

## Regulating the Race to Renewables

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*Keeping with the global trend, India has been an active player in the race to renewables, seeking to expand its renewable energy portfolio. To achieve India's ambitious renewable goals, the issue note suggests, the electricity regulators have to play the key role of arbitrator and facilitator.*

Renewable energy (RE) seems to be considered as a panacea for global climate challenge, while it is perceived to offer developmental co-benefits. Consequently, there is a race among nations to raise their respective renewable portfolios. More recently, investment on RE capacity addition has exceeded the investment on additional fossil-fuel based generating capacity addition worldwide. Global investment in RE has gone up from US\$ 39.6 billion in 2004 to US\$ 279 billion in 2011. It has dropped to US\$ 244.4 billion in 2012, largely because of the drop in investment by developed countries and may be partly because of the drop in cost of RE technology. However, investment made by developing countries has been progressively increasing over years. In 2012, the gap between the developed and the developing economies in terms of overall investment shrunk to just 15 per cent.

Keeping with the global trend, India has been an active player in the race to renewables, seeking to expand its RE portfolio. The country has set a target to raise its RE capacity to 74 gigawatt (GW) by 2022, including 22 GW of solar capacity, and procure 15 per cent of consumable electricity from RE sources by 2020. With renewable installed capacity of about 30 GW, the country is already a global leader.

Over the 12<sup>th</sup> Five-Year Plan period, it aims to install additional 30 GW renewable capacities with a federal outlay of around US\$ 4 billion. The country has certainly set an ambitious target for RE development. The underlying objective is to achieve domestic energy security while attaining spin-off benefits like regional development, employment generation, globally competitive domestic industries, improved energy access for the poor and climate mitigation.

Private sector will play a vibrant role in executing the plan. In fact, much of RE development so far has taken place by private sector. Nearly one-third of the planned investment in infrastructure sectors over 12<sup>th</sup> Five-Year Plan period has been earmarked for the electricity sector; about half of this investment is sought from private sector.

Proposed mode of private participation is an evolution from the past experiences. Failure of public electrification and limits of market-first approach has forced the state to implement a partnership model, pairing the public sector with private sector. Even though the rhetoric remains that of market reformism, with actual implementation done by the private players, emerging electricity governance architecture seems to be a pragmatic hybrid with the state playing a stronger role of steering and guiding.

Given its role, the state seeks to promote RE development through market players by setting up a favourable policy environment, with complementary policies, incentive mechanisms and R&D support.

India has adopted a unique approach to RE development by combining all the policy and regulatory drivers practised globally. It offers the RE producers preferential or feed-in tariffs, based on the cost of generation for each technology.

Renewable Purchase Obligation (RPO) is a key policy to create demand for RE. Each subnational electricity regulatory commission has set a specific RPO for the utilities in respective states. The national target was set at 5% for the FY 2009-10 to be increased by 1% 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 who fail to meet their RPO; they have to compensate by purchasing equivalent RECs. In pursuit of its aim to be a RE manufacturing hub, the state has also employed policy instruments like local content requirement, particularly for the solar sector, to support and promote domestic industries.

Are these policy initiatives enough to achieve India's renewable ambitions? These state initiatives are susceptible to failures and rent-seeking, which will affect India's energy security scenario as well as the development

perspectives. However, these failures can be prevented through proper monitoring, evaluation and impact assessments. This calls for a stronger role to be played by the sector regulators.

While the existing policy instruments for RE promotion are being executed by the sector regulators, there is need for their proactive engagement in monitoring, evaluation and impact assessment. Since the policies are not self-implementing, the independent electricity regulators would emerge as key facilitators (or blockers). The regulators have a key role to play in implementing these policies, which would affect the pace and pattern of transition from a fossil-fuel driven electricity sector to RE based electricity sector.

Moreover, private participation will depend upon the extent to which 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. Being apolitical institutions, the sector regulators can play a crucial role of an arbitrator and help to instil confidence among the private actors.

The lack of market transparency has been a barrier that promotes rent-seeking and market distortions. The sector regulators must address it by providing real-time, credible and usable information through periodic progress reports that the stakeholders can trust.

While governments tend to pick 'winners' (by favouring a particular technology), the regulators must focus on cost-effectiveness and find ways to let the loser go. It is important to recognise the mistakes and withdraw state support to losing technologies before they become too costly.

Finally, though the issues associated with each RE technology varies, the regulators need not become experts in each technology. Nevertheless, they need to be aware of the strengths and limits of each technology as policies are developed and employed.

Regulating the race to renewables will require creative manoeuvres and bundling of interests and policies, and may help to build private sector capacity and foster state-business relations. If successful, India could lay out a path for promotion and regulatory governance of RE in other developing countries.

### Key Regulatory Policies India for Promotion of Renewable Energies

Policies	Year of Enactment	Significant Features/Mandates
<b>Electricity Act, 2003</b>	2003	<ul style="list-style-type: none"> <li>Promotion of Renewable Energy by SERCs. [Section 61(h) &amp; Section 86(1) (e)]</li> </ul>
<b>National Electricity Policy</b>	February 12, 2005	<ul style="list-style-type: none"> <li>Encouraging private sector participation.</li> <li>Thrust on procurement of renewable energy through competitive bidding process.</li> <li>Differential tariffs to promote non-conventional technologies.</li> </ul>
<b>National Tariff Policy</b>	January 6, 2006	<ul style="list-style-type: none"> <li>Directions to SERC's for taking into account, availability of renewable energy resources in their region and its impact on retail tariffs, while fixing a minimum percentage for purchase of energy from such sources.</li> </ul>
<b>National Action Plan on Climate Change</b>	June 30, 2008	<ul style="list-style-type: none"> <li>Renewable energy procurement to be set at five per cent of the total grid purchase, which should be increased by one per cent each year for the next 10 years.</li> </ul>
<b>Policies on Renewables A Report by Forum of Regulators &amp; CERC</b>	November 2008	<ul style="list-style-type: none"> <li>Uniformity in regulatory approach to clean energy development.</li> <li>Promotion of co-generation and generation of electricity from renewable sources of energy.</li> </ul>
<b>Jawaharlal Nehru National Solar Mission</b>	November 23, 2009	<ul style="list-style-type: none"> <li>Enhance indigenous manufacturing capacity of solar energy.</li> <li>20 GW grid-connected and 2 GW off-grid solar capacity additions by 2022.</li> </ul>
<b>CERC Regulations on Renewable Energy Tariff</b>	December 3, 2009	<ul style="list-style-type: none"> <li>Following a cost-plus approach in deciding the power purchase tariff.</li> <li>Generation based incentives.</li> <li>Sharing clean development tariffs.</li> <li>100% proceeds from CDM to be retained by the developer.</li> </ul>
<b>CERC Regulations on Renewable Energy Certificates</b>	January 2010	<ul style="list-style-type: none"> <li>REC was introduced as a tradable commodity and the states deficient in renewable energy source can purchase the same to meet their RPO requirement.</li> <li>Encourage competition to reduce costs.</li> </ul>