



Rooftop Solar in Education Sector
Peer Group Consultation
Green Growth and Energy Transformation (Grow-GET)
22nd February, 2017, Kolkata

Report

1. Background and overview

CUTS International in collaboration with Friedrich-Ebert-Stiftung (FES) organised the peer group consultation meetto deliberate on the issues of *Solar for Education* as a part of the Green Growth and Energy Transformation (Grow GET) project in West Bengal on February 22, 2017at The Oberoi Grand, Kolkata.

This was in continuation to the *Second Seed Community Meeting*held on November 8, 2016 in Kolkata which identified *Solar for Education* as a catalytic project idea to be taken up under the Grow Get project. The same was identified among three other projects viz. Green Irrigation, Green Building and Eco tourism. The potential scalability of the idea of Solar for Education was extensively discussed at the Second Seed Community meeting. Further, to identify the potential locations where the said project could be implemented, scoping visits were conducted in the two districts of West Bengal i.e. South 24 Parganas and Jalpaiguribased on suggestions provided by the seed community members. The visits entailed consultations with relevant stakeholders such as the representatives of educational institutions, utility service providers, Government Officials etc.

Thus, the purpose of the Peer Group Consultation was also to put forward findings from the scoping visits before the participants and seek their inputs on ways to better utilise the opportunities and address the key challenges to facilitate greater uptake of the agenda of Solar for Education in West Bengal.The participants included the Seed Community members, representatives from various education institutions, project developers of solar rooftops, media, subject experts etc. also participated in the consultation.

2. A Brief Snapshot of Proceedings

PrithvirajNath, Associate Directors, CUTS International, delivered the welcome address and said that the meeting aims to share the major findings from the Scoping visit and deliberate and find solutions to some of the concerns raised by the education institutions during the scoping visit. Abhishek Kumar, Associate Directors, CUTS International, mentioned that the project would aim at identifying the factors that can facilitate or impede greater uptake of the installation of grid connected rooftop solar for the education institutions. This was followed by special remarks by Swami Suparnananda Maharaj, Honourable Secretary, Ramakrishna Mission Institute of Culture; Sibnath Maity, Chief Scientist, CSIR-CMERI, Durgapur; Hiranmoy Saha, Professor and Course Coordinator - Center of Excellence in Green Energy and Sensor Systems, Indian Institute of Engineering Science and Technology (IEST), Shibpur; Deb A Mukherjee, Chairperson, Energy & Environment Committee, The Bengal Chamber of Commerce & Industry; Avijit Ghosh, Principal Technical Officer, Central Glass & Ceramic Research Institute; Shweta Maheshwari, Head of Communications, ONergy Solar; Mr. Arup Saha, General Manager, Projects & Engineering, Vikram Solar Private Limited; and B.K. Chaudhuri, Professor & Head of the Department, MBA-PS, IISWBM were among the key speakers at the consultation.

3. Prospects, Challenges and Solutions to Solar for Education as discussed by the speakers and participants

3.1. Prospects for solar rooftop

Availability of land for setting up large scale solar generation projects is one of the biggest challenges in a state like West Bengal which still predominantly depends on agriculture as their important source of livelihood. Even for urban areas availability of a 500 to 550 square feet of shadow free space (required to set up a 5 KW system), is an issue, given the growing pace of urbanisation. To this end, solar rooftops present a viable alternative.

Adoption of Grid Connected Rooftop Solar Photo Voltaic (GRSPV) among educational was considered important owing to three reasons – *firstly*, it would lower energy bills of the educational institutions; *secondly*, given the poor quality of service, especially in the rural areas, GRSPV can provide a stable source of electricity during daytime; and *lastly*, it would be an effective strategy to spread awareness about clean and environment friendly energy amongst the students. It was underlined that The Government of India and the Government of West Bengal are working towards popularizing grid connected rooftop solar system. The Government of West Bengal has

taken the initiative to set up rooftop grid connected solar PV power plants in more than 1,000 Government schools in West Bengal.

3.2. Concerns/Challenges regarding solar rooftop solutions

One of the major bottleneck towards greater adoption of GRSPV among educational institutions is their lack of awareness on the following issues:

- Technology;
- Processes involved in getting projects sanctioned;
- Processes involved in getting subsidy;
- Cost of Installation (viz. conversion from Single Phase to Three Phase system, hiring manpower for regular dusting of the solar panels etc.);
- How the institutions will save on their cost of electricity in monetary terms from installing GRSPV;
- Various sources of finance; and
- Available business models from which the educational institutions can benefit after installation of GRSPV.

In addition, there are also certain structural constraints (viz. leakage of water from roof, availability of shadow free space etc.) that needs to be considered before installation of GRSPV. The poor quality of after sales service is another major concern for the educational institutions.

3.3. Solutions addressing the concerns at grassroot level

On the technical front, installation of solar tree was proposed to be a viable alternative that can effectively address the issue of both space as well as structural constraints. This is because in case an educational institution finds it difficult to install solar panels on their rooftop, they can opt for installation of solar tree beside their building. A 5 kW solar tree typically requires 4 square feet of space. Since the solar trees come with inbuilt sprinklers, it can also address the issue of cleaning the panels on a regular basis.

Further, it was proposed that the education institutions interested in installing rooftop solar panels can use trackers that will give 30 per cent greater output compared to those without trackers.

On the awareness front, it was suggested that there is a need to adopt a programmatic approach and reachout to as many educational institutions as possible and make them aware about the benefits and processes involved in installation of GRSPV. In this

regard, it was mentioned that the institutions need to chalk out comprehensive Annual Maintenance Contracts (AMC) with the solar project developers that will help in eliminating concerns pertaining to after sale service.

4. Further strategy of CUTS International

Based on the inputs received from the Peer Group Meeting and from secondary as well as primary research CUTS International will come out with a project design on solar for education sector in the state of West Bengal. The design will highlight amongst others the following:

- Expected scale of implementation
- Local job potentials
- Policy gaps and enabling policies
- Level of awareness amongst stakeholders
- Sustainable business models
- Suitable financing mechanisms

Pursuant to the above the following four forums will be created:

- **Forum of Grassroots:** The purpose of this forum is to activate the project in identified pilot location. Accordingly, CUTS will gather all relevant stakeholders and sensitise them to the project potential, plans.
- **Forum for finance and jobs:** CUTS will create a dialogue on finance and jobs. This forum will help in Donor sensitisation and donors connect. This will also involve all the relevant organisations like World Bank, UNDP, MPLAD, MLA LAD etc. This forum will also assess the potential of job creation by the adopting roof top solar solutions in the state and therefore will include state skill missions, private skill providers.
- **Forum for policy:** Dialogue with regulator, DISCOMs, education department, rural development department, power department, etc. to seek policy support and advocacy to fill the gaps in existing policies/ regulations
- **Forum for awareness:** This forum will facilitate reaching out to various CSOs, Teacher associations, School management committees, Media etc.

5. Drawing Strategic Conclusions

The following conclusions were arrived at during the peer group-meeting, Kolkata:

- Psychological blocks that “*solar is expensive*” need to be addressed through sensitisation of educational institutions;
- Behavioural change and continuity in management at educational institute is required;
- For popularising GRSPV there is a need to stress upon Narrative Development and identification of viable business models. It is essential that business models should be customised based on whether it is catering to the requirements of urban or rural areas;
- Need for generating awareness among educational institutions on the following issues:
 - How solar can supplement their energy need
 - How much investment is required to setup rooftop solar and what are the subsidies available from various sources
 - What will be their payback period
 - What is the process of installing solar rooftop
 - What are the available business models
 - What are the intangible benefits of installing rooftop solar

Annexure-1 List of Participants

Sr. No.	Name	Organisation
1.	Arup Saha	Vikram Solar Private Limited
2.	Avijit Ghosh	CSIR - Central glass and ceramic Research Institute
3.	Arabinda Ghosh	Jadavpur University
4.	Binoy K. Choudhury	Indian Institute of Social Welfare and Business Management
6.	Deb A. Mukherjee	Bengal Chamber of Commerce and Industries
	Hiranmoy Saha	Indian Institute of Engineering Science and Technology
7.	Swami Suparnananda Maharaj	Ramakrishna Mission Institute of Culture, Golpark
8.	Swami Chidrupananda Maharaj	Ramakrishna Mission Institute of Culture, Golpark
9.	Sumana Majumdar	Nischintapur R.D. High School
10.	Snehamoy Mondol	Ramakrishna LokaSeva Kendra
11.	Satrajit Sanyal	The Bengal Chamber of Commerce and Industry
12.	Shakti Prasad Mitra	Ramakrishna Mission Institute of Culture, Golpark
13.	Shweta Maheshwari Jaju	Onergy Solar
14.	Sibnath Maity	CSIR- Central Mechanical Engineering Research Institute
15.	Sanjukta Mukherjee	Optima Solutions Consulting
16.	Haimanti Poddar	British Deputy High Commission
17.	Judhajit Sanyal	Calcutta Institute of Engineering and Management
18.	Manas Paul	Ananada Chandra College , Jalpaiguri
19.	Pratim Ranjan Bose	Business Line
20.	Rajib Das	Calcutta Electric Supply Corporation

List of facilitators present during the Peer Group Consultation Meeting, Kolkata

1.	Abhisek Kumar	CUTS INTERNATIONAL
2.	ArnabGanguly	CUTS INTERNATIONAL
3.	Anastasia Kluter	FES, India office
4.	ArkapalSil	CUTS INTERNATIONAL
5.	Bijaya Ray	CUTS INTERNATIONAL
6.	KanikaBalani	CUTS INTERNATIONAL
7.	PrithvirajNath	CUTS INTERNATIONAL
8.	SayantanaSengupta	CUTS INTERNATIONAL
9.	Sehaj Malik	FES, India office