

RE-Energising India

Policy, Regulatory and Financial Initiatives
to Augment Renewable Energy Deployment in India



Policy Brief



Climate Parliament

Legislators working worldwide to combat climate change

Prepared By

Idam Infrastructure Advisory Private Limited

Background: Need for Renewable Energy

Energy Access

India is endowed with huge renewable energy (RE) resources, but the same cannot be said of fossil fuels such as oil, gas, and coal. Fossil fuels reserves are rapidly depleting, but RE sources, by definition, are perpetual and therefore constant sources of energy. In spite of the abundance of RE sources, India's per capita energy consumption is one of the lowest in the world. The reason for such low level of consumption is not low demand, but poor access to energy. In spite of a number of programmes and schemes for rural electrification India has one of the lowest levels of access to modern energy. Even today, India has 75 million households without access to electricity¹. The figure 1 and 2 below show that despite rise in electrification, the households having no access to lighting has also increased. In order to provide access to energy to the remotest areas, energy needs to be either economically deliverable or locally tapped. RE is tapped locally and used at source, thus avoiding transportation costs altogether

Figure 1: Percentage of rural households having access to electricity

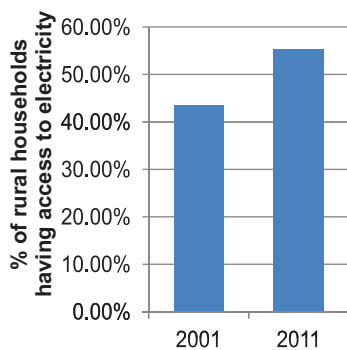
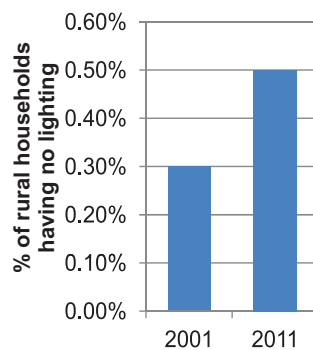


Figure 2: Percentage of rural households having no access to lighting



Energy Security

RE is a 'domestic' source of energy. The huge potential of RE in India therefore means that all of it is available to the country for its own use for innumerable years. Yet, India relies heavily on imported fuel. India's expense on petroleum imports is, and has been for the past several years, almost equal to its entire trade deficit. In the present macroeconomic scenario, it is difficult to sustain the imports of fossil fuels. At the same time, the domestic coal reserves are being rapidly depleted. At a growth rate of 5% in domestic production, all of India's current extractable coal resources (including proven, indicated, and inferred reserves) will be exhausted in about 45 years².

GHG Emissions

Although India is one of the lowest Green House Gas (GHG) emitters in the world on per capita basis, it is the fourth largest emitter of GHG on the basis of total annual emissions, next only to China, USA, and the EU³. India emits more than 5% of global Carbon Dioxide (CO₂) emissions and shows a clear trend of rapid increase: CO₂ emissions almost tripled between 1990 and 2010⁴. India's voluntary target is to reduce the emissions intensity of its GDP by 20%–25% by 2020. There is also growing international pressure on India to reduce its GHG emissions through concrete actions.

Energy Access

- India has 75 million households without access to electricity.
- Per capita consumption in rural households was only 8 units per month as compared 24 units in urban households.

Energy Security

- The petroleum import bill from April to November 2012 was over Rs 9 trillion, and trade deficit during the same period was over Rs 10.37 trillion.

- At a growth rate of 5% in domestic production, all of India's current extractable coal resources will be exhausted in about 45 years.

GHG Emissions

- India is the 4th largest emitter of GHG on the basis of total annual emissions, next only to China, USA, and the EU
- India's voluntary target is to reduce the emissions intensity of its GDP by 20%–25% by 2020.

¹ Census of India, 2011: Source of Lighting

² India's coal reserves are vastly overstated: is anyone listening?, *TERI, March 2011*

³ Trends in global CO₂ emissions; 2012 Report, *PBL Netherlands Environmental Assessment Agency, European Commission Joint Research Centre*

⁴ CO₂ Emissions from Fuel Combustion Highlights (2012 Edition), *International Energy Agency*

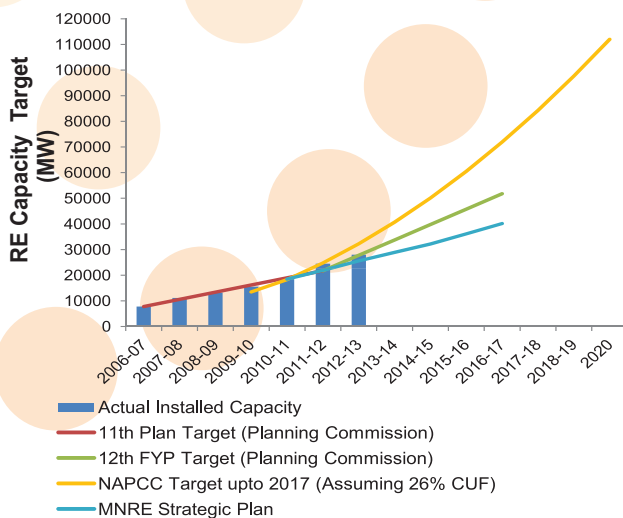
The burning of fossil fuels for electricity and heat is the largest single source of global GHG emissions. RE based applications reduce GHG emissions by displacing energy production from the combustion of fossil fuels, which are CO₂ intensive. Hence, RE can significantly contribute to reducing India’s carbon footprint.

Thus, large-scale deployment of RE can help India in addressing three most important issues that confront the country today: energy access, energy security and GHG emissions.

RE Targets

Most countries have set targets for the share of RE in total energy production or consumption of the country for the future, which forecast the future energy mix. These targets serve as road maps for policymakers in formulating policies that help to add generation capacity from renewable sources of energy in a planned manner. Because of that, the targets also become important indicators for project developers and investors to assess opportunities for investment in the country.

Figure 3: Ambiguity in renewable energy targets



The varied RE targets reflected in such official documents as the Integrated Energy Policy Report (IEPR), the Planning Commission’s 12th FYP, MNRE’s Strategic Plan, and NAPCC, reflect ambiguity and policy uncertainty among policymakers. As seen in figure 3, there is no coherence in the RE target setting because of the co-existence of various policies. Given that our highest annual capacity addition even at a much higher GDP growth rate than at present was only about 5,000 MW, no serious effort in achieving the NAPCC targets have been taken. Thus there is a dire need for strong political will, a stable policy environment overcoming the existing vagaries, and funds to make the technologies more efficient.

As a part of analysis and a comprehensive stakeholder consultation process that followed, several issues hurting growth of RE were brought up and analyses of all issues was carried out. The recommendations developed subsequently, are a combination of interventions in the policy and regulatory framework for the sector and financial innovations and fiscal and budgetary provisions to give the much-needed impetus to the sector. Although an attempt has been made to address several important issues and offers recommendations to deal with the issues, it does not claim to cover all possible areas of concern in the sector. Due care has been taken to highlight the most important and relevant issues pertaining to RE in India. The recommendations are presented in the following section.

RE Targets

- The Government has set a target of adding 30,000 MW of RE capacity during the 12th FYP.
- MNRE's ‘Strategic Plan for New and Renewable Energy Sector for the period 2011-17’ has targeted 21,700 MW during 2011 to 2017.
- NAPCC targets at 15% of grid electricity from RE by 2020 which may correspond to adding up to 90,000 MW by 2020.

- Our highest annual RE capacity addition even at a much higher GDP growth rate than at present was only about 5,000 MW.
- There is no coherence in the national RE targets specified in different government documents.
- Such targets are important indicators for project developers and investors to assess opportunities for investment in the country.

Recommendations to Augment Deployment of Renewable Energy

Short Term

Establish National Energy Access Mission

- A **National Energy Access Mission (NEAM)**, aimed at supplying modern and clean energy to all in sufficient quantity at affordable prices, should be established. The primary focus of NEAM should be on large-scale deployment of RE technologies to improve access to energy. It should be done through public–private partnerships. Government funding should act as a catalyst in leveraging private-sector capital for this mammoth task. The mission should be under the administrative control of Ministry of New and Renewable Energy (MNRE) and should set a target of 10 years to achieve universal energy access.

- To attract capital from the private sector, widely accepted PPP models as feed-in tariff, viability gap funding, and franchisee arrangements should be identified and supported by NEAM. To ensure that adequate funding is available for the mission, it is proposed a **National Energy Access Fund (NEAF)** is set up under the administrative control of MNRE. Potential sources of funds for NEAF may include, contributions from National Clean Energy Fund, an energy access cess on income tax on the lines of education cess, Contribution by companies as Corporate Social Responsibility (CSR) activity, donations by individuals under Section 80G of the Income Tax Act, 1961, Contributions by multilateral agencies for national development, etc

- The Government of India should immediately announce the mission and set up a committee to formulate the institutional and governance structure, the role of central and state governments, funding arrangements, nature of programmes, etc.

National Energy Access Mission

Focus: Improving energy access through clean energy.

Timeline: 10 years.

Implementation models: PPP models like feed-in tariff, viability gap funding, and franchisee arrangements.

Funding source (NEAF): NCEF, energy access cess, CSR, individual donations.

RPO and REC

- Renewable Purchase Obligation (RPO) is an obligation on discoms, and certain other 'obligated entities' to

Renewable Purchase Obligation and Renewable Energy Certificates

- The Government of India should amend the National Electricity Policy (NEP) in consultation with state governments to align the RPO of the various states with nationally accepted RE capacity addition roadmap. The Forum of Regulators may be further empowered to develop and implement a methodology to evolve a long term RE capacity addition target and trajectory.

- The MNRE should formulate guidelines for monitoring and verification of Renewable Purchase Obligation (RPO) compliance by state nodal agencies, whereas, the Central Electricity Regulatory Commission (CERC) should modify its Renewable Energy Certificate (REC) regulations to permit bilateral trade and ensure long-term visibility of the prices of RECs and of the Average Power Purchase Cost (APPC). In order to ensure long-term visibility of the revenue from RECs, the concept of banding or vintage multipliers should be implemented.

Empower the Ministry of New and Renewable Energy

- Relevant sections of EA 2003 should be administered by MNRE rather than by the Ministry of Power. This can be done by suitably amending the Government of India (Allocation of Business Rules), 1961.

- Section 3 of EA 2003 should be amended to make provisions for a National Policy on Electricity from Renewable Energy Sources (since a policy under EA 2003 can address only electricity), which should be drafted by MNRE and approved by the Ministry of Power and should remain in force until a comprehensive National Renewable Energy Policy (see page 6) is notified.

purchase certain percentage of their electricity from RE sources.

- Renewable Energy Certificate (REC) is a market instrument which is equivalent of 1 MWh of renewable energy, purchase of which can be used to meet the RPO.

- Average power purchase cost (APPC) is the average per unit power purchase cost of a distribution company. If a generator wishes to avail RECs against its RE generation, the discoms purchase its power at the APPC rate.

Reforms for Mobilization of Capital

- IREDA, PFC, PFC Green Energy Limited, PTC India Financial Services, IDFC etc. should issue green bonds with tax benefits under Section 10 (23G) specifically for the purpose of lending to RE projects. The coupon rate should be set so as to maintain a balance between the investors' expectations of returns and the project requirement of low-cost financing. The proceeds of green bonds should also be utilized for refinancing existing RE project loans.
- Buyers of distributed generation systems such as rooftop systems and RE applications such as solar water heaters should be offered the benefit available for housing loans; of deduction of interest and principal payment under Sec 24 and 80C respectively.
- The Government of India should revise the guidelines for the National Clean Energy Fund (NCEF) to ensure that the proposed 'green energy corridor' for strengthening the transmission network for RE is eligible for funding from the NCEF. A monitoring and verifying committee should be constituted to ensure that the collected cess is aligned to the quantum of funds anticipated.
- A partial risk guarantee fund should be set up for RE projects out of the NCEF. The fund should provide commercial banks with partial coverage of risks associated with loans given to RE projects. The overall objective should be to generate confidence among investors and lending institutions by introducing mechanisms to mitigate risk.

Policy and Cross Sectoral Support for Renewable Energy

- The MNRE should ensure that every policy or scheme introduced has a specific start date and a specific end date so that project developers and financing institutions can plan accordingly.
- There is an urgent need for rolling out the AD scheme

Income Tax Provisions

- Under the sec 10(23G) of the Income Tax (IT) Act, the income of the companies engaged in infrastructure projects by way of debt or equity is exempted from tax.
- Under Section 80C of the IT Act the government provides deduction of taxable income of up to Rs 1 lakh on investment in certain financial products in order to encourage savings.
- Sec 24 of the IT Act provides tax deduction against interest paid on a housing loan.

for wind energy, which saw huge additions to renewable capacity in the country.

- Govt should introduce a scheme to encourage states to increase the RPOs so that they are aligned to the national targets. The scheme should not only align the RPOs with the national target but reward compliance with the higher RPOs.
- All infrastructural and developmental policies such as Jawaharlal Nehru National Urban Renewal Mission (JNNURM), Delhi Mumbai Industrial Corridor (DMIC), Provision of Urban Amenities to Rural Areas (PURA), etc should contain provisions related to deployment. The MNRE should estimate the funds required for participating in these schemes and programmes and make suitable provisions in its budget.
- The MNRE should set up an institutional framework for coordination with the nodal ministries of identified schemes/policies. Since the ministries are working for common interests, RE must be integrated into the existing framework of JNNURM. This would broaden the scope of work and increase the overall availability of funds for RE development schemes.
- The Ministry of Petroleum and Natural Gas, in coordination with MNRE, must formulate a road map for gradual replacement of kerosene with RE. The funds for kerosene subsidy must be transferred to MNRE for implementing the solar lanterns programme, thereby discouraging the use of kerosene. Similarly, consumption of LPG can be reduced considerably by widespread use of solar cookers.

CSR for Renewable Energy

- The Ministry of Corporate Affairs, in consultation with the Ministry of Environment and Forests and MNRE, should formulate guidelines or issue clarifications to define environmental sustainability and specify activities that may be included under that label.

Infrastructure Policies

- JNNURM is a massive city-modernisation scheme launched by the Government of India under Ministry of Urban Development.
- DMIC a mega infrastructure project between Delhi and Mumbai, envisages a high-speed connectivity for High Axle Load Wagons of Double Stacked Container Trains supported by high power locomotives.

Kerosene Subsidy

In 2013/14, the subsidy on kerosene and domestic LPG was about Rs 300 billion whereas MNRE's budget was only Rs 15.21 billion

Contribution towards meeting CSR should include contributions made to the NCEF or the proposed NREF. Purchase of RECs without RPO setoff should be allowed as a CSR activity under ensuring environmental sustainability.

Medium Term

Amendments to the Electricity Act, 2003

- To address the issues associated with RPOs, the uncertainties and confusion around existing legal and policy provisions must be resolved by either issuing a suitable policy or amending EA 2003. Given the kind of certainty it provides, an amendment to EA 2003 should be the preferred option. The proposed amendment should clearly define the following terms or provisions.

1. RE Sources & Renewable Energy Certificates
2. Applicability of RPOs to open access and captive consumers
3. Treatment of cogeneration plants using fossil fuels
Applicability of RPOs on the same
4. Long-term targets for RPOs and penalties for non-compliance of RPOs

To ensure that state-level RPOs reflect national commitments, it is necessary that SERCs consider the relevant national targets. This could be done by either of the following methods.

1. Amendment to Sec 86(1)(e) specifying principles for determination of RPOs by SERCs
 2. Making FOR, a statutory body responsible for coordination of policies and programmes, responsible for identifying and implementing the principles that would ensure equitable distribution of national targets among all states
- Sec 86 (1)(e) of EA 2003 must be amended to enable SERCs to not just specify the RPOs but also ensure compliance with them. Thus the provision could enable the

SERCs to penalize obligated entities for non-compliance with RPOs. The section should also specify RPOs for open-access and captive consumers in addition to distribution licensees. Also, RECs should be identified under the Act as a valid instrument for fulfilment of RPOs by the obligated entities. Similarly, Sec 86 (1) of EA 2003 should be amended to enable SERCs to specify the APPC every year based on the guidelines formulated by the Central Government.

- Sec 181 of EA 2003 should be amended to allow the CERC to formulate regulations for issuing RECs and define common eligibility criteria for all renewable generators across the country.

Capacity Building of State Nodal Agencies

- The state nodal agencies, usually governed by state governments, are heavily dependent on subsidies provided by them even for routine operations. The state governments must endeavour to design business models for these bodies to ensure self-sustenance and help them advance from the existing subsidy-based business model to a revenue-based business model.

Modifications in DTC and GST

- The government should make sure that the tax holiday provided under the current direct tax laws to some categories of infrastructure projects are continued under Direct Tax Code (DTC).
- In order to avoid the cascading effect of indirect taxation under the Goods and Services Tax (GST) regime, electricity duty (ED) should be considered within GST and a suitable mechanism formulated to share the tax revenue from GST collected on account of ED between the centre and the states. The exemption on excise duty should be continued in the GST regime in order to avoid a steep rise in capital expenditure and, in turn, the cost of energy. The services rendered to or by or for the development of RE in India should be placed under the negative list.

CSR

The requirement of Corporate Social Responsibility was given statutory recognition by the Companies Act, 2013 and the Rules that are being prescribed there under.

Open Access (OA)

OA is unrestricted use or distribution or transmission network by any person. A person availing OA can procure power from any source other than the local distribution company.

Captive Power

A captive power plant is such a plant, at least 51%

electricity generated from which is consumed by the owner whose ownership (or stake) in the generating station is 26% or more.

Cogeneration

Cogeneration is a process of producing electricity from the residual/waste heat of an industrial system.

State Nodal Agency

State Nodal Agencies SNAs are entities under the State Governments which have been established to ensure development of energy in the state and carry out such other functions as specified by regulatory commissions.

Budget for the Ministry of New and Renewable Energy

- The budget allocation for MNRE must be increased gradually from 0.5% in 2014/15 to 1% in 2016/17, as recommended by the Estimates Committee. Funds at the central level must be allocated on the basis of the capacity addition targets set by MNRE to ensure that adequate funds are available for the purpose. During the 11th FYP, MNRE had requested Rs 104.6 Bn, was allocated only Rs 40.68 Bn—and could use only Rs 37.98 Bn. Proper measures for using the Rs 191.13 Bn allocated for the 12th FYP should be taken.

Long Term

Renewable Energy Act

RE sources encompass a wide variety of energy sources and can be utilised in a number of ways in addition to generation of electricity. Since, the scope of the EA, 2003 is limited to electricity only, it is not well placed to ensure all round development of RE. Therefore, the RE Act should be enacted to make provisions for the following.

- (i) Off-grid applications such as solar heating and cooling
- (ii) RE in transport, heating and cooling, etc.
- (iii) Promotion of bio-energy and bio-fuels
- (iv) Off-grid generation and rural electrification through renewable sources
- (v) Standards for equipment and systems
- (vi) Domestic equipment manufacturing
- (vii) RE resource assessment and system planning
- (viii) Grid connectivity and transmission planning
- (ix) A National Renewable Energy Policy
- (x) New and innovative technologies and making them cost-competitive over time

The Act should be administered by MNRE. Further, a National RE Policy should be drafted by MNRE to replace the National Policy on Electricity from RE Sources under EA 2003 which has been recommended above.

MNRE Budget

- The Estimates Committee, in its report presented to the Lok Sabha on 28 December 2011, recommended that MNRE's budget be increased to 1% of the total union budget.
- For the past four years (including the current year), MNRE's budget has only been 0.26%–0.27% of the union budget.

- MNRE reduced its target under JNNSM Phase 1 for off-grid projects in 2012/13 due to unavailability of funds.
- MNRE's budget does not reflect its capacity addition targets neither does it reflect the funding requirements of various schemes undertaken by the ministry.



Climate Parliament
Legislators working worldwide to combat climate change

London Office

Climate Parliament
Kemp House
152–160 City Road
London,
EC1V 2NX
United Kingdom

Email: info@climateparl.net
Telephone: +44 (0) 208 123 10 12

Contact

Mr Mukul Sharma +91 98108 01919
Ms Sumedha Basu +91 98117 08709



Idam

Idam Infrastructure Advisory Private Limited

Mumbai (Regd office)

801 Crystal Plaza
158 CST Road
Kalina, Santacruz (E)
Mumbai – 400 098
Tel: +91 (0) 22 4057 0200

Delhi

704 Bhikaji Cama Bhawan
Bhikaji Cama Place
New Delhi – 110 066
Tel: +91 (0) 11 2616 5220
Email: contact@idaminfra.com

Contact

Balawant Joshi +(91) 98214 21630
Ajit Pandit +(91) 98211 08222