ENERGY EFFICIENCY SERVICES LIMITED
A JV of PSUs under the Ministry of Power

INNOVATING ENERGY

APRIL 2020
EDITION 16

Decentralised Solar Power - A Paradigm shift in the power sector

Inside Stories

EDITOR'S NOTE

Shri Venkatesh Dwivedi
Director (Projects & BD)
Energy Efficiency Services Limited (EESL)

EESL's solar programmes: Creating a new energy paradigm in India

Shri Anil Kumar Dabhade
AGM (Solar)
Energy Efficiency Services Limited (EESL)

Innovative renewable energy procurement by Maharashtra State-owned DISCOM - MSEDCL under "Mukhaymantri Saur Krishi Vahini Yojna"

Shri Satish Chavan
Director (Commercial)
Maharashtra State Electricity Distribution Company Limited (MSEDCL)

Distributed Solar – Promising "Disruption"

Shri Jiwan Acharya
Principal Energy Specialist
Asian Development Bank (ADB)

Redefining renewable energy with unique business model

#EESLFightsCOVID19

EDITOR'S NOTE

Dear Reader,

Solar energy has emerged as a mainstay of India's energy mix. It is slowly witnessing increased adoption, especially in the nation's traditionally energy dark rural areas. The government of India has introduced major interventions, to overhaul energy usage in the country, with the Ministry of New and Renewable Energy (MNRE) launching innovative schemes such as the 'Kisan Urja Suraksha Evam Utthaan Mahabhiyan (KUSUM)'. This initiative seeks to utilise India's majorly agricultural economy to propel India towards achieving its renewable and sustainable development goals. The scheme proposes:

- 2 MW grid-connected solar power plants in rural areas
- Standalone off-grid solar water pumps
- Solarisation of existing grid-connected agriculture pumps

EESL too has been focused on rapidly building India's renewable capacity and is currently undertaking initiatives such as solarising agriculture feeders, wherein it is setting up decentralised solar projects on vacant discom land, thus providing farmers reliable day-time electricity access. It is also setting up grid-connected solar PV based rooftop projects at various government buildings under three different business models. Roof-top solar has immense utility in reducing the cost of electricity and GHG emissions. Lastly, EESL is in the process of carrying out competitive bidding for 175,000 off-grid solar pumps on behalf of MNRE.

This newsletter aims to explore the solar energy ecosystem in the nation, along with some of the impactful schemes and programmes that are currently underway. The article *"Distributed Solar – Promising "Disruption"* looks at EESL's foray into the sector and potential avenues for scaling solar power in the country. *"EESL's solar programmes: Creating a new energy paradigm in India"* encapsulates all of EESL's solar ventures and provides a deeper understanding of their various nuances. The article "Innovative renewable energy procurement by MSEDCL Under "Mukhaymantri Saur Krishi Vahini Yojna" delves into EESL's project in Maharashtra, in partnership with Maharashtra State Electricity Distribution Company Limited (MSEDCL). The newsletter also contains two testimonials, which outline EESL's role in creating a market for decentralised solar power in India. These pioneering schemes are helping solar energy in becoming an integral part of India's energy ecosystem.

We are currently in the midst of an unforeseen health, social and economic crisis. The COVID-19 pandemic has swept across globally, leaving significant upheaval in its wake. This newsletter dedicates one page to the array of preventive measures that EESL is taking in combating this pandemic.

While our citizens, industries and sectors have felt the impact of COVID-19, with timely measures and steps being taken by the government and us as individuals, our nation will definitely triumph against this predicament.

Stay safe and take good care of yourself and your loved ones.

With Regards,

Shri Venkatesh Dwivedi
Director (Projects & BD)
Energy Efficiency Services Limited (EESL)

Sh. Anil Kumar Dabhade
Additional General Manager (Solar)
Energy Efficiency Services Limited (EESL)

EESL's solar programmes: Creating a new energy paradigm in India

Renewable energy is the most sustainable and affordable pathway to meet India's rapidly growing energy demand. At 100 GW, solar energy comprises the largest component of India's goal of 175 GW of renewable capacity by 2022. The 'Kisan Urja Suraksha Evam Utthaan Mahabhiyan (KUSUM)' scheme of the Ministry of New and Renewable Energy (MNRE) has sought to leverage the largely agrarian economy towards India's renewable goals. The scheme proposes 2 MW grid-connected solar power plants in rural areas; standalone off-grid solar water pumps to fulfil the agri-irrigation needs of farmers not connected to the grid; and solarising existing grid-connected agriculture pumps to make farmers independent of grid supply and enable them to sell surplus solar power generated to DISCOMs for additional income.

Leveraging the potential of solar energy in India and the need for access to clean, reliable daytime electricity for farmers, Energy Efficiency Services Limited (EESL) is implementing three initiatives:

1. Decentralised Solar Power Plants: Solarisation of Agriculture Feeders Programme

In this first-of-its-kind programme, EESL is setting up decentralised solar projects ranging from 0.3 MW to 10 MW capacity in vacant, un-used land of DISCOMs. Power generated from these decentralised solar power plants are being fed to agriculture feeders, which in turn, is greatly benefitting both farmers and DISCOMs by means of:

- **Quality and reliable daytime electricity to farmers**
- **Savings on the transmission network cost, leading to reduced losses for DISCOM**

Under the government of Maharashtra's prestigious 'Mukyamantri Sour Krushi Vahini Yojana', EESL and Maharashtra State Electricity Distribution Company Limited (MSEDCL) signed a 25-year Power Purchase Agreement (PPA) for 500 MW decentralised solar power. EESL has been tasked with financing, EPC and O&M at the plants on MSEDL-provided land. With 100 MW already commissioned, EESL is on track to achieve 500 MW in decentralised solar, which will generate around 766 million units of clean electricity annually and mitigate 0.63 million tonnes in annual CO2 emissions. Also in the pipeline is 300 MW of decentralised solar in Maharashtra, in partnership with MAHAGENCO.

The growth team of EESL Maharashtra is dynamic and highly motivated. It has been working diligently under the leadership and guidance of Sh. Dipak Kokate, State Head (Growth- MH), who has been carefully supervising the installation of solar plants, along with the O&M work in Maharashtra.

2. Solar Rooftop projects

EESL is setting up grid-connected solar PV-based rooftop projects at various government buildings under three different business models.

i. Capital Expenditure (CAPEX) model: Under this model, the rooftop owner buys the rooftop solar system, and the customer may or may not take a loan to fund part of the investment, after investing his