

Green Growth and Energy Transformation

Solar for Education

Forum for Awareness

Saturday October 28, 2017, Kolkata

Draft Report of Proceedings

1) Background

CUTS International along with Friedrich-Ebert-Stiftung (FES) has been steering a project on 'Green Growth and Energy Transformation' in states of Rajasthan, West Bengal, Delhi. The core aim of the project is to create an implementable strategy /proposal for energy transformation (from fossil to non- fossil) at the sub-national level to facilitate sustainable growth.

Any transformational strategy must encompass at least four key elements – technology, market, state and citizens. Accordingly, the stakeholders who came together under the Grow-GET initiative in the form of a seed community identified a catalytic project on '**Solar for Education**' with an understanding that not only the above four elements could converge on this project idea but it will also be able to catalyze action on many other fronts.

To implement the project further strategic framework was designed and it mainly includes five activities namely **scoping visits** to identify locations; create a **Grassroots Forum** to assess need, scale and concerns of the grassroots amongst others; create a **Forum for Finance & Jobs** to assess ways of channelizing the required finance for implementation; create a **Forum for Policy** to take up issues related to finance and technology policies which act as bottlenecks and **Forum for Awareness** to ensure that there is adequate awareness amongst stakeholders of how best to provide solar solution to the last mile. CUTS International organised the Forum for Awareness in collaboration with Earth Day Network.

2) A Brief Snapshot of proceedings

Prithviraj Nath, Associate Directors, CUTS International, delivered the welcome address and said that the overall objective of the meeting is to share the key findings that emerged from various stakeholder consultations aimed at understanding the key bottlenecks and identifying strategies to address those bottlenecks so as to facilitate greater uptake of Grid Connected Rooftop Solar among educational institutions in West

Bengal. The Forum also envisages to deliberate on how the suggestions received from the stakeholder consultations could be translated into action. Further, it also aims at creating a platform where the educational institutions can directly interact with the key stakeholders and get their queries clarified. Abhishek Kumar, Director, CUTS International, elaborated on the broad objectives of the Grow Get project and briefly the experiences from Rajasthan. Khushi Khanna, Senior Consultant, Earth Day Network, mentioned various activities of Earth Day Network and how they are related to promoting energy and environment sustainability. Shri Sobhandeb Chattopadhyay, Hon'ble Minister-in-Charge, Department of Power & Non-Conventional Energy Sources, Government of West Bengal delivered the Special Address. This was followed by an interactive session where institutions who had already installed grid connected rooftop solar shared their experience with institutions who are interested to install the same. In the concluding session there was a panel discussion on how to integrate renewable energy with the conventional grid and what could be the benefits, challenges and way forward to overcome the challenges in the context of solar for education.

Representative from various Schools, Colleges, Financial Institutions, Renewable Energy Service Companies (RESCO), Civil Society Organisations, DISCOMs and subject experts participated at the consultation.

Key issues that emerged from the consultation is given below:

3) Key issues: Perspective of Different Stakeholders

A. Perspective of State Government:

The Government of West Bengal is keen on promoting solar and other forms of Renewable Energy in the state. Presently, West Bengal produces only 25 MW from solar but is planning to generate 200 MW of electricity from solar by the end of 2018. However, availability of land and shortage of fund are two key constraints facing the Government that are severely hampering the pace of solar installation in the state. To address the issue of land availability, the Government of West Bengal is promoting the solar rooftop program. In the next year the Government of West Bengal is planning to set up rooftop solar among 1,400 schools and colleges in the state. In addition, innovative projects like canal top solar, and solarisation of parks are being pursued by the State Government. In this context, while the Government is taking measures to promote solar, it is the need of the hour that the private institutions also come forward and install rooftop solar which not only has economic benefits but also certain positive social and environmental impacts.

B. Perspective of the Educational Institutes:

The educational institutions are keen to install grid connected rooftop solar. However, some of the biggest challenges facing these Institutions is the lack of awareness pertaining to the following issues:

- Cost of solar rooftop installation;
- The procedures involved in installation of GRSPV i.e. documents to be submitted, approvals required etc.;
- The Government / Private Agencies to be approached for installation of GRSPV;
- The monetary benefits accruing to the Institutions after installation of GRSPV i.e. how much investment will be required, what would be the approximate cost savings, what would be the average payback period; and
- The cost and process of maintenance of the solar panels.

While the interactive session between the educational institutions (i.e. between those who have already installed rooftop solar and between those who are willing to install the same) had addressed some of these gaps, but all of them agreed that bank finance for such installation is not available since loans for solar installation are not provided to Trust bodies. This was considered to be the most important area that needs to be addressed at the policy level to facilitate greater uptake of solar. In addition, the need for quick disbursement of subsidy by West Bengal Renewable Energy Development Agency (WBREDA) and Ministry of New & Renewable Energy (MNRE) was also highlighted by the institutions.

C. Perspective of the DISCOM

The DISCOMs do not perceive electricity from solar as a major threat to their business. In fact, they are of the opinion that installing solar rooftop among educational institutions will also help the DISCOMs to meet their renewable purchase obligation (RPO) targets. With the RPOs likely to go up, this will act as a catalyst for the DISCOMs to proactively facilitate the solarisation process.

At an aggregate level, the DISCOMs in West Bengal stand to save a substantial amount of money, to the tune of Rs.12,497.98 Crore by meeting their future Renewable Purchase Obligations (RPO) through installation of Rooftop Solar Photo Voltaic systems.

On the other hand, state level DISOMs who also have the mandate on extending access and availability to the vast rural landscape of the state perceive this differently given various operational and financial constraints.

D. Perspective of the Project Developers

As per MNRE estimates, the potential solar PV system market in West Bengal to be about 2,100MW which is worth more than Rs.12,000 Crores. To exploit the existing market potential, the solar project developers underlined the need for building capacities of consumers on various Techno-Commercial aspects related to solar which is the most critical issue when it comes to creating demand. Similarly, they also emphasised on the need for facilitating easy availability of finance and bringing in more clarity in the policies pertaining to solar. Clarity in various solar policies is of utmost importance to promote sustainable business models viz. RESCO, and Rooftop Leasing.

E. Perspective of the Financial Institutions

For the financial institutions, the major challenge is the recovery of loans provided to the educational institutions. Further, most of the private educational institutions are run by trustee boards which are not eligible to receive loans for solar.

Box 1. Success Stories

- a) **Jadavpur Sammilita Balika Vidyalaya**, one of the leading government supported school in West Bengal has successfully installed a 15KW solar photo voltaic system on their rooftop. The entire project was funded by West Bengal Pollution Control Board (WBPCB) alongwith West Bengal Green Energy Development Agency Ltd (WBGEDCL). In the last one and half year, after commissioning the SPV systems, the systems have been working successfully. Organisations empanelled by WBREDA periodically provide AMC services. In monetary terms, the school is saving approximately Rs. 20,000/- on their monthly electricity bills.
- b) **Vivekananda Centenary College, Rahara**, one of the esteemed educational institutions in the sub-urban area of Kolkata has successfully installed a 30 KW rooftop SPV systems in 2013. The total project cost is Rs. 21 Lakhs. The institute received MNRE subsidy of 30% and the balance amount was sponsored by the Institution. The Institute itself have deputed personnel who regularly clean the panels. Presently, the system is running smoothly and contributing a considerable reduction in electricity bills. On an average, the institute is saving Rs. 2.5 lakhs annually on their electricity bills.
- c) **Dinabandhu Andrews College** has installed a 20KW SPV system on their rooftop which is mostly funded by the central govt. During Oct 16-September-17, they have generated 21,431 units in one year. Previously the yearly generation was almost 45,000 units. They are also getting annual savings of INR 60,000 which is used for providing free education to physically challenged student of the institutions.

4) Way forward:

'Forum for Awareness' has been a great example of coalition between several stakeholders including private educational institutions, government departments, financial institutions, project developers and others. This along with the previous forums has identified the key bottlenecks that need to be addressed. Educational Institutes need handholding, confidence building and knowledge on how to approach and evaluate this issue; financial institutes need awareness and confidence building at the ground level; policy makers need to look at policy gaps like the issue of extending loans to Trusts. One of the most important role is to be played by the civil society organisation whocouldhelp connect all the different players, highlight positive case studies, build capacity of various stakeholders, undertake policy advocacy and also create awareness on the benefits of renewable energy applications in the education sector. With the present pragmatic approach from all the stakeholders involved, a larger discourse needs to be carried out in the near future for achieving the clean, green and sustainable future.

Annexure - I

List of Participants

Sl. No.	NAME	ORGANIZATION
	AKSHITA PAUL CHAUDHURY	SOUTH CITY INTERNATIONAL SCHOOL
1.	ANURADHA DAS	GARDEN HIGH INTERNATIONAL SCHOOL
2.	ARINDAM SAHA	FUTURE HOPE SCHOOL
3.	ARNAB GHOSH	MODERN SOLAR
4.	AVIJIT GHOSH	CSIR-CENTRAL GLASS & CERAMIC RESEARCH INSTITUTE
5.	BHASWASTI PIPLAI	APEEJAY SCHOOL
6.	BHASWATI MUKHERJEE	DELHI PUBLIC SCHOOL, NEWTOWN
7.	BIPLAB GHOSH	BANDHAN BANK, SALT LAKE
8.	C.R. PANI	THE HERITAGE SCHOOL
9.	CHAITRI SEN	DELHI PUBLIC SCHOOL, NEWTOWN
10.	COL S.NATH	MODERN HIGH SCHOOL FOR GIRLS
11.	D. GHOSH	BIRLA INSTITUTTE OF TEHNOLOGY & MANAGEMENT
12.	DEBABRATA MANDAL	HALDIBAI FARMERS PRODUCER COMPANY
13.	DEBASHISH DHAR	MODERN SOLAR LTD
14.	DILIP SAMAJPATI	RELIANCE JIO ECO SPACE
15.	DIPAK MANDAL	2/55,KAPASDANGA,SIBTALA
16.	H.S. JAISWAL	LAKSHMIPATH SINGHANIA ACADEMY
17.	INDRANI GANGULI	LORETO DAY SCHOOL BOWBAZAR.
18.	JUDHAJIT SANYAL	DIRECTOR, SDRC
19.	KAUSHIK SANYAL	TATA POWER,DELHI
20.	KHUSHI KHANNA	EARTH DAY NETWORK
21.	KRISHNANDU BHATTACHARJEE	RAMPURHAT MUNICIPLITY
22.	MANOJ MAHATA	GIZ
23.	MUKTA NAIN	BIRLA HIGH SCHOOL.
24.	S DEY	LORETO HOUSE, MIDDLETON ROW
25.	U. GHOSH	LORETO HOUSE SCHOOL, MIDDLETON ROW
26.	N. MAJUMDAR	EARTH DAY NETWORK
27.	N.DUTT	EARTH DAY NETWORK
28.	NAVONIL DAS	EARTH DAY NETWORK
29.	PIYUSH JAJU	ONERGY SOLAR
30.	PRENSU MAITRA	STATE BANK OF INDIA,KOLKATA
31.	RAJIB DAS	CESC LTD
32.	S P CHANDAK	PROF. EMERITUS, BIMTECH
33.	S. NEOGI	SCHOOL OF ENERGY STUDIES,JADAVPUR UNIVERSITY
34.	SANJUKTA MUKHERJEE	OPTIMA SOLUTIONS
35.	SATRAJIT SANYAL	OPTIMA SOLUTIONS

Sl. No.	NAME	ORGANIZATION
36.	SATYAJIT DEY	SUNPOWER ENERGIES TECHNOLOGIES PRIVATE LIMITED
37.	SAYEEDA BANO	SAKHAWAT MEMORIAL GOVERNMENT SCHOOL
38.	SIMRAN GROVER	BASH FOUNDATION
39.	SOBHANDEB CHATTOPADHYAY	MINISTER IN CHARGE, DEPARTMENT OF POWER & NES, GOVERNMENT OF WEST BENGAL
40.	SOMNATH MUKHOPADHYAY	DINABANDHU ANDREWS COLLEGE
41.	SOUMEN BHATTACHARYA	ENERGY ENSEMBLE
42.	SOUMITA ROY	SOUTH CITY INTERNATIONAL SCHOOL
43.	SUDESHNA CHAKRABORTY	JADAVPUR SAMMILITA BALIKA BIDYALAYA
44.	SUNIL SINGH	HERITAGE SCHOOL, CHOWBAGA
45.	SUSRITA PRADHAN	INDIAN INSTITUTE OF CEREBRAL PALSY
46.	TARUN PRADHAN	DINABANDHU ANDREWS COLLEGE
47.	UTTAM MUKHERJEE	SUNSHINE POWER PRODUCTS PVT. LTD.
48.	VISHAL BHANDARI	SRI SRI ACADEMY

List of Project Team Members

SL. NO	NAME	ORGANISATION
1.	ABHISHEK KUMAR	CUTS INTERNATIONAL
2.	ARNAB GANGULY	CUTS INTERNATIONAL
3.	BIJAYA ROY	CUTS INTERNATIONAL
4.	DIPANKAR DAS	CUTS INTERNATIONAL
5.	N.K. SINHA	CUTS INTERNATIONAL
6.	PRITHVIRAJ NATH	CUTS INTERNATIONAL
7.	PRIYAM PUROHIT	CUTS INTERNATIONAL
8.	PRIYAM PUROHIT	CUTS INTERNATIONAL
9.	ROSHAN IYER	CUTS INTERNATIONAL
10.	RUPAMOY BHATTACHARYA	CUTS INTERNATIONAL
11.	SAYANDEEP CHATTOPADHYAY	CUTS INTERNATIONAL
12.	SAYANTAN SENGUPTA	CUTS INTERNATIONAL
13.	SUBHANIL BANERJEE	CUTS INTERNATIONAL
14.	SUMANTA BISWAS	CUTS INTERNATIONAL

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Agenda

10:00 – 10:30	Registration and Tea/Coffee
10:30 – 11:30	<p style="text-align: center;">Inaugural Session</p> <ul style="list-style-type: none"> • Welcome Address and Introductory Remarks, by Prithviraj Nath, Associate Director, CUTS International • Welcome Address by Khushi Khanna, Senior Consultant, Earth Day Network • Project Overview by Abhishek Kumar, Associate Director, CUTS International <p>Address by Chief Guest –</p> <ul style="list-style-type: none"> • Sobhandeb Chattopadhyay, Hon’ble Minister-in-Charge, Department of Power & Non-Conventional Energy Resources, Government of West Bengal
11:30-11:45	TEA BREAK
11:45 – 12:30	<p>Panel Discussion</p> <p>Theme: <i>Sharing Institutional Experiences on Installation of Grid Connected Rooftop Solar</i></p> <p>Moderator: Avijit Ghosh, Principal Technical Officer, CSIR-Central Glass & Ceramic Research Institute</p> <p>Presentation: <i>Grid Interactive Rooftop Solar PV Systems: What, Why & How</i> by Sayantan Sengupta, Senior Research Associate, CUTS International</p> <p>Speaker(s):</p> <ul style="list-style-type: none"> • Sudeshna Chakraborty, Head Mistress, Jadavpur Sammilita Balika Vidyalay • Suvina Shunglu, Principal, Sri Sri Academy • Swami Kamalasthananda, Principal, Ramakrishna Mission Vivekananda Centenary College, Rahara • Somnath Mukhopadhyay, Principal, Dinabandhu Andrews College

<p>12:30 –13:45</p>	<p>Panel Discussion</p> <p>Theme: <i>Integrating Renewable Energy: Benefits, Challenges and Way Forward in the Larger Context of Solar For Education</i></p> <p>Moderator: Abhishek Kumar, Associate Director, CUTS International</p> <p>Presentation: <i>Solar for Education: Key Learnings from West Bengal</i> by Arnab Ganguly, Assistant Policy Analyst, CUTS International</p> <p>Speaker(s):</p> <ul style="list-style-type: none"> • Kaushik Sanyal, Head of The Department, (Business Services Group), Tata Power Delhi Distribution Ltd. • Simran Grover, Founder & Head, Bask Foundation • Subhasish Neogi, Commonwealth Fellow, School of Energy Studies, Jadavpur University • Rajib Das, Senior Manager, CESC Ltd., Kolkata • Debashish Dhar, Director, Modern Solar • Piyush Jaju, CEO, ONergy • Pranshu Maitra, Assistant General Manager (SME), State Bank of India, Kolkata • Biplab Ghosh, Head-Bandhan Renewable Energy Program, Bandhan Bank Limited <p>Floor Discussion</p>
<p>13:45-14:00</p>	<p>Closing Remarks followed by Vote of Thanks</p>
<p>14:00</p>	<p>Lunch & Departure</p>