

# Impacts of Electrification with Renewable Energies on Local Economies: The Case of India's Rural Areas

## Executive Summary

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For India it is crucial to promote rural electrification to raise the well-being of the people in its rural areas, which have a larger number of population and households than its urban areas. In rural areas of India, two types of electrification are in progress. One is the electrification through connecting to conventional grid. The other is the electrification with renewable energies such as solar, biomass, hydro and so on. Many studies prove positive socio-economic impacts of the electrification with renewable energies in rural areas of developing countries including India. However, are there any significant characteristics in socio-economic impacts of the electrification with renewable energies? The interest of the study is particularly its impacts on local economies such as the creation of new businesses and jobs, agricultural and other productive activities, and household income. The study investigated quantitatively and qualitatively the impacts of two types of electrification on local economies by conducting the interview survey in two grid connected villages and two solar mini-grid villages in Sundarbans, State of West Bengal, India, and then compared these results in two types of villages to identify significant characteristics in the impacts on local economies in solar mini-grid villages compared with grid connected villages.

First of all, the study found that there are positive impacts of electrification on local economies regardless of the types of electrification. Regarding the significant characteristics in the impacts of solar mini-grid electrification on local economies, the study found that: first the share of the households whose primary occupation is small business is significantly larger in solar mini-grid villages than in grid connected villages; second the electricity is not used for agriculture in solar mini-grid villages because of the small capacity of solar power plants; and third an increase of household income after electrification is significantly larger in solar mini-grid villages than in grid connected villages. The study also found that the shares of households without access to electricity even after their villages were electrified are significantly large and furthermore they are much larger in solar mini-grid villages than in grid connected villages. The coexistence of electrified and unelectrified households in the electrified village must be a problematic issue that should be addressed. Nevertheless, the most important finding in the study is that solar energy is able to provide the required energy for development of local economies in the form of markets, powering the schools, health centers etc.