

Climate Action Series: Warming Up to Climate Action – Incentives and Finance

In this article we get into the mechanisms and challenges of financing the energy transition.



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This series is a joint editorial initiative of ETEnergyworld and [CSTEP](#). In the first two articles of the series, we discussed sectoral strategies for [climate action](#). They can be accessed [here](#) and [here](#). In this article we get into the mechanisms and challenges of financing the transition.

Climate finance was one of the most contested issues at [COP26](#) in [Glasgow](#) last November. Along with other emerging and vulnerable countries, India demanded greater climate action from the developed world, especially for providing climate finance. With relatively lower shares in the cumulative stock of emissions, higher vulnerability to [climate change](#), and development goals to achieve, India’s stance at climate negotiations has been to push for better enforcement of the principle of common but differentiated responsibilities enshrined in the [Paris Agreement](#), particularly for financing obligations.

Carbon pricing is, in theory, a great option for simultaneously reducing emissions and creating an additional revenue stream. Carbon taxes and emissions trading (the two main types of carbon pricing) have been implemented globally with mixed results. The [European Union Emissions Trading Scheme](#) has successfully induced a reduction in emissions, with some evidence of incentivising low-carbon innovation. But a few pollution permits were allocated freely, thereby reducing revenue generation.

Implementing carbon prices can be highly information-intensive and politically unfavourable due to possible lobbying by the fossil fuel industry and public protests such as the 2018 “yellow vest” riots in France. Additionally, the resulting rise in energy costs could disproportionately affect poorer classes in the short term if the trade-off between revenue redistribution and investment in green projects is not managed. A recent study exploring the distributional impacts of carbon pricing in developing countries found that a national carbon price in India would cause poorer households to increase their expenditures by ~4.5% (in some cases more than 5%) to even maintain current lifestyles. Revenue recycling to poorer

households could help prevent carbon pricing from becoming regressive, but it requires the strengthening of institutional capacities for smooth implementation.

While India does not explicitly put a price on carbon, it has a few indirect mechanisms such as cess on coal, perform achieve and trade (PAT) scheme for energy-intensive industries, and [renewable](#) power purchase obligations. These, particularly the PAT scheme, have helped reduce emissions to an extent. However, as revenue streams to fund green technologies, these measures have been inadequate. The coal cess, in terms of a carbon tax, is too low compared to what is recommended by the [International Monetary Fund](#). According to the Department of Expenditure, only 24% of the revenues collected went into green projects in 2017. It has also been found to exacerbate the health of distribution companies and inequality. On the other hand, the implicit carbon tax on petrol and diesel contributes to a significant share (~20%) of the government's revenue but has had little impact on reducing consumption due to the lack of cheap alternatives. Taxing essentials can incentivise behavioural shifts only if there is an equally good or better alternative for people to shift to.

The carbon trading scheme announced in the Kyoto Protocol aimed to encourage investment in and technology transfer to developing countries while allowing some flexibility to developed countries in how they chose to reduce emissions. However, the lack of adequate institutional support (fiscal and financial regulation and transparency and intellectual property rights) discouraged investment by developed countries. This is an issue that extends to other means of mobilising climate finance as well.

Climate finance in India is largely domestic. The Budget 2022-23 announced multiple instruments to attract investment for climate action (among other areas), particularly from the private and foreign sectors. Blended finance and public-private partnerships (PPPs) encourage private sector investment in new and potentially risky sectors (by absorbing some of the disadvantages of being a first-mover) and ensure that the concessional funds deliver developmental and climate impact in addition to financial returns. This can free up public funds while taking advantage of private sector expertise for efficient project implementation. For this to happen, there needs to be a clear line-up of green projects capable of generating the returns required to engage private investors, providing an opportunity for collaboration between the ministries of environment and finance as well as climate experts and academia.

The budget also announced the issuance of sovereign green bonds to raise revenues for green public sector projects. This can fuel the development of the private green bond market which, along with the sovereign green bond market, can harness increased foreign investment, particularly at a time when green bonds oversubscription is being witnessed. Funds from green bonds have been successfully raised and used by developing countries such as Fiji for adaptation and resilience projects.

A challenge confronting green bond markets worldwide is the lack of a harmonised set of rules on what is termed green. This causes ambiguity, and green finance could inadvertently fund emissions-intensive projects, like in China, where green bond proceeds fund coal power plants. Prioritising the development of a taxonomy and a rigorous review process for green projects can avoid this and enhance regulatory efficiency and transparency. System-wide impact assessments on a life-cycle basis should be undertaken to determine whether the proposed green projects are truly sustainable.

India's chosen path to net-zero emissions is dominated by plans to introduce and improve energy efficiency measures and shift to renewable energy (RE), which is reflected in the large share of green finance absorbed by the power generation sector. While India's climate finance has largely been mitigation-focused, some efforts have also been made towards adaptation in the agriculture sector. But as a country that is vulnerable to climate risks, we need to increase adaptation efforts across all sectors. The available adaptation finance requirement estimates are preliminary, and research on cost-effective

adaptation strategies for India is limited. Adaptation finance tracking is subject to the same transparency issues as other green finance, in addition to the lack of metrics for measuring adaptation and data availability.

In conclusion, there is a need for a robust and transparent framework or mechanism to define what constitutes green investments (considering both mitigation and adaptation) and track them effectively. There is limited evidence of carbon prices incentivising innovation and technology diffusion in other countries, and they could be potentially regressive in India. Therefore, they can at best complement less distortionary measures such as blended finance and green bonds that can increase investment in low-carbon alternatives. Carbon prices can play a more significant role later in incentivising behavioural shifts to these alternatives once they are accessible to all sections of society.

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