HSBC Global Research

Energy Transition

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# India's green dream

## A sizeable opportunity … if obstacles are removed

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Economics - India

- With India still to build 60% of its much-needed capital stock, a greener investment path may bring opportunities …
- … but only if power distribution hurdles are overcome and an institutional framework for low-carbon growth is implemented …
- … which are crucial for the bumpy transition years

**Balancing growth and being green:** India's *per capita* emissions and energy use is a third of the global average. Yet, it is the world's third-largest emitter and is geographically vulnerable to climate change. Keeping up a rapid growth clip while reducing emissions will be challenging. But we believe it is possible thanks to technological innovations that enable switching to renewables to meet energy needs. India has already taken several important steps towards decarbonisation and is broadly on track to meet its Paris Agreement targets. But, to keep emissions in check, it needs to decide between a 'net zero' and a 'low carbon' approach (COP26 will be an important marker). Net zero requires a dramatic shift in the power mix and industrial processes, but would signal India is serious about playing its part and would attract international R&D and external financing while improving access to overseas markets for its exports.

**The dream:** Some 60% of India's capital stock being planned for 2040 – such as machinery in factories – has not yet been built. The country can potentially leapfrog into new green technology, rather than being overburdened by 're-fitting' obligations. A green label could provide a fillip to India's exports and manufacturing. India missed the bus on plugging into global manufacturing value chains a few decades ago. We believe this opportunity is too big to miss. While the private sector will have to play the main role, several catalysts could give the initial push. We find that about half of India's industry could be encouraged by government incentives and partnerships, and the remaining by investor cues and frontier technologies.

**The obstacles:** But first, some obstacles need to be addressed. The finances of power distribution companies need to be improved to fund the grid upgradation necessary for scaling up renewables. India needs a coordinated institutional framework that can help it to overcome multiple levels of complexity – such as federalism, fiscal constraints, and bureaucracy – and provide an anchor for the transition years. The energy investment requirement will be high, scaling up to about USD160bn per year.

**Bumpy years:** Inflation may be volatile in years when thermal power is disincentivised, but renewables haven't reached their full potential. The central bank will have to work hard to anchor inflation expectations. Fiscal revenues from oil and coal (at 3-3.5% of GDP) should fall gradually, but this may be offset by revenue-side reforms. The trade deficit could rise if the transition to EVs is faster than the increase in domestic battery production. Careful sequencing will help. The hope is that, once the transition is complete, the macro variables will settle, but at improved levels of GDP growth, sustainability and stability.

*This is an abridged version of a report by the same title published on 22-Oct-21. Please contact your HSBC representative or email AskResearch@hsbc.com for more information.*


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## India's climate debate

**Vulnerability to climate change**
With global temperatures rising, the climate scientists project an increase in both frequency and intensity of extreme weather events. India remains uniquely vulnerable to climate change due to its topography and socio-economic structure. IMF estimates India's real GDP per capita could fall by 10% by 2100 in a business-as-usual scenario.

**Progressing but not ambitious enough**
In response to climate threat, India has already taken several important steps towards a greener future. Even its per capita energy use is only one-third of the global average. It has ratified to the Paris Agreement and is set to not just meet but over deliver on two of the three climate pledges (NDCs). For instance, 40% of India's installed power generation capacity was meant to be from non-fossil fuel sources by 2030. India has already reached 39% by September 2021. However, achieving NDC commitment may not be good enough as absolute carbon emission show no signs of peaking.

## A rare opportunity

India's manufacturing sector is small as we estimate that 60% of its capital stock in 2040 has not been built yet. We believe transition to green economy could bring more economic opportunities.

**Exports advantages**
Despite India's large domestic market, exports are a critical driver of overall GDP growth as exports not only open up new markets only but also bring in competition that drive efficiency advancement. A green growth trajectory and a 'green label' for its exports could strengthen the competitiveness and prospects of India's exports. Under the international race to low-carbon economy, a 'green label' may broaden the market access, especially if more countries impose carbon border tax or other carbon pricing mechanisms. Most importantly, they could serve as a shot in the arm for India's *low-skill* exports, which have lost out on efficiency gains so far, but could gain from the 'green label'.

**A source of jobs**
The transition to low carbon may not hurt jobs on aggregate if it is complemented with re-skilling. Based on current job intensity and governments' renewable capacity target, we estimate that 2 – 2.5m additional jobs could be created by 2050 in the renewable power sector given that renewable energy industry tend to be more labour intensive. However, some jobs would be lost, particularly in coal industry. Netting this off against jobs created by the renewables sector suggests that a transition to renewables, on net, will not hurt jobs. Rather, with the right skilling and re-skilling efforts and 'distributed renewables', it could add to jobs.

**Leading catalysts for change**
The private sector will have to eventually play the main role in the green transition, but several catalysts could give the initial push. We divide India's Index for Industrial Production across three buckets of transition:

1. **Investor led**: Sectors that directly or indirectly facing the which are directly or indirectly facing the investor stick (i.e. higher borrowing costs for large polluters) or carrot (availability of capital for green and promising ventures). For example, thermal power and solar power.
2. **Incentive-led**: Sectors that needs government support as those are not fully in the radar of investor community yet. For example, natural farming, green buildings, or municipal waste.

3. **Frontier technology-led**: Sectors which need low carbon technology advancement. For example, cement and steel.

Half of India's industry falls in the second bucket; the other half equally between the first two.

## Overcoming obstacles

Seizing the opportunity, however, will entail overcoming several obstacles. Here we outline two: (1) issues faced by state-owned power distribution companies (discoms), and (2) the lack of a consolidated energy transition framework.

**Addressing power distribution roadblocks**

The power demand in India is likely to increase three-fold by 2050 as per estimate of BP. However, the weak financial status of the discoms is limiting the investment on infrastructure upgrade such as smart metering. Also, the discoms impose restrictions to discourage the private sector from directly sourcing renewable power.

To fix this, India will have to go through a host of reforms ranging from (1) a truly independent regulator who ensures market pricing of power tariffs, (2) incentives that speed up smart metering and plug T&D losses, (3) policies that encourage discoms to be a facilitator between power producers and users, and (4) the privatisation of discoms over time.

**The need for a coordinated institutional framework**

While India has taken several important steps to transition to a greener economy, the policy framework now comprises a set of disparate policies. The federal structure with differing objectives across the state and central governments make matters more complex. We think India needs to develop a coordinated institutional framework which outlines a credible trajectory for emissions reduction, informed by a holistic set of low-carbon pathways around economic developments; and anchors the massive transition that this will entail. This is important because, for at least four reasons, the green transition will be complex: (1) it will need a multi-step decarbonisation strategy, (2) it will have a large funding requirement, (3) key economic agents will face major shifts, and (4) all macroeconomic variables will be impacted.

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