

# Profile: Claro Energy

*Increasing agricultural productivity in India with solar-powered mobile water pumps*

## Challenge

India's rural population highly depends on agriculture, which, given the erratic nature of the monsoon, depends largely on groundwater irrigation. Lacking access to grid power, many farmers in remote areas rely on diesel pumps. A less expensive form of power for irrigation would allow them to keep more of their earnings, with less damage to the environment.



## Innovation

Claro Energy ([www.claroenergy.in/](http://www.claroenergy.in/)) offers solar-powered water pumping solutions to meet irrigation and drinking water needs in off-grid rural areas. The 0.5–10 horsepower systems are suitable for all irrigation needs, including flood, sprinkler, and drip irrigation, as well as for lifting water from canals. The pumps can also be used to charge cellphones.

Although the initial outlay is high, solar pumps are much more economical than diesel pumps over the long term. They provide clean and continuous power and entail almost no operating cost. Subsidies from the central government and state governments cover 30–90 percent of the cost of the pumps. To cover the rest, Claro Energy offers several innovative payment models. Under the service model, a franchisee farmer owns a movable solar-powered pump and rents it to neighboring farmers. Under the rental-purchase model, farmers own the pumps after the completion of a lease period, typically 12 months.

## Impact

Claro Energy has installed more than 1,200 pumps since 2012, reaching more than 17,000 people in 12 states in India. It has brought more than 3,160 acres of land under irrigation and reduced almost 511 tons of carbon dioxide a year, according to the company. Having continuous access to irrigation improves farm productivity. It also allows farmers to grow cash crops with higher water requirements and higher value, such as sugar cane.

## Scaling Up

The main driver for the business are subsidies provided by the government. By adding innovative features to its product line to meet specific rural requirements and consumer preferences, Claro Energy has capitalized on these subsidies, experiencing rapid growth since its inception. In the near future, it plans to expand its operations to Bangladesh, Nepal, and some African countries.

A key bottleneck is financing. A solar pump costs more than microfinance institutions generally finance, and commercial banks and other lending institutions are often unwilling to lend because the solar pumps are not perceived as sufficient collateral. To address the problem, Claro Energy has been raising the awareness of the benefits of solar pumps among the banking community, through workshops and seminars, to increase the credit availability.

Claro Energy faces high working capital requirements, as most payments are not received upfront. Attracting investment from private equity investors and venture capitalists is also difficult, because of the lack of track record of transactions in the off-grid energy industry. Banking and other lending institutions will have an important role to play in sustaining growth, particularly as subsidies may be phased out in India.