Electricity Act 2003

vs

Additionality for grid connected renewable energy (RE) projects

The much awaited Electricity Act 2003 was notified on 10 June 2003. This new Act has several enabling provisions, with a view to promote accelerated development of non-conventional energy-based power generation. They are summarized below.

1. General

- The Government of India (GoI) shall, from time to time, prepare the National Electricity Policy and Tariff Policy, *in consultation with the State Governments* for developing the power system based on optimal utilisation of resources such as coal, natural gas, nuclear, hydro, and renewable sources of energy *[Section 3(1)]*.
- The Central Electricity Authority (CEA) shall prepare a National Electricity Plan in accordance with the National Electricity Policy and notify such Plan every 5 years *[Section 3 (4)]*.
- GoI shall, *after consultation with the State Governments*, prepare a national policy, permitting stand-alone systems (including those based on renewable sources of energy) for rural areas *[Section 4]*.
- GoI shall also formulate a national policy, *in consultation with the State Governments* and *the State Commissions (SERCs),* for rural electrification and for bulk purchase of power and management of local distribution in rural areas through Panchayti Raj Institutions, co-operative societies, and NGOs *[Section 5]* .

2. Generation

- Any generating company may establish, operate, and maintain a generating station, without obtaining a licence under this Act, provided it complies with the technical standards regarding connectivity with the grid *[Section 7]*.
- A person may construct, operate, and maintain a captive generating plant and dedicated transmission lines .Such persons shall have right to open access to the transmission facilities, for carrying electricity from the captive plant to the destination of their own use. *[Section 9 (1&2)]*.

3. Distribution and transmission of electricity

- The State Electricity Regulatory Commission (SERC) shall introduce open access in such phases and subject to such conditions (including the cross subsidies and other operational constraints) as may be specified within one year of the appointed date by it. *[Section 42 (1 & 2)]*

  – SERC shall specify extent of open access in successive phases
  – SERC shall determine the wheeling charges
  – SERC shall decide the surcharge *in addition* to the wheeling charges to meet current level of cross-subsidy (e.g. the industrial consumer cross-subsidizes the domestic ones)
  – SERC shall specify the manner in which such surcharge and cross-subsidies is progressively reduced and eliminated

Such surcharge shall not be levied in case of electricity being carried from captive power plant to the destination of own use.

4. **Tariff**

- SERC shall be guided in specifying the terms and conditions for determination of tariff by the following *[Section 61]*:
  – Promotion of co-generation and generation of electricity from renewable sources of energy
  – The National Electricity Policy and tariff policy
  – The principles and methodologies specified by the Central Electricity Regulatory Commission (CERC)

5. *State Electricity Regulatory Commissions (SERC)*

- SERC shall discharge the following functions *[Section 86(1)]*:

  – Determine the tariff and wheeling charges of electricity; wholesale, bulk, or retail; within the State.
  – ***Promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person.***

- ***Specify, for purchase of electricity from such sources, a percentage of the total electricity consumption in the area, from cogeneration and renewable sources of energy.***

Implications on CDM ability of grid-connected RE projects

SERC mandate for promoting RE

SERCs have a mandate to promote cogeneration and renewables and hence a major role in mainstreaming renewable energy sector under this Act. Even prior to the EA 2003, most of the SERCs from the wind power potential states (Maharashtra, Karnataka, Rajasthan, Andhra Pradesh) were critically analysing and evaluating the techno-economics and operational features of the RE power projects. Especially MERC[1] and KERC[2] have carried out detailed financial evaluation of RE projects and have analysed all the relevant aspects of the current status and future growth of RE sector. Based on these evaluations and analysis they have arrived at a rationalized tariff for already-commissioned and new projects.

The CDM Executive Board (CDM EB) in their 11th meeting (16/17 October 2003) The requested the Meth Panel to develop recommendations on how the national and/or sectoral policies and circumstances should be taken into consideration when establishing baseline scenarios. CDM EB further mentioned that in doing this work, the Meth Panel shall bear in mind that taking into account relevant national and/or sectoral policies when establishing baseline scenarios is not to **create perverse incentives** which may impact the host country Parties in contributing to the ultimate objective of the Convention. Unfortunately till date the Meth Panel has not provided any concrete recommendations on this issue.

Further, in case of small scale CDM projects, one of the checks under the barrier testing tools is the **barrier due to prevailing practice**, viz., prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions.

Based on the above, it may be argued that the RE projects would be implemented in India anyway and hence not additional.

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[1] Maharashtra Electricity Regulatory Commission

[2] Karnataka Electricity Regulatory Commission

On the one hand rapidly developing countries such as India are guided by The World Bank, International Monetary Fund, Asian Development Bank, etc., to implement energy and environment (E&E) related reforms and on the other hand the climate change concerned community viz., UNFCCC applies brakes on the CDM ability of such projects. This anomaly needs to be urgently addressed by the UNFCCC adequately.

There may also be scenarios when RE power producers choose not to participate in the EA 2003 enacted scenario leading to Renewable Portfolio Standards (RPS). They may also choose CDM due to better revenue and still sell the power to any attractive third party. Under these circumstances SERCs are expected to watch such development keenly and play a dynamic role in balancing the situation.

Under these circumstances a valid question is being raised as to "why CDM cannot be considered as one of the tools to implement the E&E legislations in country and increase the level of compliance?"

Captive power benefits

Captive power generating companies need no licence for electricity generation and open access is also provided to them without any surcharge. Hence power projects installed for captive purposes may benefit to a greater extent besides sale of surplus power to any third party.

However the choice of power plant for captive generation depends on the company evaluating the options viz., diesel/furnace oil generator sets, gas power plants, coal/lignite fired plants etc., Reasonable wheeling charges to be decided by SERC will also be a key factor.

Should the captive power company decide to choose an RE-based power project in spite of high investment, considering CDM revenues as a mitigating tool, the CDM ability of such RE power projects seems to be high. A typical example is the wind power project being installed for captive use by industries in the state of Tamil Nadu despite diesel and furnace oil being cheap alternatives.

Third party sale (TPS)

Open access will result in third party sale, which has been argued as one of the major incentives for implementing wind power projects. However a major concern about open access is that it may not come into force immediately and the surcharge and wheeling

charges if decided at a higher range, will not benefit TPS-based RE power projects. *This risk may further improve the CDM ability of RE power projects.*

SERC and Renewables Portfolio Standard (RPS)

The impact/influence of this RPS may not be realized immediately. It has been observed that the EA 2003 has set no time limit/deadline for SERCs to specify this percentage. Further SERCs also need to acquaint themselves with all aspects of the RE sector before declaring the RPS. On the other hand, SERCs need to prioritize operationalising open access, debundling state utilities, approve annual tariff orders, etc. Hence the RPS may come into force after SERCs have adequately addressed/resolved the above- mentioned priority issues. At the same time, SERCs may also prefer to examine the impact of their current tariff order in the RE power sector on its annual growth before deciding the RPS. *This may provide adequate time for RE power projects register as CDM projects for realising benefits during the first commitment period.*

Competition, bidding etc.
Under the scenario of open access, delicensing and interstate trading are likely to result in more competition among the power producers and hence RE power may need to compete with them. EA 2003 also enables the SERC to fix the maximum ceiling for tariff to promote competition [*62 1(a)]* for retail sale of electricity in an area of more than one distributions licencee. EA 2003 further allows SERCs to adopt tariff arising out of transparent bidding process as per the Central Government's guidelines.

A segmented market for renewable energy power is likely in the open access enacted scenario. While the DISCOMs[3] purchase power as per the SERC fixed (preferential) tariff, captive and third party sale are the other renewable power markets.

The current trend of major power utilities entering the RE power sector may result in implementation of RE power projects on a larger scale of economy to produce power at a competitive rate. Should the DISCOMs decide to purchase power through competitive bidding process, these major power utilities may benefit to a greater extent than the other industrial promoters.

Under the third party sale, RE power price may fluctuate based on the (purchasers') needs and availability of RE power. Spot market for RE power is also possible.

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[3] Distribution Companies

Irrespective of the market segment, the role of CDM revenues can play a crucial role in facilitating investment decision by promoters either to participate in the competitive market or in reducing their cost of power generation.

Implications of Energy Conservation Act 2001 for CDM additionality: Preliminary assessment

The Government of India has enacted the Energy Conservation Act, 2001 that has come into force with effect from 1st March 2002. As per this Act, a statutory authority called the Bureau of Energy Efficiency (BEE) has been made responsible for recommending suitable energy standards and procedures for its measurements for different energy consuming products/systems, and also prescribe measures for energy conservation by industry.

The BEE has already identified a list of Energy Intensive Industries and other establishments specified as Designated Consumers under this Act as follows:

1. Aluminium
2. Fertilizers
3. Iron and steel
4. Cement
5. Pulp and paper
6. Chlor alkali
7. Sugar
8. Textile companies
9. Chemicals
11. Railways
12. Port Trust
13. Transport Section (industries & services)
14. Petrochemical, gas crackers, naphtha crackers and petroleum refineries
15. Thermal power stations, hydel power stations, electricity transmission and distribution companies
16. Commercial buildings or establishments.

Each designated consumer (using 10 MWe or equivalents thermal energy) has been advised to develop and implement its own well-defined Energy Management Policy and structure, broad guidelines for which have been issued. Each industry will appoint a qualified/accredited energy manager, and conduct regular energy audits through accredited energy auditors, and implement the recommendations given in the energy audit report subject to their being financially viable.

The Act also stipulates a penalty for non-implementation of the recommendations, after five years of the Act being in force. This is mainly to coax industry to implement viable suggestions.

The above work in each industry will generate small and big projects in electric power/ thermal energy conservation. Each project thus has the potential of carbon dioxide (GHG gas) emission reduction, and thus is a potential CDM project.

The Act is meant to promote energy conservation. Any individual project proposed for CDM may not be taken as “business-as-usual as per existing laws” as the Act does not

give energy standards for any industry; the BEE plans only development of energy utilization norms with the help of individual industry associations of designated consumers. These norms vary from plant to plant depending upon its raw material, location, capacity, age of the plant, etc. so these cannot be fixed as standards. Thus each energy conservation project for an industry is industry-specific, and cannot be treated as "business-as-usual" as per the Government of India's Energy Conservation Act.

Energy consumption standards cannot be set even for individual products. The BEE is planning, in future, to set norms for maximum and minimum energy consumption for domestic products, and give star (*) ratings to the depending upon actual energy consumption. This is again to encourage/promote energy conservation, and not introducing mandatory requirements. For industrial products, BEE plans to give energy consumption data for different products on a website, to facilitate industrial users to choose the right product with lowest energy consumption, depending upon its techno-economics. Thus no energy efficiency project can be treated as "business-as-usual" under the Energy Conservation Act 2001.

The Energy Management Policy Guidelines for Energy Intensive Industry, issued by the BEE in June 2003, only stipulates setting up an energy management structure with a clearly identified "energy manager", by each individual industry, defining its policy, setting targets for energy conservation, and monitoring it. Regarding targeting and monitoring, it further elaborates (page 10 of the report) as follows:

"In the absence of energy consumption norms for various energy intensive industries in the country, these industries adopted their own benchmarks. The common practice is to compare their performance with the best specific energy consumption figure in that particular sector/region or their own best figure achieved in the past. This effort may not be enough. The plants should also set their long-term goals, and year-wise targets may be framed to achieve these goals."

Technology additionality (new technology imported from abroad) for energy conservation cannot be justified, as the technology will be available indigenously.

Similarly, financial additionality cannot be proven, as the project will not become viable only with CDM funds. CDM will probably be a bonus for taking up the energy conservation project.