

Business model for clean drinking water using solar RO in Indian industrial belt



Drinkable water is a precious commodity in many areas of India.

Background

The lack of clean, safe drinking water is one of the most acute problems in developing India. As the population shifts from farming towards working in factories, villages surrounding major towns are being absorbed into the industrial belt. Here, groundwater is showing increased presence of heavy metals and toxins, and water-borne diseases are rampant due to open sewage systems. Swajal began in 2011 as a survey project on the conditions of water in the towns of Noida and Ghaziabad.

Two villages in their surrounds, Khoda and Behrampur, were chosen for detailed study. People here pay up to 15 cents per glass of drinkable water. As a result, they limit their drinking to less than five glasses per day and/or resort to drinking unclean water. Swajal has now developed detailed plans for a commercial system based on a solar powered reverse osmosis (RO) water purifier, linked to a chain of small franchised centres that create clean drinking water - at a price affordable to the target strata - and sell it through a vending machine. Hardware manufacturers have been identified, and costs are partially subsidised by the Ministry of New and Renewable Energy (MNRE). The business model will help alleviate water contamination and at the same time, can provide a livelihood for many families.

Project purpose

To finalise the Swajal business model with five pilot water purification centres, to set up the central monitoring system supporting the business, and test it for widescale-up.



Main activities and outputs

- Set up five pilot centres
- Facilitate bank financing for the centre owners
- Train seven to eight people in operations and maintenance
- Develop a central monitoring system using cloud-based applications
- Test all software and hardware
- Undertake research for improving existing machinery and equipment
- Test the improved prototypes
- Continuously collect and analyse data for improving business model
- Conduct an awareness campaign on the importance of clean water

Expected impacts

- Five smoothly-running purification centres in place, producing up to 10,000 litres per day of clean water
- Detailed central monitoring system in place
- Reduction in waterborne diseases by as much as 80 %
- Reduced occurrence of heavy metal related sicknesses by 80 % -90 %
- Income generating livelihoods in place for five families
- Fully replicable business model tested and ready for up-scaling

Project Information

Location:

India

Duration:

2013–2014

Sector:

Renewable Energy

Thematic focus:

Business

Total project budget:

€ 189,779

REEEP grant:

€ 92,851

REEEP donor:

Norway

Co-funding:

€ 96,928 from UNDP-CE, MNRE and Saurya EnerTech

Implementing partner:

Saurya EnerTech