



## INTRODUCTION AND OPENING REMARKS

CEEW and NRDC, with support from the Shakti Sustainable Energy Foundation, organised a roundtable on solar finance in India on 31<sup>st</sup> October 2013. The roundtable is one in a series of discussions to understand means of increasing renewable energy financing in India – particularly for wind and solar. We are organizing roundtables with experts and industry players across the solar market to identify and discuss the financial instruments available to address the barriers encountered by stakeholders within India's solar. This first roundtable focussed on the financing mechanisms for Phase II of the National Solar Mission, where 750 megawatts of solar power plants would be allotted under the first batch through a Viability Gap Funding mechanism.. CEEW and NRDC will then work with the Planning Commission, the Ministry of New and Renewable Energy, and other decision-makers to strengthen financing and supporting policies that enable the renewable energy market to reach its full potential across India.

In order to spur greater solar adoption across the country, CEEW and NRDC have conducted extensive analysis and developed recommendations for the Mission. We laid out these recommendations in our two reports, focusing on grid-connected photovoltaic (PV) in *Laying the Foundation for a Bright Future* (April 2012), and concentrated solar thermal technologies in *Concentrated Solar Power: Heating Up India's Solar Thermal Market* (October 2012).

The discussion opened with **Dr. Arunabha Ghosh, CEO, Council on Energy Environment and Water** providing an introduction to the joint CEEW-NRDC project followed by comments from **Ms. Anjali Jaiswal, Director - India Initiative, NRDC**. Ms Jaiswal welcomed the participants and gave a brief description of the previous work of CEEW-NRDC project on analysing the National Solar Mission, including the need for a robust financing ecosystem. A discussion on financing for Phase II projects is required to help deploy solar effectively at scale.

Finally, **Mr. Deepak Gupta, Senior Program Manager, Shakti Sustainable Energy Foundation** provided a brief introduction to the Shakti Foundation and reiterated the

importance of discussions on financing options for solar energy given the capital intensive nature of the industry.

## **PERSPECTIVE: NATIONAL SOLAR MISSION PHASE II GUIDELINES AND SOLAR ENERGY FINANCING**

**Mr. Bhaskar Deol, India Representative NRDC** gave an overview of the guidelines of the National Solar Mission and highlighted the various financing mechanisms adopted by both central and state governments to promote solar projects in India.

Dr. Ghosh noted that the delay in announcing the Phase II guidelines have created an air of negativity around National Solar Mission. However, despite the delay there has also been considerable interest among developers who have been anticipating the announcement of the guidelines. He started the discussion by asking the participants about their views on the revised Phase II guidelines and what they thought was better or worse when compared to the first Phase of the mission. Discussions revolved around:

- Effectiveness of Viability Gap Funding(VGF)
- The changing roles of NRVN and SECI
- Engaging the finance community
- Ways and means to boost the sector

### **Effectiveness of Viability Gap Funding**

Participants had mixed views on the effectiveness of VGF for the National Solar Mission. It was suggested that government may have moved to VGF to provide one time financial support instead of spreading support over a 25 year period (as in the Phase I FiT). One participant showed concern that the VGF was a regressive measure, encouraging developers at the lower end of the quality spectrum. This was countered by others stating that since the minimum capacity of each plant is 10MW; only serious developers would bid for projects.

Some participants suggested that VGF supports capacity addition instead of efficiency and output of a power plant. This view was countered by some participants by stating that VGF is only a small support and developers will have to generate power to get their investment back with attractive returns.

One participant suggested that to incentivise generation, MNRE may think on the lines of Generation based incentive at a later stage.

### **Changing Roles: NRVN and Solar Energy Corporation of India**

NRVN was responsible for the purchasing the power from solar developers in Phase I. SECI, in close association with NRVN, has been given the responsibility to implement Phase II of the National Solar Mission through Viability Gap Funding Mechanism.

Some developers expressed concerns if SECI would be the right organisation for the success of Phase II, especially given NRVN's trading expertise derived from thermal power trading. It was also suggested that NRVN has a large balance sheet compared to SECI which gives investors the confidence to invest and bid for projects. However few developers were of the view that both SECI and NRVN are government organisations which are responsible only for trading. Hence it should not be a matter of concern if the responsible organisation is changed, as counterparty risk will remain more or less the same.

Some stakeholders expressed continued concerns about the ability of distribution companies make regular payments. It has been observed that often DISCOMS have delayed payments, in some cases for more than a year. This can have an adverse impact on project ROI. But it was suggested that since the price per unit in the second Phase was low (INR 5.45/unit) DISCOMS would be comfortable to pay the developers. Also, it was highlighted soon it would be the cheapest power available, which will then make it attractive for the distribution companies.

### **Engaging the Finance Community**

Solar energy projects are capital intensive and the cost of capital as repayment is very high for such projects. To reduce the burden of the cost of capital, developers sought low interest loans from foreign sources in Phase I. This was also considered as one of the prime reasons for the success of the initial Phase. Low finance options are not available in India and developers may have to borrow at very high rates which are fluctuating in nature. Loans with fluctuating characteristics can have a significant impact on projects since the output from solar plants are fixed.

Participants noted that Indian bankers have become more comfortable with solar power projects since many plants are now fully operational in India. They are more knowledgeable and have gained experience from the Phase I. Bankers are now expected to fund projects on experience and capability of developers rather than their balance sheet and parent company, which was observed in Phase I.

It was suggested that in Phase I, banks had often refused to fund projects citing that annual sectoral lending limits had been reached. This was perhaps a red herring and there is more to be done to fully understand sector lending limits and what projects banks are lending to within the sectors. Some participants suggested that banks had prioritised funding conventional power plants when compared to solar due to higher risk perception. However, after successful implementation of Phase I, banks are now more comfortable to fund solar projects, especially as there are little of no NPAs when compared to other power projects.

It is also estimated that developers would reach out to bankers in the first quarter of 2014-2015 when the new cycle of lending starts. Hence it may be easier to convince the bankers to fund projects.

Foreign investors provided low cost financing options for solar project developers in the Phase I, but with currency depreciation and lower GDP predictions coupled with negativity is discouraging them from investing in Phase II.

It was also suggested that currency depreciation and lower GDP predictions with negativity in India is discouraging foreign investors to invest in India.

### **Additional ways and means to boost the sector**

Participants suggested that alternate ways of funding must be explored to fund solar energy projects in India. Investors are more confident towards funding distressed assets. For instance, renewable energy seemed attractive to infrastructure funds earlier but now these funds are focussing on other infrastructure projects such as roads.

A participant suggested that states must take a cue from Gujarat government which floated bonds for the Narmada Sagar Dam and issue bonds for renewable energy projects. Such initiatives can help bridge the gap for financing renewable energy projects in India. Other avenues such as insurance and pension funds may be targeted to finance solar energy projects in India.

## **INTERNATIONAL FINANCING MECHANISMS**

Discussion was initiated with a brief presentation by Ms Jaiswal highlighting exemplary policy and financing instruments that helped scale solar energy projects in countries of Brazil, United States, Germany, China and Norway. There was a general consensus amongst participants on the role of RPOs being integral to sustained growth of solar in India.

### **Renewable Purchase Obligation**

Although stakeholders acknowledged that RPOs might not be enough to drive down cost of capital, there was a general consensus that successful enforcement of RPO is vital for future of not just solar technology but the entire renewable energy spectrum. Poor financial health of discoms and reluctance of banks to extend recourse financing to ailing DISCOMS were cited as reasons hampering RPOs. Discussion revealed that in a study conducted by the Ministry of Power (MOP), only 5 discoms were rated A+ and they were all in Gujarat. Several participants were of the opinion that in order to make RPO a success in India as in United States (California in particular) and other European countries (the EU penalises countries for failing to enforce RPOs), the Indian power sector must undergo several reforms such the enshrinement of RPOs in the Electricity Act for stricter enforcement by the state utilities.

### **Net metering**

Participants considered that net metering must be included in the Act as it can prove to be an important market making mechanism. One of the participants commented that net metering could be a viable solution for encouraging schools to adopt solar energy. It was noted that schools are currently weary of deploying solar rooftops as there is no load in the afternoon and on weekends.

### **Tax free bonds**

Participants emphasized that the cost of capital is market driven and not linked to the solar sector. Referring to green bonds deployed to fund RE projects in United States, participants endorsed introducing solar energy specific tax free bonds that can be utilized to bring down the cost of financing solar projects in India. Participants suggested that SECI be allowed to raise funds from market through such bonds which can then directly be funnelled to solar power projects. Participants voiced concerns on how a solar specific fund ought to be operated in a transparent and efficient manner to prevent problems of underutilization that currently ails the national clean energy fund (NCEF).

### **Other comments**

Participants appreciated the fact that banks and IREDA are increasingly focusing on project financing and stressed that they should continue to do so in the future.

Participants also felt the need to shift focus from increasing the number of installations to bolstering power generation and grid stability. Drawing attention towards mechanisms like the renewable regulatory fund (RRF), participants called for formulating similar mechanisms/set of incentives to improve grid stability and boost generation.

Aside from financing instruments, participants briefly discussed ways to expand solar manufacturing base in India. Participants opined that market expansion would result in boosting manufacturing capacity in the country. There were concerns on how government duties levied on Indian solar manufacturers plays a huge part in driving up the costs (for panels), making them less attractive when compared to Chinese counterparts. It was revealed that import duties levied by the government on solar industry results in Indian modules being INR 5-6/watt more expensive than Chinese modules. Pointing at the existence of multiple targets for renewables in the country, participants felt that there was a need to frame a national target for renewables that would help build investors' confidence.

### **CLOSING REMARKS**

Summary points
Participants summed up the discussion by highlighting their primary concerns around solar PV financing in India: <ul style="list-style-type: none"><li>• continued concerns around counterparty risk;</li><li>• banks' exposure to solar being a red herring;</li><li>• importance of foreign funding; and</li><li>• need for policymakers to integrate RPO and net metering in the Electricity Act.</li></ul>

The discussion was concluded by Dr Ghosh reinforcing that CEEW and NRDC explore weaving in of RPOs and net metering into dialogue around the Electricity Act. Ms Anjali outlined project's next steps that would include conducting an additional discussion early next year.

## **PARTICIPANTS**

<b>Organisation</b>	<b>Participant</b>
Bridge to India	Vinay Rustagi
First Solar Power India	Mr.Subrat Das
Independent Consultant	Nehmat Kaur
L&T Constructions	Dheeraj Malani
Maharishi Solar	AP Srivastava
Renew Power	Shashanka Shekhar Panda
Shakti Foundation	Deepak Gupta
Shakti Foundation	Disha Agarwal
Solar Energy Society of India	Jagat S Jawa
Sunborne Energy Services	James V Abraham
SunEdison	Ankit Mehra
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SunSource Energy	Kusharga Nandan
Waaree Energies Limited	Biswajit Roy
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