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# Report

## Perspective: India's Carbon Credit Trading Scheme – a new beginning

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## 2 Key Messages

1. The Lower House of India's Parliament has passed a bill amending an earlier Energy Conservation law. The bill calls for establishing a domestic carbon credit trading scheme or mechanism. Since India's governing political party effectively controls both houses of Parliament, the bill is expected to pass the Upper House and become law.
2. The amendment bill benefits from having a regulatory framework in place for the original act passed in 2001. Assuming the amendment's passage by the Upper House and its subsequent enactment, integrating the details on the details of the establishment and functioning of the carbon credit trading scheme will be key to its effectiveness.
3. This amendment comes just after India updated its Nationally Determined Contributions (NDCs), thereby improving its long-term climate change commitments. These updates were approved by India's cabinet. Both these developments – the updated NDCs and the amendment bill – come well in advance of COP27 in Egypt in November 2022.
4. The passing of the amendment bill is indicative of the Central Government's key role in ensuring that India has sufficient tools and a cohesive framework that builds on the most flexible elements of international developments to meet its climate change mitigation objectives.
5. While India's Central Government is evaluating CCS, there is no specific timeline that gives clarity about when India may include CCS at the national or sub-national level. Nonetheless, the amendment heralds a new era for India in its quest to reduce emissions and meet its climate-related commitments. CCS projects could benefit as

more of these mechanisms are instituted globally. Other jurisdictions with carbon trading systems have broadened their policy frameworks to later include CCS.

### 3 Acronyms

Acronyms used in this report are listed below:

ADB	Asian Development Bank
CCS	Carbon capture and storage
COP27	27 <sup>th</sup> session of the Conference of the Parties to the UNFCCC
ETS	Emissions Trading System
EU	European Union
GBP	Green Bond Principles
MSME	Micro, Small, and Medium Enterprise
NDC	Nationally Determined Contribution
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollars

## 4 India's Carbon Credits Trading Scheme – a new beginning

### 4.1 India's Climate Ambitions

India is a large country, by some estimates the world's seventh largest by area and the second largest by population (Aaron O'Neill and Statista 2022; The World Bank 2021b). While India is a significantly small emitter of CO<sub>2</sub> when compared on a per capita basis, it is estimated to be the world's fourth largest regional emitter of CO<sub>2</sub> in the world, behind the United States, China, and the European Union in that order (International Energy Agency (IEA) 2022; The World Bank 2019). India's emissions in 2019 were 2.456 Gt<sup>i</sup> of CO<sub>2</sub> equivalent<sup>ii</sup>.

Recently, India updated its commitments to reduce emissions through a submission to the UNFCCC (Aathira Perinchery and The Wire 2022; Business Standard 2022; UNFCCC 2016). The updates to India's Nationally Determined Contributions (NDCs) improve upon earlier commitments made in 2016 were also approved by India's Cabinet (Press Information Bureau and Government of India 2022a).

The emissions reduction component of the update includes commitments to:

- reduce emissions intensity of its GDP by 45% by 2030 from 2005 levels, up from 33 – 35% from the original NDC.
- achieve 50% cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030, up from 40% in the original NDC.

### 4.2 Where does CCS fit within India's agenda?

While CCS does not fit explicitly in India's NDC commitments, India's Central Government is trying to better understand the role CCS can play in helping India achieve its climate objectives. India's Ministry of Science and Technology is actively evaluating CCS technologies (Department of Science and Technology, Ministry of Science and Technology, and Government of India 2022). India has developed partnerships with

several countries, notably one with the United States which mentions CCUS as a decarbonization tool (United States Department of Energy 2021).

### 4.3 Energy Conservation bill – an amendment

On August 8, 2022, India's Lower House of Parliament, the Lok Sabha, passed an Energy Conservation bill (Lok Sabha (Lower House) and Parliament of India 2022b, 2022a). The bill amends an earlier law that was passed in 2001 (Lok Sabha (Lower House) and Parliament of India 2022a; Parliament of India 2001). To become law, the new amendment will also need to be passed by India's Upper House, the Rajya Sabha. It will be a big leap forward in helping India achieve its climate goals. A five-element plan for climate action was laid out by Prime Minister Modi in November 2021 at the COP26 Summit in Glasgow (Press Information Bureau and Government of India 2021). The passing of this bill follows the updating of India's NDCs on August 3, 2022, which transformed the five-element plan into enhanced climate targets (Press Information Bureau and Government of India 2022a).

The Amendment calls for the establishment of a carbon credit trading scheme to be established in India that will help with reducing emissions through a specific clause. India is effectively setting up a domestic market. In other words, the carbon credits generated through the scheme will not be available for export – at least until India achieves its climate goals (Lok Sabha (Lower House) and Parliament of India 2022a; Rajesh Kumar Singh and Bloomberg 2022). Since the principal law (2001) stipulates its applicability everywhere in India, India's private and public sector entities that reduce emissions will generate carbon credits through the bill's provisions. The Central Government will issue carbon credit certificates that can be sold or bought domestically. The trading scheme has been described as a compliance market since the issuance of certificates is incumbent on the entity's compliance with the trading scheme (Lok Sabha (Lower House) and Parliament of India 2022a; Rituraj Baruah and Livemint 2022b). The bill also allows for individuals to purchase the certificates voluntarily.

## 4.4 Energy efficiency and conservation

The principal law has multiple provisions and requirements to enable and sustain the use and implementation of energy efficiency and energy conservation in projects. By including carbon credit trading activities, the new bill complements the principal law by broadening the Central Government's authority to promote and enforce energy efficiency and conservation. The principal law already empowered the Central Government's Bureau of Energy Efficiency to engage in international cooperation through forums of mutual interest, like the U.S.-India Low Emissions Gas Task Force. It is worth noting that the US-India Strategic Clean Energy Partnership announced in September 2021 mentions CCUS as a tool to decarbonize the energy sector (United States Department of Energy 2021). CCS is also mentioned in the activities that fall under the scope of the US-India Low Emissions Gas Task Force (Office of Fossil Energy and Carbon Management and United States Department of Energy 2021).

The bill itself does not provide any specifics for carbon capture and storage (CCS) or sequestration related activities. However, it is worth noting that CCS was not included in carbon trading systems that were previously developed internationally. The European Union's Emissions Trading System (EU ETS) was started in 2005 but implemented a CCS Directive some years later (European Commission 2022). California's cap-and-trade program that began in 2013 added a CCS protocol to its Low Carbon Fuel Standard (LCFS) in 2018 (California Air Resources Board 2018). While there are national and sub-national carbon trading systems currently operating globally that do not include CCS (Bureau of Environment and Tokyo Metropolitan Government 2022; Province of Saskatchewan 2016), there are potential future trading systems where CCS is under consideration (State of Washington and Department of Ecology 2022).

## 4.5 Project Financing

India has more than 8 million registered micro, small, and medium enterprises (MSMEs) (Indian Brand Equity Foundation 2022). Many of these enterprises are involved in the



manufacture or procurement of equipment that could be used for projects that fall under the purview of the Bureau of Energy Efficiency, the same bureau that has jurisdiction over the carbon credit trading scheme. It is also worth noting that the principal law and the amendment contain requirements for the labelling, testing, certification and use of equipment or appliances that could potentially be also used for CCS projects. Those enterprises that can ensure that their projects can generate carbon credit certificates under the trading scheme may become eligible for preferential financing.

While carbon credits are a carbon pricing instrument used in compliance markets to limit the GHG emissions, the provisions provide a backdrop to how the financing of energy projects could potentially change with the inclusion of carbon credit trading. To ensure and encourage compliance, the amendment also contains rules with financial penalties for non-compliance. The Bureau also has rules to promote financing of energy efficiency projects and to provide financial assistance to institutions to promote energy efficiency and conservation. Currently, under the Green Bond Principles, energy efficiency projects can avail of green bond financing through a separate project category. While CCS projects are not explicitly included, they could potentially fall under the pollution prevention and control category (International Capital Market Association (ICMA) 2022). Additionally, subject to eligibility criteria, the Asian Development Bank's Green Bonds have a category for climate change mitigation that requires projects to target reductions in or the sequestration of GHGs from the atmosphere (Asian Development Bank (ADB) 2021).

#### 4.6 The status quo versus change

The details on how the trading scheme will be set up, the nuances of the compliance rules and of how projects become eligible for the certificates are yet to be determined. It was suggested that Prime Minister Modi could have revealed some details during his speech to mark India's 75 years of independence on the 15<sup>th</sup> of August (Nishtha Pandey and CNBC TV18 2022). While the Prime Minister did briefly mention energy in his speech, more context around the trading scheme was not shared (Press Information Bureau and Government of India 2022b).

Considering that India's carbon credit trading scheme has compliance requirements, the enforcement of potential penalties and fines can drive market participation while channelling investments towards carbon abatement projects. This has happened in other jurisdictions around the world, notably with the EU ETS and in California with the inclusion of CCS protocols years after the trading mechanisms were set up (California Air Resources Board 2018; European Commission 2022).

## 4.7 Conclusions

The Energy Conservation amendment bill having passed the Lower House of Parliament, has been included in the Upper House's Parliamentary Bulletin for consideration (Raja Sabha (Upper House) and Parliament of India 2022). The Upper House is expected to take it up in the winter session of Parliament which typically begins in late November (Rituraj Baruah and Livemint 2022a). Since India's current governing political party effectively controls both houses of Parliament, the bill is expected to pass and become law.

The passing of this amendment is a significant positive step taken by the Indian Central Government. While there is still work to be done to iron out the details, if enacted into law, it would implement a national carbon trading system in the world's second most populous nation with close to 1.4 billion people (The World Bank 2021b). India is also the world's sixth largest economy, worth more than USD 3.17 trillion and possesses millions of MSMEs that could offer innovative solutions to reduce the emissions from one of the world's largest emitters (Indian Brand Equity Foundation 2022; The World Bank 2021a). This would likely be balanced with a unique approach towards development because while almost all of India's population has access to electricity, a third of its population has yet to gain access to clean cooking, an indicator that tracks the implementation of UN Sustainable Development Goal #7 (Affordable and Clean Energy) (International Energy Agency (IEA) et al. 2022).

As noted in this perspective, several jurisdictions that developed carbon trading systems included CCS many years later. CCS technologies are being actively evaluated all over the world. As the number of CCS projects in mature economies increases through a combination of policy and legislative action, CCS increasingly becomes a component of clean energy partnerships between mature and developing economies. India is in a unique position, benefiting from evaluating CCS technologies domestically as well as through international partnerships.

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<sup>i</sup> 1 Gt equals one billion tons.

<sup>ii</sup> Mass of CO<sub>2</sub> that would produce the same effect as a given mass of another GHG.