



**Green Growth and Energy Transformation
Solar for Education
Forum for Grassroots
Saturday March, 25, 2017, Jaipur
Event Report**

1. Background :

In April 2016, CUTS International with the support of Friedrich Ebert Stiftung (FES) commenced a project on Green Growth and Energy Transformation, in short called Grow-GET. The central idea of the project is to formulate a strategy towards energy transformation in the state of Rajasthan, amongst others. The project focus is mainly on electricity sector and the project goal also complements the efforts of National and State governments on increasing the share of renewable energy in the overall energy mix.

During the course of deliberations it became clear that any transformational strategy must encompass atleast 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, grassroots forum to assess need, scale and concerns of the grassroots amongst others, finance and job forum to assess ways of channelizing the required finance for implementation, policy forum to take up issues related to finance and technology policies which act as bottlenecks and awareness forum to ensure that there is adequate awareness amongst stakeholders of how best to provide solar solution to the last mile.

This report is based on the discussions and outcomes of the grassroots forum. Therefore, it may be pertinent to elaborate on some of the key outcomes that were envisaged from the grassroots forum. The following points summarise them in brief:

- To bring select grassroots stakeholders together so that they could connect with peers from different locations and rally together over common problems, challenges and solutions. This is in effect can create a broader societal coalition of beneficiaries who can catalyze the implementation by suggesting ideas that can help in streamlining business models for the last mile.

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- Grassroots forum is also supposed to promote peer to peer exchange of information including good practices. This works better for community learning and motivation.
- The forum also gives an idea of scale of the immediate need. This is important for prospective project developers, politicians or other actors like media and educationalists, amongst others for whom scale matters for economic and political reasons.
- The forum is also supposed to bring out several other concerns that prevent projects from scaling up such as crucial information on why progressive initiatives have failed on the ground in the past.

To sum up, the forum was designed to gather and assess inputs on need, scale, relevance of policy on finance and technology and level of awareness, both basic and advance. These inputs are crucial to inform the project team about questions and suggestions that can be taken up in other forums. It may be reiterated here that role of CUTS International is only to facilitate the implementation and not to implement the project by itself.

2. Key points discussed in the grassroots forum:

Awareness:

There seems to be lack of, both basic and advanced, awareness. While by basic awareness it is meant that grassroots knowledge on what solar can do is little, the advance awareness entails knowledge on cost, maintenance, functioning of technology, subsidy, availability of vendors and how provision of energy can improve educational and skill levels in villages, amongst other things. The forum discussion also indicated that people will be ready to explore the use of solar technology even for household and agriculture purposes once they have adequate awareness. Therefore, lack of awareness was identified as the main bottleneck in uptake of solar solutions.

Security:

There is a general perception that theft of solar equipment especially the battery will be a significant deterrent. Unless this can be prevented it will be difficult to scale up the project. It was however stated that in schools this may not be a significant challenge as adequate provisions for its safety and security can be made.

Difference between off grid and on grid technology:

There was an overwhelming acceptance for off grid solutions as the need for energy is high but for on grid application main issues included scant knowledge on net metering policy and apprehension pertaining to high bureaucratic control and lengthy procedures to get the system installed.

Rooftop space

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An issue related to rooftop feasibility also surfaced. A general view is that most rural buildings do not have roof tops which are suited for civil works of the nature needed for solar installations.

Finance:

Discussion on finance can be further divided into the following categories:

- ***Community participation:***

Communities from targeted locations are by and large willing to contribute both in terms of money as well as maintenance. The local peoples' representatives can play a significant role in mobilizing the community for such a role. Such community participation can bring down the cost of the installation as well as increase awareness and longevity of the project. Some of the peoples' representatives seem confident of mobilizing an amount close to 15-20% of the project cost. It may be noted here that in one of the project locations, the 'highest government district functionary' has already institutionalized community participation as a norm for most public works.

With regards to community perception, concerns emanated mainly on one count i.e. with increased awareness if communities opt for installations at house hold level, the upfront cost for installation will be a deterrent despite subsidy. However, it must be mentioned here that there is a divided house on this issue with the majority agreeing that consumers will be able to pay up the upfront cost as quality of grid supplied electricity is very poor, unreliable and intermittent. The billing amounts also don't represent actual consumption as they are improperly attributed due to inefficiencies in the system.

- ***Bank Loans:***

It has repeatedly been highlighted that even though banks are mandated to extend loans for solar installations, the actual compliance is low in areas where need is high. This is due to high compliance costs for recovery of loans and inadequate manpower in the banking system. A proposition was thus put forth that a tripartite agreement between a bank, technology provider and a third party (NGO) can help in scaling up solarisation of villages. This proposition has already been cross-vetted informally by number of bankers though with a caveat i.e. MNRE vouches for specific project developers and hence banks or their local branches may not be willing to have a tripartite agreement with a technology provider which is not part of that list.

Therefore, there is a need to take up this issue at the relevant policy level.

- ***Subsidy:***

Another finance issue is with regards to subsidy. There is a view that the new draft MNRE policy on subsidy promotes standardization and hence will be a deterrent in large scale

uptake of the decentralized solar solutions which may require a high degree of customization.

- ***Corporate Social Responsibility (CSR):***

CSR can be an effective way to ensure finances in the pilot locations. It must be mentioned that CSR cannot be relied upon as source for an enduring source of finance. This may require identifying corporations which may have interest in the project locations and analyzing their CSR policies. In fact CSR spending on solarisation of schools can set an example that other corporations may also be inclined to replicate.

- ***Legislator Development Fund:***

Legislators, both central and state level, have the obligation to utilize their local areas development fund. This may therefore be directed towards solar for education programme. A separate advocacy with legislators will be needed for this. It may however be noted that this may take over six months and may require initiation of a complicated government process especially in cases where such funds have to be utilized for government schools.

3. Lessons from the ground:

Udaipur: Kaya secondary school in Udaipur district has championed a model for incentivizing education and solarisation in off grid areas. The model works as follows:

Female students, particularly coming from off grid areas, in crucial grades where incidentally a high dropout incidence also occurs are targeted. They are provided with portable home lighting lamps with a mobile charging point. These systems are typically charged in the school where there is electricity but are taken back by students to their respective homes.

The intervention then ensures that not only students can study at home but their families also get the benefit of lighting at home. This causes the parents to ensure that their children are regularly attending school. In other words, the intervention is akin to Government of India flagship programme called 'Mid Day Meal' scheme which has been credited with increased enrollment ratio.

Evidence also suggest that academic performance of students has improved since the intervention was introduced. Given these facts, there is a scope to replicate such initiatives at a national level.

Sawai Madhopur: An innovative approach on financing school infrastructure is underway in the district of Sawai Madhopur in Rajasthan. Farmer Produce Organisations (FPO) sell the farm waste (mustard husk) to industrial units and a part of this money is given to school management committees through the intervention of District education officials. Some estimates suggest that approximately INR 6 Crore has thus far been collected by

disposing off farm waste. The finances collected through such practices can be utilized for solarisation programme. In addition, local MLAs/MPs can also push such interventions.

Unsuccessful practices: Programme running solely on Government funding without any ownership of the community can not only become largely unsuccessful and unsustainable but can also send a negative message to the community on the potential of innovative interventions. A case in point is many dysfunctional solar systems installed on several sAtal Seva Kendras which are meant for providing hundreds of Government to Citizen (G2C) and Business to Citizens (B2C) services in rural and peri-urban areas.

Since these centres see a rather overwhelming turnout of local people to avail the essential services, the dysfunctional solar systems and delayed services due to non- provision of electricity has made a negative impression on people about the utility of solar solutions.

It may be noted here that this is largely due various factors such lack of **people participation, availability of local maintenance and lack of single point responsibility in maintenance and upkeep of the systems, and lack of vendor accountability mechanisms**, amongst others.

4. Some Key recommendations:

- 1) Ownership of the community is needed to ensure decentralized solutions are durable, cost effective and sustainable. Further, management by community will require strong structures to be built to avoid conflicts which are common.
- 2) Tripartite agreement between local financial institutions, technology provider and community based organizations can ensure a sustainable business model
- 3) There is a need for awareness campaign at basic and advanced level
- 4) Maintenance workforce should ideally be sourced locally, hence there is a need to train local technicians. This will require a coordination mechanism between technology providers and local workforce.
- 5) To avoid failures such as those seen in case of Atal Seva Kendra – an Op-Ex model could be used as the concerns related to sustainability of the project could be addressed through the such an approach. Under the Op-ex model, the system belongs to the project developer who provides various services to the consumer/beneficiary. The consumer is liable to making regular payments to the project developer for the services offered. In this model, the contract between the consumer and the developer plays a key role in determining the relationship between the two entities. Thus contractual provisions that puts conditions on payments by the consumer to the developer on the basis of system's performance could ensure sustainability of the project.
- 6) Technology solutions such as remote monitoring system could be another probable measure to ensure the sustainability of system. Remote monitoring involves real time performance assessment of the solar system, which provides a technology based mechanism for ensuring checks and balances.

6 List of Participants:

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