KfW Development Bank

»» Project Information

Federal Ministry for Economic Cooperation and Development

Implemented by: KFW

Renewable Energy – India

New connections for more renewable energy in India

Demand for electricity is constantly growing in India. While a growing population and dynamic economy on the subcontinent need more energy, around 25 % of the population – almost 300 million people – still have no access to electricity. That is why the country is working at great speed to expand its electricity networks and increase the share of renewable energy generation. The Indian Government has set ambitious targets for increasing the deployment of renewable energies in the future.

Context

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The share of India's electricity mix accounted for by renewable energies is to rise to 15 % by the year 2020. Another roughly 16 percent stems from large hydropower plants in the Himalayas. 100 GW of solar power is envisaged to be installed by 2022 along with a proposal to reach 60 GW of wind power by the same deadline under a new National Wind Mission. Today only 4 GW of solar power and 24 GW of wind power and a total of 36 GW renewable generation capacities are installed.

The geographical location of the potential renewable energy rich areas are mostly far away from the demand centres. Moreover, 90 % of the renewable energy potential is limited to seven states only.

Project approach

While earlier all focus in the renewable energy sector was on generation, the Indian government recognized the need for transmission infrastructure for increasing the share of renewables significantly in a comprehensive transmission plan called "Green Energy Corridors" (GEC). Two years ago, the German Federal Government expressed its willingness to provide up to one

Project name	Green Energy Corridors
Commissioned by	Ministry of Power (GoI) Ministry of New & Renewable Energy (GoI) German Federal Ministry for Economic Cooperation and Development (BMZ)
Country/Region	India
Lead executing agency	KfW Development Bank

The expansion of the „Green Energy Corridors“ is one of the most ambitious network infrastructure projects in the world. Source: KfW Bank Group / Walter Klotz

billion EUR for financing “Green Energy Corridors” to ensure that renewable energies play as big a part as possible in this growth. In this context, KfW Development Bank under the Financial Cooperation (FC) with India has put together one of the biggest loan packages in its history to finance the “Green Energy Corridors”. These lines will be used to evacuate the electricity generated using solar, wind and water power into the intra and interstate transmission networks. The intrastate network will feed the renewable energy to the respective state grids and the high capacity transmission corridors as a part of the interstate network will connect major renewable energy pockets with the national grid. The interstate transmission network will be implemented by the Central Transmission Utility – Power Grid Corporation of India and the intrastate networks will be implemented by the respective State Transmission Utilities.

Loan agreements with a total volume of EUR 500 million have already been concluded with the Central Transmission Utility of India **“Power Grid”**, as well as loans totaling EUR 125 million with the State Transmission Utilities of Tamil Nadu and Rajasthan have been signed. Further loans adding to a total volume of more than one billion Euros are under preparation and expected to be signed in the next one to two years. These loans will finance the new switchgear substations, power systems and transmission lines especially for transporting renewable energy in India, or “Green Energy Corridors”.

Hence, the KfW financing under the Green Energy Corridors project also includes control infrastructure needed for forecasting the renewable generation, balancing infrastructure and dynamic compensation. Renewable Energy Management Centres (REMC) shall be established to forecast and schedule the renewable energy generation thus contributing to increased grid stability. The REMCs are another key area of Indo-German Cooperation.

KfW Development Bank is implementing Financial Cooperation in this field in a very close collaboration with GIZ implementing Technical Cooperation. GIZ is supporting the integration of renewable energy in the grid with EUR 9 million.

Impact

The transmission infrastructure for evacuating the renewable energy is not only important for the new capacities but will also be solving the current shortage of transmission capacity because of which currently, many renewable energy plants have to curtail their generation at times due to transmission bottlenecks. The expansion of the green corridors in India is one of the most ambitious network infrastructure projects in the world and will support increasing the renewable generation capacities thus contributing towards lowering the rising emissions of greenhouse gases in India.

A total of more than 5,800 kilometers of new power lines are being laid and more than 165 switchgear substations installed or renewed in India with financing from German Financial Cooperation.

The loan agreements concluded by KfW with its Indian partners to date are alone financing facilities that transmit enough green energy to meet the average annual electricity requirements of 11 million Indians.

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Contact
KfW Group
KfW Development Bank
Palmengartenstrasse 5-9
60325 Frankfurt am Main, Germany
Phone +49 69 7431 4498
nils.nedenbach@kfw.de

KfW Office New Delhi
24, Paschimi Marg, Vasant Vihar
New Delhi 11057
India
kfw.newdelhi@kfw.de

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