

## CHAPTER – IX

# Ministry of New and Renewable Energy

### 9.1 Non-utilisation of Solar Thermal Power Plant

**Failure to develop a dedicated workforce that could ensure continuous operation of a solar thermal power plant and research facility resulted in non-utilisation of the facility created at a cost of ₹ 46.36 crore.**

Ministry of New and Renewable Energy (MNRE) sanctioned (September 2009) a Research and Development (R&D) project titled ‘Development of a Megawatt-scale Solar Thermal Power Testing, Simulation and Research Facility’ to Indian Institute of Technology, Bombay (IIT), at a cost of ₹ 41.17 crore. The project envisaged development of a national test facility at the National Institute of Solar Energy, Gurgaon<sup>51</sup> (NISE), that would enable testing of components and systems for solar thermal power generation. The project was expected to facilitate development of 1 MWe grid interactive solar thermal power plant. NISE was required to enter into a Power Purchase Agreement (PPA) with Dakshin Haryana Bijli Vitran Nigam (DHBVN) for sale of solar power generated. The project was sanctioned for a duration of five years i.e. up to September 2014. MNRE’s Policy Guidelines of Research & Development projects stipulates that project completion report would be presented to the respective appraisal committees for final acceptance.

Based on the request of the Principal Investigator (PI) citing (May 2012) increase in cost of plant, consumables and contingencies, the sanctioned cost of the project was revised (July 2012) to ₹ 48.12 crore. The grid interactive solar thermal plant was installed (May 2014) at NISE and was feeding power to the grid. As the plant needed to be operated on a continuous basis, IIT requested (June 2014) for extension of the project for 10 months to enable smooth transition from the IIT team to NISE. IIT also requested MNRE to initiate the required activities towards this transition. Accordingly, the sanctioned duration of the project was further extended (September 2014) upto March 2015. An amount of ₹ 46.72 crore had been released by MNRE during 2009-15 for the project.

The plant was formally handed over by IIT to NISE with effect from 7 March 2015 and had generated nine Mwh of electricity up to 31 August 2015. The plant was operated

<sup>51</sup> A unit of MNRE formerly known as Solar Energy Centre, that was converted into an autonomous institution in September 2013 and renamed as the National Institute of Solar Energy.

up to August 2015 by human resources employed on contract basis by NISE. Thereafter, the contract was not extended for want of funds. As a result, the plant stopped functioning from September 2015. As of February 2016, a total expenditure of ₹ 46.36 crore had been incurred on the project. IIT refunded (June 2016) the unspent balance (with interest) amounting to ₹ 37.10 lakh to MNRE.

The project completion report submitted by IIT was reviewed (June 2016) by the R&D Project Appraisal Committee (RDPAC) of MNRE. The committee expressed satisfaction with the progress and achievement of the project but observed that the plant was not functional and that it should be handed over to NISE in operational condition. The committee also suggested that PIs should present the performance of the plant over an extended period of time and give their recommendations to facilitate the design of future solar thermal power plants. The committee concluded that the project completion report could not be accepted till it was revised based on its observations and till the plant was formally handed over to NISE in proper running condition.

The observations of the Committee were communicated to IIT in July 2017. However, no further action was taken on the project and the plant remained non-functional.



**Grid interactive solar thermal power plant developed by IIT under the project**

After the matter was raised by Audit (April 2017), MNRE convened (August 2017) a meeting with participants from NISE and IIT wherein it was decided that that the plant could be run on trial basis by NISE.

Audit observed that Ministry did not take any action to develop a dedicated workforce needed to run the plant on a continuous basis though the National Advisory Council constituted for the project in its meeting held in May 2011 had discussed the need for a dedicated workforce for running the plant once it was commissioned. The plant was taken over from IIT by MNRE before getting the project performance appraised by the RDPAC and without ensuring availability of dedicated workforce for its operation. Since the project was not completed, PPA could not be entered by the NISE with DHBVN.

MNRE stated (November 2017) that it was doing midway correction with NISE to improve the efficiency of the plant and to develop a national training facility which is already developed under this project. MNRE added that NISE had deployed five engineers who were working in the plant.

Audit noted that the Ministry took more than one year to take up the matter with IIT and NISE to resolve the issues raised by the RDPAC. As a result, the grid interactive solar thermal plant and experimental facilities developed under the project remained unutilised. Failure to develop a dedicated workforce that could ensure continuous operation of the solar thermal power plant and research facility resulted in non-utilisation of the facility created at a cost of ₹ 46.36 crore. Further, no action could be initiated for sale of 1 MWe solar power planned to be generated under the project.

