

# India's Green Industrial Policy Pursuing Clean Energy for Green Growth

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Keeping with the global trend, India seems to be executing a “Green Industrial Policy” that seeks to prioritise production and consumption of clean energy. Will it lead to green growth and sustainable development?

The views expressed are personal.

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The current global financial crisis demands swift action by governments to support, restructure and sustain industrial activities. Simultaneously, addressing the global climate change requires significant modifications in industrial incentives and regulations. Both the events have forced the state to bring industrial policy back to the core of policy agenda. Consequently, the new industrial policy – called green industrial policy (GIP) – seeks to make industrial growth green, inclusive and economically dynamic.

GIP, seeking to develop new industries and adopt new technologies, involves essential policy changes. It is different

from conventional industrial policy in two ways: first, it requires different policy instruments; second, it involves stronger state engagement in markets. Under GIP, states seek to promote sustainable patterns of production and consumption by pricing resource consumption and promoting efficient technologies through market transformation.

There is a global upsurge in adoption of GIP by both developed and developing states. The underlying rationale for its adoption is to create globally competitive domestic firms, while it promises a range of spin-off developmental and environmental benefits. Considering the fact that energy is a major input for industrial process and major contributor to industrial emissions, GIP seeks to tame energy consumption and hasten the development of low-carbon alternatives to fossil fuels. Will the alleged GIP, with its emphasis on clean energy production and consumption, lead to green growth and sustainable development?

### Bundling Policies and Interests

Keeping with the global trend, India seems to be pursuing the GIP, particularly since the past decade. India is not only a major emerging economy with high industrial growth prospects, but also a major consumer of energy resources. Consequently, production and use of clean energy have rightly been prioritised in India's GIP for achieving the goals of green growth and sustainable development. India has been promoting renewable energy (RE) as an alternative to fossil fuels to meet rising industrial energy demand, and energy efficiency (EE) measures to tame the demand.

The country has set a target to raise its RE capacity to 74 gigawatts (GW) by 2022, including 22 GW of solar capacity. With a renewable installed capacity of 27.7 GW (13% of total installed capacity), the country is already a global leader. Over the Twelfth Five-Year Plan period (2012-17), it aims to install 30 GW of renewable capacities with a federal outlay of around \$4 billion. The country has certainly set an ambitious target for RE development. The private sector has a strong role to play in executing the plan; in fact, much of RE development so far has taken place with the private sector. Nearly one-third of the planned investment in infrastructure sectors over the Twelfth Five-Year Plan period has been earmarked for the electricity sector; about half of this investment is sought from the private sector. The state has been engaged in setting up a favourable policy environment, with complementary policies, regulatory interventions, incentive mechanisms and research and development (R&D) support, to facilitate RE development.

While wind constitutes a large share (about 70%) of India's existing RE installed capacity, considering the potential of solar energy, the country has developed a strategy to tap it. A national mission – the Jawaharlal Nehru National Solar Mission (JNNSM) – has been set up to facilitate solar energy development to achieve the target of 20 GW grid-connected and 2 GW off-grid solar capacities by 2022.

The state has made several policies to mandate and incentivise RE production at national and sub-national levels. Renewable Purchase Obligation (RPO) is a key

policy to create demand for RE. Each sub-national electricity regulatory commission has set a specific RPO for the utilities in their respective states. The national target was set at 5% for the financial year 2009-10 and was to be increased by 1% each year for the next 10 years, with the aim to procure 15% of consumable electricity from RE sources by 2020. The policy also makes a provision for solar-specific RPO set at 0.25% in 2012, to be raised to 3% by 2022. The Renewable Energy Certificate (REC) programme is being implemented to penalise the utilities that fail to meet their RPO; they have to compensate by purchasing equivalent RECs (Charnoz and Swain 2012).

To encourage private sector engagement, the state has made provisions for capital subsidy and interest subsidy for setting up RE production units. RE generators have the choice to trade electricity at a preferential tariff or to trade RECs separately after selling the electricity at a competitive tariff. In addition, the state is providing tax benefits to both generators and manufacturers on import of RE technology (e.g., solar panels) and additional support on R&D. Simultaneously, the state has enforced local content requirement (LCR) – raised to 75% in the second phase of the JNNSM – to promote growth in domestic manufacturing.

India has an equally ambitious target for EE, with a target to save 10 GW by 2014-15 and, thus, avoid 19 GW of additional generation capacity. The National Mission on Enhanced Energy Efficiency (NMEEE) has been set up to facilitate the process with mandatory provisions and incentive mechanisms. The perform, achieve and trade scheme targets energy-intensive industries, which account for 60% of India's total primary energy consumption, and are required to meet a certain level of EE in a specified time period. Those who achieve EE gains beyond their target are rewarded with energy saving certificates (ESCerts); those who fail to meet their target can buy ESCerts to make up the difference, or pay a penalty (ibid).

With the launch of the scheme last year, India has become the first developing country to adopt market-based

mechanisms to trade EE. Simultaneously, the state is using market transformation strategy to promote production and use of energy efficient appliances in designated sectors. While manufacturers are being incentivised to manufacture super-efficient appliances, products are being labelled to raise consumer awareness and demand (Swain 2013). The Standards and Labelling Programme being implemented seeks to raise consumer awareness and demand for energy efficient equipment. The Super-Efficient Equipment Programme is a rebate programme that incentivises leading manufacturers to produce super-efficient equipment on a large scale and market them at a competitive price. Both the programmes, implemented by the Bureau of Energy Efficiency, aim to hasten energy conservation while giving a boost to the manufacturing industry.

The Indian approach seeks to ensure domestic energy security and dynamic industrial growth catering to domestic developmental needs, while accruing mitigation co-benefits to address the global call for climate action. Unlike in the past, when the state retained control over the market, under the GIP, the state seeks to actively engage with the market by creating a favourable policy environment. Realising the limitation of state capacity to implement the strategy, the state is seeking to build non-state (market) players and offer incentives to hasten the process (Harrison and Kostka 2012). An initial high capital subsidy to generators and enforcement of LCR to kick-start the solar industry, and setting-up a market for energy service companies are two good examples.

### The Way Forward

India's GIP holds good promises for green growth and sustainable development. Achieving the JNNSM target will result in mitigation of 95 million tonnes (Mte) of CO<sub>2</sub>e annually by 2022. Simultaneously, NMEEE has potential to achieve mitigation of 98 Mte of CO<sub>2</sub>e annually. While promoting dynamic clean energy industries, GIP is expected to reduce carbon intensity of Indian industries. Clean energy-based industrial growth is expected to be inclusive by promoting regional

development, employment generation and improved energy access.

Though India has ambitious targets, and the right policies and incentives in place, it is too early to make any judgment on the outcome. Yet, two fundamental challenges weigh upon India's GDP, viz, finance gap and lack of market transparency. While access to private finance is crucial for development of the clean energy industry, current interest rates remain too high and financing institutions remain reluctant to invest. A comprehensive financing strategy optimising various funding sources is a key prerequisite for scaling-up the clean energy industry. Prevailing lack of market transparency in the sector may result in rent-seeking and market distortion. A study by the Centre for Science and Environment reveals how a major conglomerate has subverted rules to acquire a stake in the JNNSM much larger than

allowed legally (Bhushan and Hamberg 2012). The state needs to provide real-time, credible and usable information that the public can trust and use to hold it and private actors accountable. Simultaneously, the state needs to strengthen the monitoring and evaluation mechanisms to ensure that rules and norms are not disrupted.

Addressing these challenges, which are not insurmountable, will largely depend on state-business relations, private sector capacity, bundling of interests and policies, and creative manoeuvres taken by the state. Much depends on the extent to which the private sector shares the state goals, and the way they are organised and their capacity for collective action. At the same time, the state needs to build the confidence that private activities will be supported – not frustrated – and rent-seeking will be avoided. The process will shape, and be shaped by, state-business

relations and build new forms of developmental coalitions. Since the policies are not self-implementing, independent electricity regulators would emerge as key facilitators (or blockers). The regulators have key roles to play in implementing these policies and would affect the pace and pattern of transition. If successful, India could lay out a path for green growth in other developing countries too.

#### REFERENCES

- Bhushan, C and J Hamberg (2012): "The Truth about Solar Mission", *Down to Earth*, 15 February.
- Charnoz, O and A Swain (2012): "High Returns, Low Attention, Slow Implementation: The Policy Paradoxes of India's Clean Energy Development", AFD Working Paper 125, July, Agence Française de Développement, Paris.
- Harrison, T and G Kostka (2012): "Manoeuvres for a Low Carbon State: The Local Politics of Climate Change in China and India", DLP Research Paper 22, June, Developmental Leadership Programme.
- Swain, A (2013): "Taking Energy Efficiency to the Market", *Business Standard*, 7 March.