

Note on the National Solar Mission

Back ground:

The objective of the Jawaharlal Nehru National Solar Mission (JNNSM) under the brand 'Solar India' is to create conditions, through rapid scale-up of capacity and technological innovation to drive down costs towards grid parity and establish India as a global leader in solar energy. The Mission has set a target of 20,000 MW and stipulates implementation and achievement of the target in 3 phases (first phase up to 2012-13, second phase from 2013 to 2017 and third phase from 2017 to 2022) for various components including Utility grid solar power.

In order to facilitate grid connected solar power generation under the first phase, a mechanism of "bundling" relatively expensive solar power with power from the cheaper unallocated quota of the Government of India (Ministry of Power) out of the NTPC coal based stations and selling this "bundled" power to Distribution Utilities, at CERC determined prices, has been proposed by the Mission.

Consultative process:

A number of consultations with manufacturers- both domestic and foreign, system integrators, independent power producers, financial institutions, civil society and other stake holders has been held over the last 3 months. The draft guidelines were then finalized and were placed on the MNRE website for comments for 3 weeks. We received over 170 comments. The Ministry also held a very large consultative meeting in partnership with CII on 1.04.2010 and the comments received during the discussions have also been considered and suitably incorporated. However, since the interests of various stakeholders can be conflicting, the approach while finalizing the guidelines is to keep the stated objectives of the Mission in clear view.

Phase 1 :

The total aggregated capacity of the grid connected solar projects to be developed under bundling scheme in Phase-I of JNNSM shall be 1000 MW. The projects will be selected under this scheme in such a manner so as to provide for deployment of both Solar PV Technology Projects and Solar Thermal Technology projects in a ratio of 50:50, in MW terms. However, within these two broad technology groups, the selection of projects would be technology agnostic.

Batches within Phase 1

In order to prevent bunching of large capacities at one time and to avoid the difficulty that may arise in achieving financial closure by the large number of project capacities that may get selected together and given that this is a new area of financing for FIs in India, it is proposed that selection of projects be done for PV projects in a phased manner in two batches by allocating overall capacities over two financial years of Phase 1 i.e., 2010-2011 and 2011-2012. The total capacity of Solar PV projects to be selected in first batch i.e., in FY 2010-11 shall be limited to 150 MW. The Projects for remaining capacity for Solar PV Projects will be selected in second batch i.e., in FY 2011-12.

Considering the gestation period of Solar Thermal Projects, selection of projects for entire capacity of 500 MW less capacity of migrated projects shall be done in FY 2010-11.

Domestic Content

Earlier position

The Mission recognizes that indigenous manufacturing capacity for solar power equipment is vital if the goal of 20,000 MW of solar power is to be met by 2020 and therefore a criteria for ensuring domestic content for Phase I Projects has been introduced. The same shall be as under:

- a. *In case of Solar PV Technology– It is proposed that all deployment under the scheme should use a module manufactured in India and it is also proposed to mandate the use of the cell manufactured in India*
- b. *In case of Solar Thermal Technology – 30% of the total project cost should be utilized for domestic equipment.*

Modified position

For Solar PV Projects to be selected in first batch during FY 2010-11, it will be mandatory for Projects based on crystalline silicon technology to use the modules manufactured in India while there will be no mandatory domestic content requirement for Projects based on other technologies to be selected in first batch of Projects. For Solar PV Projects to be selected in second batch during FY 2011-12, it will be mandatory for all the Projects to use cells and modules manufactured in India.

This implies that there is now a window of opportunity for new PV technologies like thin film, Cadmium telluride (US company- First solar) and others, to participate in the Mission and also move towards an investment decision to set up manufacturing in India. At the same time it also allows time for module manufacturers in India to upgrade their capacities and negotiate with their cell suppliers (US company – Suniva) to bring in cell manufacturing in India.

The requirement for Solar thermal would be that 30% of the total project cost is utilised for domestic content. *The solar thermal developers see this as an easily implementable condition.*

Selection of Projects on Discount in Tariff

Given the huge interest in the Solar Mission, it is expected that even after the filter conditions of net worth and availability of grid for evacuation, the applicants which are shortlisted may propose to set up capacities more than what is on offer. The only transparent methodology

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which can then be adopted is a reverse auction. The Short-listed Projects would be asked to indicate the discount in Rs/kWh on CERC Approved Applicable Tariff . The Projects offering the maximum discount in Rs/kWh on the CERC Approved Applicable Tariff would be selected first and so on.

Although other methodologies were discussed but a grading / ranking process is fraught with subjectivity and therefore the above has been proposed as the methodology for selection. Further the above methodology will also enable price discovery through competitive processes. There is , of course, a chance that companies may under bid, but since there is a hefty bank guarantee (which will get forfeited , if the companies cannot achieve financial closure), it is expected that only serious players would participate.

Recent experience:

An American company – Azure power has set up the first private sector solar plant near Amritsar with OPIC funding. The modules which have been used are made in ET Solar, China.