sub> utilisation and storage. Another advantage is that Mexico has potential for developing CCUS industrial clusters in regions near to oil fields which provide an opportunity to bring together multiple stakeholders and encourage them to work together in

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projects planning, design, and deployment. Although the perspective is for CCUS to be implemented by 2030, it is necessary to explore the potential impacts -positive or negative- at this stage.

This work analyses the role of CCUS technology as part of the national climate strategies in the energy and industrial sectors. We bring special attention to social and environmental impacts at policy and corporate level since it can allow us to translate them into jobs, emissions reduction, and sustainable economic growth. Mexico's study case can provide insights about the challenges along the causal chain of the projects in emerging economies where the technology is still in an early stage of adoption. Political and industrial willingness, public acceptance, and budget constraints are some of the areas where special attention is required.

*Keywords:* Mexico; CCUS; decarbonisation; energy; industry; climate policy.

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