



## Integration of Renewable Energy in Buildings in India (BEEP RE)

### CONTEXT

The residential and commercial buildings in India account for about 33 percent of the electricity consumption, which is rising at nearly 8-9 percent annually. Population growth combined with increasing electricity demand and affordability for thermal comforts (mainly by using air conditioners) is expected to exponentially increase the energy consumption in buildings. The projections of Niti Aayog, a premier think-tank of the Government of India, estimate 6-10 times increase in electricity demand in commercial buildings and 4-10 times increase in residential buildings during 2012 to 2047.

India aims to achieve a total of 500 GW of installed renewable energy capacity by 2030. For the building sector, there is a growing understanding to make buildings shift from energy consumers to become energy generators by integrating different renewable energy technologies.

In view of this, the Swiss Agency for Development and Cooperation (SDC) is supporting a project on the Integration of Renewable Energy in Buildings in India. This project works in coordination with SDC's other on-going project on building energy efficiency ([www.beepindia.org](http://www.beepindia.org)).

### OBJECTIVES

The broad objective of the project is to design and demonstrate building integrated renewable energy technologies for commercial and residential buildings suitable to the local conditions.

The specific objectives are:

- Building integrated renewable energy technologies are demonstrated for up-scaling in India.
- Research and monitoring methods to measure the performance of systems are adopted by the practitioners.
- Knowledge on performance monitoring methods is effectively delivered to targeted stakeholder groups.



Clean Energy & Energy Efficiency

### PROJECT AT A GLANCE

**Area:** Mitigation

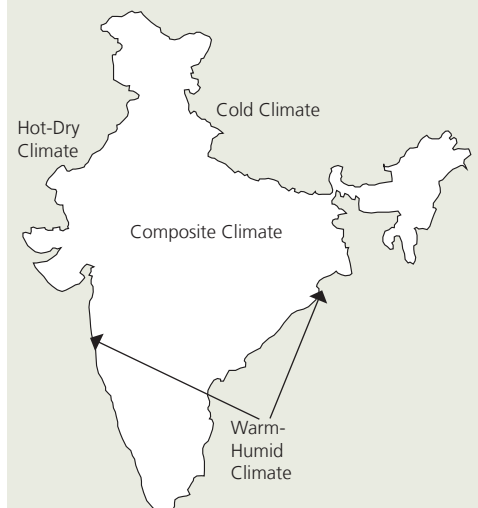
**Duration:** 2019 – 2023

**Budget:** CHF 950'000

#### Implementation Partners:

- International Institute for Energy Conservation (IIEC)
- Basel Agency for Sustainable Energy (BASE), Switzerland
- Environmental Design Solutions (EDS)
- Meghraj Capital Advisors Private Limited (MCAPL)

#### Geographic Focus:



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Agency for Development  
and Cooperation SDC



## KEY ACHIEVEMENTS

- Technology factsheets for 9 commercially viable RE technologies developed and disseminated to sector practitioners.
- Selection tool developed to support building owners and developers in shortlisting appropriate RE technologies.
- Technical assistance for integration of RE provided to a prominent developer on small wind turbine and solar hybrid system for residential buildings.
- Business models developed to support the integration of RE technologies in buildings.
- Four MoUs signed with architectural colleges for the development of RE-specific courses and the creation of a Centre for Renewable Energy to support faculty training and capacity building at School of Planning and Architecture Delhi.
- Technical support provided to the Government of Ladakh to implement heat pumps in hospitals/public health clinics.



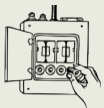
## PLANNED RESULTS

- Development of a guidebook for the integration of RE in buildings for industry professionals and other stakeholders.
- Automation of technology selection tool for quick assessment of RE technologies suitable for buildings.
- Demonstration of pilot projects for the integration of renewable energy technologies in buildings.
- Research and monitoring methods to measure the performance of identified RE technologies are developed, released and distributed.
- Training modules and capacity building programmes developed for professionals and building sector practitioners for adoption of research and monitoring methods.



All pictures @SDC

## IN NUMBERS



Buildings in India account for 33% of India's electricity consumption.



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## ABOUT SDC IN INDIA

The Swiss Agency for Development and Cooperation (SDC) has been a partner of India for more than 60 years. Since 2011, SDC's engagement focuses specifically on climate change adaptation and mitigation, and other environmental challenges. The office in India is part of SDC's strategic engagement on Climate, Disaster Risk Reduction and Environment. As part of its regional and global initiatives, SDC also has ongoing activities related to food systems, water and health in India.

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