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In cooperation with:
GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY

Promotion of Solar Water Pumps

Indo-German Energy Programme

Context

Access to adequate supply of water for irrigation has a profound impact not just on food security but also on the livelihood of farmers in India. While 70 per cent of the rural population is either directly or indirectly dependent on agriculture, only 55 per cent of the gross sown area in India is irrigated. The remaining area is rain fed. Of the 31.8 million irrigation pumps currently operating in India, 20.3 million are grid connected pumps while the other 8.8 million pumps run on diesel. The agriculture sector in India consumes 20-25 per cent of the total power demand and the electric pump sets consume electricity equivalent to 85 million tonnes of coal burned per annum, while the existing diesel pumps consume 4 billion litres per annum. Solar-powered irrigation pumps offer significant opportunities to facilitate irrigation access in an environmentally sustainable manner and can also play a key role in improving the livelihoods of farmers.

The solar irrigation pump sector in India received a significant push with the announcement of the *Pradhan Mantri Kisan Urja Suraksha Evam Utthaan Mahabhiyaan* (PM-KUSUM). Under the above-mentioned scheme, the Ministry of New and Renewable Energy (MNRE), Government of India, aims to add 34,800 megawatts (MW) of solar capacity by 2026, which includes the installation of 10,000 MW of solar capacity through the installation of small solar power plants of capacity up to 2 MW, the installation of 14 lakh standalone solar powered agriculture pumps and the solarisation of 35 lakh grid-connected agriculture pumps including feeder level solarisation. The government scheme has the provision of subsidising solar powered irrigation pumps for farmers with the option of selling the surplus energy to electricity distribution companies. PSWP project provides technical assistance for the smooth implementation of the scheme by creating enabling environment, which includes portal development for scheme monitoring, enabling financing ecosystem, policy recommendation and capacity building of concerned stakeholders.

Project name	Indo-German Energy Programme – Promotion of Solar Water Pumps (IGEN-PSWP)
Commissioned by	German Federal Ministry for Economic Cooperation and Development (BMZ)
Project region	India
Lead executing agency	Ministry for New and Renewable Energy (MNRE), Government of India
Duration	2018-2024

Objective

The project facilitates the acceleration in deployment and adoption of Decentralised Renewable Energy (DRE) technologies including solar water pumps for productive use in a sustainable manner in India.

L to R: Solar Water Pump

Photos: © Vipin Singh

Our Approach

The project follows a dual approach for the promotion of decentralised renewable energy systems, in particular solar water pumps. It focuses on facilitating the enabling policy framework to roll out the DRE technologies and support the upscaling of business and service delivery models in east and north-east India which are financially viable and environmentally sustainable. Moreover, the project also helps in strengthening the capacity of key institutional stakeholders, like financial institutions and agricultural extension workers, for increased deployment of relevant DRE technologies. The dual approach strengthens the existing government institutions to roll out relevant technologies while at the same time it creates an enabling policy environment and ensures climate smart and sensitive business models.

Results

The project is expected to yield multiple benefits at different levels:

- Creating an enabling climate sensitive policy environment for the promotion of solar water pumps, especially with view to the energy-water-food nexus.
- Support in digitalisation of monitoring the PM KUSUM implementation by developing portals in 13 states for 25 components and integrated all to the national portal.
- Assisting in the replication of successfully tested business, operator and service models for the efficient use of DRE systems, in particular solar water pumps.
- Supporting the capacity building of 2,800 employees of financial institutions to adapt financing instruments that place emphasis on the gender aspect in funding for solar pumps and other DRE systems.
- Capacity building of 1,000 agricultural extension workers for improved understanding on the use of solar pumps along with the potentials for the integration of micro-irrigation systems.

The project is providing technical assistance to the Ministry of New and Renewable Energy, Government of India. It cooperates very closely with farmer's cooperatives, the private sector, financial institutions, civil society organisations working with and for farmers as well as relevant state level government organisations.

These results are also in line with the overriding *Sustainable Development Goals (*SDGs), such as SDG 7 (ensure access to affordable, reliable, sustainable and modern energy for all) and SDG 13 (take urgent action to combat climate change and its impacts).

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On behalf of German Federal Ministry for Economic Cooperation and Development (BMZ)