

How to support solar power projects

The positives of the existing policies to encourage solar power should not be jettisoned while moving to the next phase

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India is on the cusp of a solar energy revolution. Jawaharlal Nehru National Solar Mission (JNNSM) kick started development of large, MW scale, solar plants. In combination with the Gujarat solar power program, JNNSM has resulted in an installed capacity of 1047 MW as on 31st Nov 2012. What was crucial for the success of the phase-I (2010-13) of the JNNSM was a realistic price discovery through reverse competitive bidding on energy charges (Rs/kWh) and bundling of solar power with existing low cost NTPC power, as an incentive for utilities and an assured buyer in the form of NTPC Vidyut Vyapar Nigam Limited (NVVN). The figure below shows the dramatic reduction in solar tariffs since the launch of JNNSM from around Rs. 18/kWh to around Rs. 7/kWh.

With phase-I coming to an end, the Ministry of New and Renewable Energy (MNRE) has recently (4th Dec) published a draft policy document outlining the way forward for phase-II (2013-17) of the JNNSM. While on the whole it lays down a good framework for the promotion of solar power in India, certain policy proposals, especially for large MW scale solar power could make it a case of 'two steps forward one step back'. This article critically looks at some of these important policy options and proposes some alternatives.

Viability Gap Funding (VGF): MNRE has proposed to promote large MW-scale solar power through VGF. Projects requiring minimum VGF (in Rs. Cr./MW) to supply electricity to utilities at a pre-determined tariff (say Rs 5-6/kWh) will be selected through competitive bidding. This is in stark deviation from energy (kWh) based bidding undertaken for solar as well as conventional generation. As the draft itself notes, the biggest concern with capital grants under VGF is severing the link with long term project performance. It further states that there would be *"no penalty on lower generation or unsatisfactory performance on selected projects."* Compare this with its own key learning from phase-I of the JNNSM, *"Generation of PV projects so far has been in accordance with estimates, and higher in many cases."* This has been solely possible as project revenues are completely linked to electricity generation thereby inter-locking profitability with long term project performance. Capital grants would only lead to a race to minimize CapEx at the expense of performance. Hence it is imperative to continue with reverse competitive bidding for solar power on energy basis (Rs/kWh) as was done in phase-I and is also routinely done by several states (e.g. Karnataka and Odisha). If the National Clean Energy Fund (NCEF),

through which VGF would be supported does not allow such long term payments, its rules need to be changed rather than changing well established norms of energy generation based payments.

Domestic Content Requirement (DCR): This is another serious policy and politically vexed issue and needs to be studied carefully. On one hand is the possibility of low cost solar power (on the basis of cheaper imported modules with access to low cost debt) leading to higher deployment and thereby increased jobs in project construction and long term O&M. On the other hand is somewhat higher tariff but with incentives and protection of the domestic module and cell manufacturing industry. While the JNNSM has an important objective of promoting the solar manufacturing industry in India, it remains an open question whether a DCR requirement would be an adequate response in the current global dynamics of the solar PV sector. The existing solar manufacturing set up in the country has a number of inherent disadvantages (continued dependence on imported wafers/poly-silicon, older non-integrated set-ups at higher costs and at much smaller scales than present industry standards) in comparison to new industry set-ups. These factors are leading to quite sub-optimal conditions in which Indian PV manufacturing (limited to modules and cells) is taking place. Hence it would be very difficult to compete on price with PV production from newer industry set-ups and more so if these set-ups were highly incentivised (as has been claimed of the Chinese PV industry) and while the global glut on module supply remains. Therefore just a DCR would be an inadequate response for incentivizing setting up of world class PV manufacturing in India. A far more long term and integrated view (keeping in mind global sectoral dynamics) needs to be evolved and serious industry players backed by latest technology and R&D with a focus on innovation need to be incentivized (See HBL Nov 28, 2012; Don't support solar manufacturers now). This could be done through facilitating setting up of an eco-system of solar manufacturing industry. Such a strategy needs to be evolved in synergy with Department of Science and Technology and the national industrial and manufacturing policies. New incentives which would allow setting up of large scale integrated PV plants in India need to be put in place.

Rooftop systems: With regard to promoting grid connected rooftop solar PV in urban India, a national policy on net metering to encourage in-situ generation, primarily for self consumption should be brought forth. Consumer tariffs of commercial and high-end residential consumers in many states are already high enough (or will soon be) to incentivize them to shift to solar. Hence the option of in-situ generation for self-consumption, which is more socially equitable and financially viable in comparison to subsidizing such systems through budgetary capital grants needs to be promoted.

Solar Parks: MNRE's initiative on supporting solar parks is a welcome one with the added benefit of better transmission planning and grid management coupled with greater transparency in Case-II bidding. However aspects like long term land leasing (already practiced in Rajasthan) and profit sharing with land owners/community as is routinely practiced in Europe and USA would make this initiative more socially inclusive.

An integrated solar policy, that facilitates least cost procurement, emphasizes performance based incentives and develops effective eco-system for rooftop and other de-centralized solar applications can aid *'faster, more inclusive and sustainable growth'*, the guiding spirit of the 12th plan.