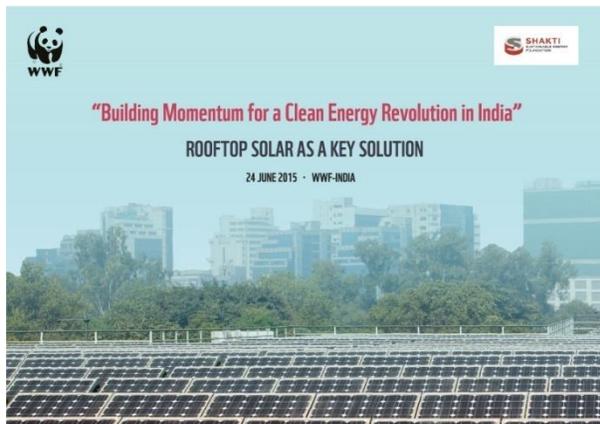


“Building Momentum for a Clean Energy REvolution: Rooftop Solar as a Key Solution”



A one day workshop on “Building Momentum for a Clean Energy REvolution: Rooftop Solar as a Key Solution”, jointly organized by WWF-India and Shakti Sustainable Energy Foundation, was held on 24 June 2015 at WWF-India headquarters. The workshop brought together a range of key stakeholders, from government bodies, utilities, financial institutions to think tanks and renewable energy developers.

The workshop envisaged to further the momentum for rooftop solar markets, a vital component of India’s ambitious 100GW by 2022 solar target, by facilitating

enhanced dialogue, interaction and cooperation among various stakeholders to help the Indian government achieve the target. Two key areas of focus included the policy, technical & regulatory aspects, and the business case for the rooftop solar revolution, in particular the financial vehicles.

Mr. Ravi Singh, Secretary General & CEO, WWF-India welcomed the workshop participants and spoke about India’s domestic energy scenario and the number of interplaying factors in the country’s renewable energy (RE) sector such as political will, innovation, awareness, etc. Mr. Chinmaya Acharya, Chief of Programmes, Shakti Sustainable Energy Foundation who highlighted India’s ambitious 100GW solar target and spoke about the recent plan of the government to make rooftop solar segment as its key priority sector with allocation of 40GW of installation target. Mr. Rafael Senga from WWF International spoke about the accelerating momentum in renewable energy deployment and investments globally, as indicated in the key findings from the latest “Global Renewable Energy Status Report - 2015” prepared by REN21. He also cited the leadership that India has shown in RE development, with its 100GW solar target and urged all stakeholders gathered in the workshop to discuss ways how to achieve the ambition. This was followed by a scoping long-term RE vision for India, based on the Energy Report India-100% Renewable Energy by 2050, presented by Dr T.S. Panwar, WWF-India.



L to R: Mr Ravi Singh, SG &CEO, WWF-India, Mr Rafael Senga, WWF International; Mr Chinmaya Acharya, Shakti Sustainable Energy Foundation

The first session began with an overview of the status of the rooftop solar market in India that set the tone for the panel discussion on the technical and regulatory aspects of rooftop solar, in particular the policies, barriers and initiatives. The panel on Regulatory Ecosystem and Technical Aspects of Rooftop Solar included Mr. Rakesh Kumar, Director (PS), Solar Energy Corporation of India (SECI); Mr. Sujay Saha, Head of Group, DSM, Tata Power Delhi Distribution Limited (TPDDL); Mr. Ashish Agarwal, Head, Solar Business, Hero Future Energies Pvt. Ltd.; Mr. Ashwin Gambhir, Senior Research Associate, Prayas Energy Group. Mr. Santosh Kumar (IFS), Director (Science and Technology) & CEO, Chandigarh Renewal Energy Science and Technology Promotion Society (CREST) moderated the discussions.

It was highlighted that industrial and commercial sectors are the major segment markets for solar rooftop systems since these sectors have higher power tariffs. In case of residential sector, the uptake of rooftop solar has been slow due to the high initial investment cost. The discussions highlighted some positive efforts on this front such as Reserve Bank of India (RBI) guidelines for priority sector lending, and directions to banks for inclusion of solar system cost as part of the housing loan requirement. Panelists also agreed that lack of clear policies and general public awareness (particularly regarding grid connectivity and net metering) and limited support from DISCOMs are the major reasons for poor deployment of rooftop solar systems in residential areas.

The discussions also brought forward that CAPEX is the dominant investment model, and other mechanisms like RESCO still have some associated challenges like tariff determination, agreement on liabilities, among others. However, the segment is witnessing new projects which are being successfully implemented under RESCO model like the 500kW_p solar rooftop plant at the Dwarka Sector 21 Metro Station in Delhi by DMRC (Delhi Metro Rail Corporation). For project developers, the main issues were higher grid integration cost of decentralized (LT) systems, safety issues (reverse power flow) and lack of clarity on grid integration from local DISCOMs.

The session successfully converged on the need for a massive scaling up to achieve India's ambitious 40GW rooftop solar target. One of the first suggestions that emerged from the workshop was the development of a comprehensive renewable energy legislation that can act as a guiding framework for scaling up RE in India. This was particularly deemed important since the technical and financial issues vary from state to state. The states also need to be taken on board to achieve the requisite targets. Other recommendations included strict enforcement of Renewable Energy Purchase Obligations (RPOs) by government to ensure increased RE penetration in the grid, need for demystifying the technology which would require more concentrated efforts from different stakeholders (government, project developers, DISCOMs, CSOs, etc.) to increase public awareness on technology, grid integration, policies and pricing, etc. There is also an urgent need to bring in requisite standards for rooftop solar system technology and components in order to increase consumer trust in the technology. Formulation of best practices guidelines was also recommended.

The second session began with a presentation by Mr. Michael Schmela, Executive Advisor, Solar Power Europe who provided a brief overview of renewable energy scenario in Europe and provided reasons for its higher uptake in the region. He emphasized on simplifying the regulations and policies, unlocking private business innovation (project developers and DISCOMs) and creating smart local production, demand side flexibility and making tariff regulation fit for energy transition for a higher RE scale up in India. Representing Solar Rooftop Policy Coalition, Mr. Phil Marker presented the finding of initial analysis done by the coalition. He mentioned various issues that are hampering rooftop solar sector (finance, technical and regulatory) and presented suggestions for each of these issues.



L to R: Bharat Bhushan, Bloomberg New Energy Finance; Mr. Sivaram Krishnamoorthy, IFC; Ms. Jyoti Gulia, Bridge to India; Pawan Kumar Agrawal, Yes Bank; Mr Phil Marker, Solar Rooftop Policy Coalition; Mr. Akhilesh Magal, GERMI; Mr. Suman Kumar, SunEdison India

The panel discussion focused on the business case for rooftop solar, in particular, the financial vehicles driving it. Mr Phil Marker moderated the discussions. The panelists included Mr. Pawan Kumar Agrawal, President, Corporate Finance, Yes Bank, Mr. Sivaram Krishnamoorthy Renewable Energy and Resource Efficiency Advisory, International Finance Corporation (IFC), Mr. Bharat

Bhushan, Senior Analyst, Bloomberg New Energy Finance, Mr. Suman Kumar, Director, SunEdison India, Mr. Akhilesh Magal, Head of Solar Advisory, GERMI, Ms. Jyoti Gulia, Senior Manager-Market Intelligence, Bridge to India.

The main issue pertaining to the deployment of rooftop solar in the residential sector was that of risk perception of financial/lending institutions as compared to financing utility scale projects since utility scale projects provide some level of performance guarantee and assured cash flow over the life span of project. A possible intervention for the issue is that of performance guarantee agreements between parties that could lower the risk perception of financial institutions. Also, limited availability of non-recourse finance and higher interest rate for individual borrowers were identified as barriers for deployment of rooftop solar in the residential sector. Speaking on improving financial health of DISCOMs as one of the main interventions to promote grid tied rooftop solar installations, panelists agreed that separating feeder lines (agricultural) and reducing subsidy burden on DISCOMs could be one of the solutions. With solar projects nearing grid parity in many states, proper implementation strategy with defined timelines and interest rate subvention can boost the rooftop solar segment in India.

The discussions concluded on the point that in order to meet the ambitious target of 40GW of rooftop solar, there is an urgent need to tap the residential sector which so far has shown slow growth for the rooftop solar market. And in order to tap this market, innovative financial mechanism would play a crucial role in accessing viable finance which is a prime issue for individuals.

The last session on the role of civil society in creating a solar-based market began with a presentation by Mr. Hugo Lucas Porta, Head-Energy Department, Factor CO₂ who spoke about the job market that renewable energy as a sector can create and how it is increasingly becoming an important driver for policy intervention. The workshop concluded with closing remarks by Mr. Tabare Arroyo Curras from WWF International who summed up the discussions of the workshop and presented the way forward. He stressed on the need for technological innovations and simple solutions for people to adopt them. He pointed out that as a stakeholder in the renewable energy ecosystem; CSOs have an important role in creating awareness and bridging information gaps, thus preparing India for the renewable energy transformation. The workshop ended with a vote of thanks by Dr. T S Panwar, WWF-India.

The successful conduct of the workshop marked an important milestone in the multi-stakeholder effort to pave the way in achieving India's lofty solar ambition, aimed at enhancing the country's energy security, improving domestic air quality, creating quality jobs in higher numbers and contributing to global efforts in preventing dangerous climate change. The workshop also positioned WWF-India as a key player and catalyst in advancing India's Clean Energy REvolution.