

Mapping effectiveness of Indian COP24 commitments towards low carbon climate resilient sustainable growth trajectory for India

Topic: E3-India initiative- Regional solutions for economy and environment

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Abstract:

Alleviating climate change impacts for India entails a binary of climate change mitigation and resilience actions. India has reinstated its commitment to the negotiated 20C carbon space at Katowice recently and aims to execute following climate action plan through the Nationally Determined Commitments (NDCs) by 2030:

- i) Decarbonisation of energy sector by achieving 40% of electric power installed capacity from non-fossil fuel sources by 2030
- ii) Increase process efficiency to reduce the carbon emissions intensity of India's gross domestic product (GDP) by 33% to 35% from the 2005 levels
- iii) Creating carbon sinks of about 2.5 to 3 billion tons

A recent world bank report indicates that climate change impacts are likely to lower the living standards of nearly 600 million Indians i.e. half of India's population. However, limiting warming to 1.5°C makes it much easier for developing economies like India to achieve many Sustainable Development Goals (SDGs) like poverty eradication, water access, safe cities, food security, healthy lives and inclusive economic growth. The study evaluates scope of climate resilient growth linked with the negotiated techno economic transitions under Indian NDCs using E3-India model.

E3-India is an integrated dynamic macro econometric model which captures Economy, Energy and Environment (E3) linkages and allows researchers to assess wide range of economic policies including energy and environment specifically at the state level in India.

The research work involves compiling a matrix of different scenarios by constructing three pathways i) Business as usual scenario (~RCP 8.5), ii) Committed 20C NDCs, iii) Aspired 1.50C (~RCP 4.5) including combinations of energy decarbonisation, process efficiency and carbon sink development actions.

The socio-economic outcomes of pathways with respect to income generation, employment and government revenue creation are evaluated for several Indian states identified as most vulnerable to climate change in terms of negative impacts on living standards of the population.

This study provides a socio-economic evaluation of the green growth opportunity implicit in the existing NDC targets for India and its distributional implications across Indian states. A study like this will be a crucial base document for formulating state level climate policy in India. The study further demonstrates effectiveness and use of integrated modelling frameworks in regional models like E3-India enabling more informed policy decisions for climate change impact alleviation.

Key Words: Climate resilience, NDC, Energy transition, green growth