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Transition Risk

Technology transition in power and industry critical; policy intervention can support entities' voluntary climate efforts

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Technology transition in high carbon emitting sectors, such as power, cement and steel, is critical.

Massive investments needed in RE, cement, steel and Green Hydrogen for capex and support infrastructure.

Transition risks are those associated with the pace and extent at which an organisation manages and adapts to the internal and external change to reduce greenhouse gas (GHG) emissions and transition to Renewable Energy (RE). Power and industry, being high carbon emitting sectors, may face immediate risks on account of technology transition. As of now, the Government of India (GoI) has not mandated a shift to green technology. However, some entities are taking voluntary steps towards the same.

Power

- Fossil fuel-based power is the major source of carbon emissions in India. With the GoI's climate target of 50% non-fossil power by 2030, various schemes have been launched to boost RE power in India.
- ICRA projects the share of non-fossil, fuel-based installed capacity in the overall installed capacity to rise to 59% in FY2030 from 45% in FY2023. Moreover, India would need an estimated Rs. 11-12 lakh crore investments till 2030 along with over Rs. 5-6 lakh crore towards transmission infrastructure and storage capabilities.
- Although there are Public Sector Undertakings (PSUs) in the sector, the capacity addition in RE is driven by the private sector.

Industry

Cement

- While producing a tonne of cement, an equivalent amount of carbon dioxide (CO₂) is released. Carbon Capture Utilisation and Storage (CCUS) will reduce more than 60-70% of such carbon emissions in the cement manufacturing process, as maximum emissions are generated while producing clinker.
- Niti Aayog's report on CCUS estimates that the cement sector would need 2 mtpa of CCUS capacity by 2030. The capital cost for this will be Rs. 1,600–1,800 crore.
- Green initiatives/targets of some of the major Indian cement players are in line with the sector's global climate targets.

Entities are making voluntary efforts following India's announcement of its climate goals and complex implications of various Government policies. Policy interventions by the Gov can accelerate the voluntary climate efforts of entities.

Industry

Steel

- Given the abundance of virgin iron ore and lack of domestic scrap, the domestic steel industry overarchingly uses coal as a reducing agent, leading it to remain high on the emission curve.
- However, following India's 2070 net zero target and policies on carbon tax implemented by some countries, domestic steel makers have sharpened their focus on reducing their carbon footprint by as much as 25-30% through various technological interventions by CY2030.

Fertiliser, Chemical, Refinery

- Hydrogen is mainly used by the refining, chemical and fertiliser sectors currently with no use of Green Hydrogen at present.
- With the launch of the National Green Hydrogen Mission, Green Hydrogen is planned to be used in refining, chemical and fertiliser sectors, along with transport, by 2030. The capex for the same will be in the range of Rs. 8-9 lakh crore.
- Several Indian entities have launched pilots/ announced plans to set up production facilities for Green Hydrogen/ Green Ammonia.

High carbon emitting sectors need a push factor to adapt to the technology transition risk. This push can be in the form of policy interventions, subsidies, duty exemptions or tax benefits. Though entities (in these high carbon emitting sectors) are taking voluntary steps, Government interventions will be critical to hasten technology transition in these hard-to-abate sectors to achieve India's climate goals for 2030.



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