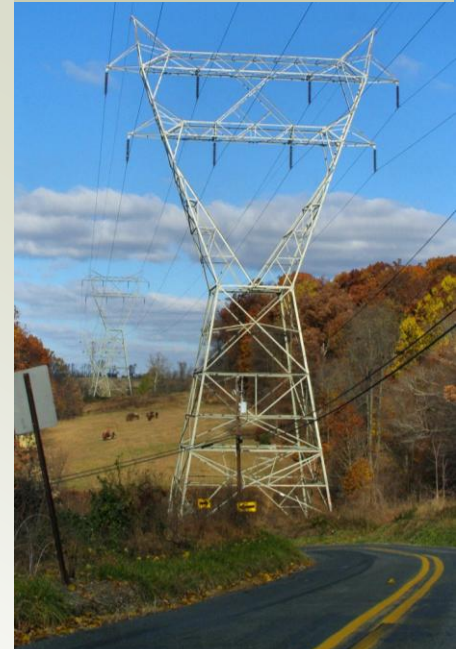


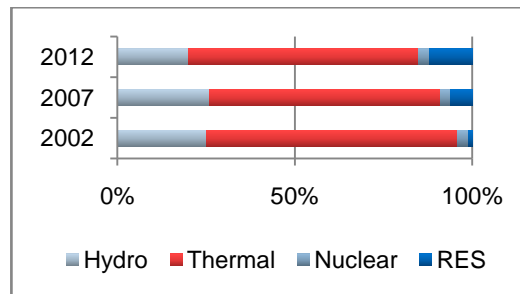
HORIZONS

26 September, 2012



Renewable Energy: Achievement and Bottlenecks

Over the years, RE has grown steadily to become an important part of the country's energy mix. Wind energy has achieved substantial size while solar energy is beginning to accelerate. For further growth however, major improvements in the country's distribution capabilities are required.



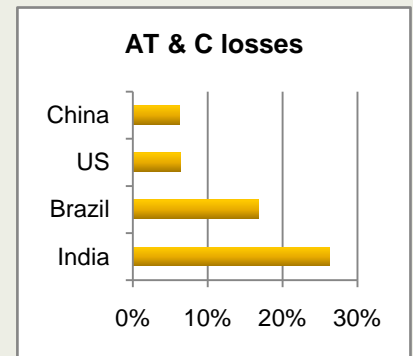
Source: Ministry of Power

Distribution: Unlocking India's potential

A number of steps have been taken to promote the electricity sector in India – EA 2003, unbundling of SEBs, policy and tariff support to RE sources etc. Generation capacity in the country has reached from 100 GW in 2001 to 200 GW in 2012. At the same time however, demand has grown faster than supply. This gap is expected to persist as further addition in thermal generation is limited by coal extraction capacity.

This highlights the role of RE in bridging the energy deficit. However, for RE to be able to deliver benefits, an efficient distribution system needs to be in place. The importance of distribution is often lost in the discussion about need to increase generation capacity. A 15% reduction in losses as envisaged by the Ministry of Power recently will mean effective addition of 30,000 MW of capacity - more than half the capacity addition of 53 GW in the 11th five year plan.

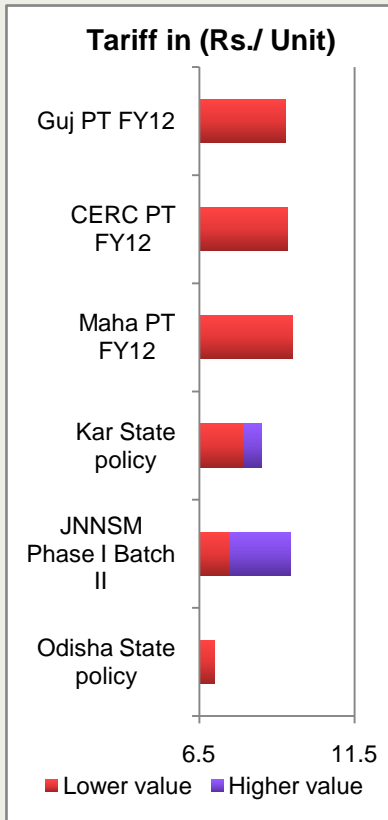
The C in AT&C



Source: World Development Indicators database

While AT&C losses in developed countries are small, they mainly comprise of technical losses. In developed countries commercial losses are practically non-existent. In India however, lack of metering, payment default and theft contribute to “commercial losses”, usually clubbed with T&D losses.

Solar Tariffs in India



Source: SERC Tariff orders, News articles

Recently concluded bidding process for solar power in various States as well as under JNNSM resulted in surprisingly low tariffs.

However, investors have opted for projects under these policies due to lower risk of default from distribution companies. This is because investors have taken into account risk of payment default under other commercial mechanisms.

The REC mechanism however, is providing a major boost to solar energy especially through the captive route.



Distribution: Backbone of commercial models

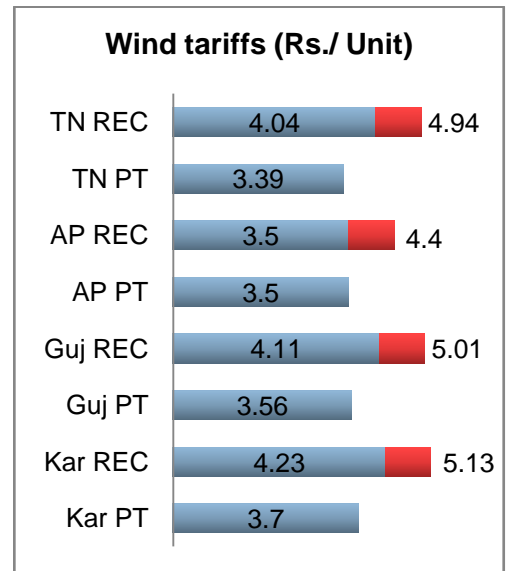
The REC Mechanism introduced last year provided RE generators a significant alternative to selling to cash strapped State Utilities. The non-solar REC market however has been muted of late. While generators have enthusiastically opted for this mechanism, the corresponding demand is yet to reach expected levels. This is due to slow implementation of RPO mechanism of which distribution companies are key constituents.

One of the important reasons for poor financial condition of Utilities is delayed tariff hikes. Actual cost of power taking into account increased fuel prices is not passed to consumers to avoid tariff shocks.

Discoms in developed countries have higher share of infirm renewable energy in their energy mix. In India, discoms are unable to manage the grid with increasing share of renewable energy injected into the grid. Financial sustainability is a prerequisite for discoms to implement technological developments.

Bailout, not Reform

Regulators aim to transition to a process of competitive bidding for deciding the renewable energy tariff in the States. To achieve this, a competitive distribution sector able to provide open access is important. The Government has found a temporary solution to the problems of distribution companies by reducing the debt servicing burden on the discoms. In the long run however, such financial engineering will have limited impact on the sector. A calibrated plan of increase in tariffs is required to ensure viability as well as higher efficiency.



Source: SERC orders, Lower REC price taken at Rs. 1.5/ unit and higher REC price taken at Rs. 2.4/ unit (Average of 1.5 & 3.3)

REC Market in September 2012

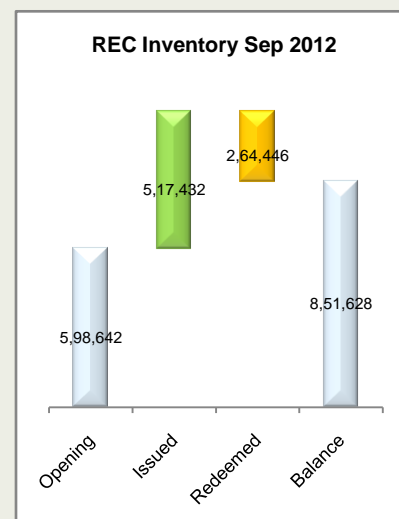


REC Trade Sep 2012		Buy Bids	Sell Bids	Volume Traded	Clearing Price Rs. per REC
Non-Solar	IEX	239,364	664,641	239,364	1,500
	PXIL	25,082	46,530	25,082	1,500
Solar	IEX	1,317	1,094	735	12,500
	PXIL	525	527	425	12,900

Non-Solar prices wait for demand to catch up

The REC market in September 2012 recorded the highest volume of REC issuance ever resulting in the highest closing balance in the REC trade, Demand however remained subdued. Price realization remained at floor level of Rs. 1,500 with all the buy bids cleared at both IEX and PXIL. Even if we consider that only 20% of the RPO compliance is done through RECs, annual demand of RECs for FY 2012-13 should be more than 1 Crore. This demand is not yet reflected in the REC market as only less than 12 lakh RECs have been traded till September. This shows that while regulators have provided support to RE through RPO, more effort on enforcement is required.

REC Inventory

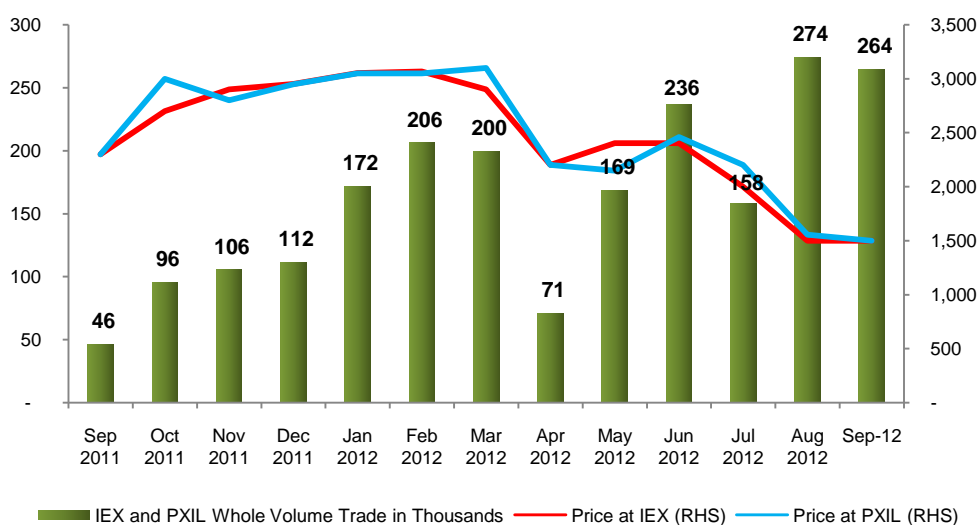


Source: REC Registry

Solar RECs cross 1000 milestone

While non-solar RECs market has been muted, solar RECs have been picking up steadily for the last few trading sessions.

Solar REC witnessed a surge in trading this month. With 1,160 certificates traded, the volume this month more than tripled volume of last trading session. The trade also saw a healthy price realization at Rs. 12,500 per certificate at IEX. Value of trade more than tripled and exceeded Rs.1.4 Crores in this trading session.



Source: IEX and PXIL

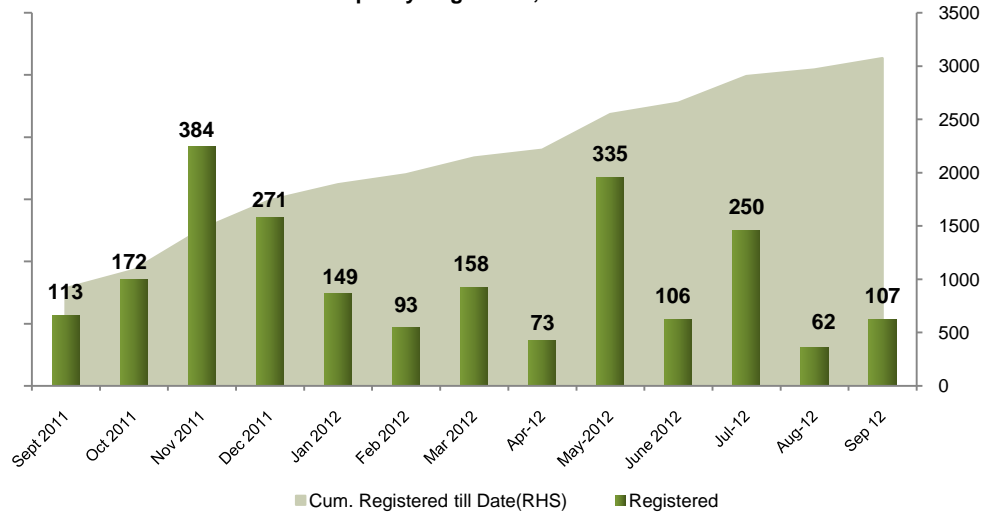
State-wise Registered Capacity, April 2012 to date

State	MW
Tamil Nadu	329
Maharashtra	253
Gujarat	135
Karnataka	126
Rajasthan	27
Madhya Pradesh	22
Uttar Pradesh	20
Chhattisgarh	12
Odisha	5
Himachal Pradesh	4
Punjab	0
Uttarakhand	0
Kerala	0
J&K	0
Haryana	0
Total	933

Source-wise Registered Capacity, April 2012 to date

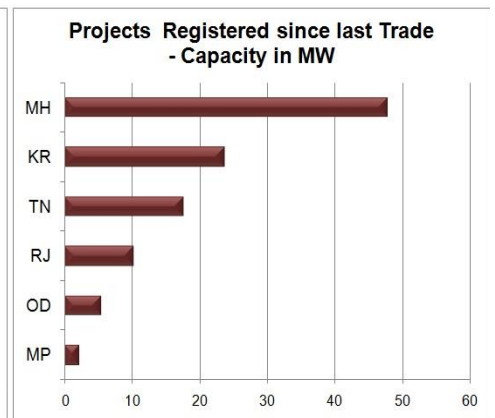
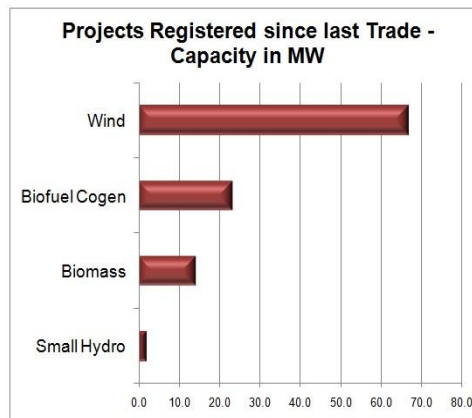
Source	MW
Wind	731
Biomass	97
Bio-fuel cogen	81
Solar PV	18
Small Hydro	6
Total	933

Capacity Registered, MW



Source: REC Registry

In total, 107 MW of capacity was registered in September. With this addition, the capacity registered in this financial year has touched 933 MW. Total trade value of solar and non-solar RECs exceeded Rs. 40 Crore in this trading session.



Source: REC Registry

agneya

Agneya is promoted by alumni of IIM Ahmedabad and IIM Bangalore. We provide services in the following areas –

Renewable Energy – advising clients on the best possible portfolio of renewable energy (wind, solar, bio) across tariff regimes, technology options, electricity sales structuring and availing incentives like REC and GBI.

Renewable Energy Regulations – advising clients on regulatory aspects of electricity market, options for realizing the maximum value from their energy assets and minimizing costs related to regulatory compliance including addressing RPO.

Carbon & Energy – measuring carbon footprint, current/future energy profiling, and setting up energy management systems to assess risks and opportunities related to energy security and climate change.

Sustainability – building robust long term foundations for business i.e. managing economic, environmental and social aspects of business. These include establishing sustainability management framework and reporting as per GRI guidelines.

For further information on Renewable Energy Certificates or other services, please contact us at –

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