Analysis of life cycle of renewable energies in the Peruvian rural sector

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Funded by: Annual Contest of Research. Research vice-rector's Office
Involved institutions: Ministry of Energy

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Peru has reached a 78% electrification coefficient, but there is great inequality between urban and rural areas. While urban areas have reached a 90% ratio, Amazonian and Andean areas only have a 35% coefficient, despite those areas host the third of the Peruvian population (MINEM, 2008). This is how, through Law Nº 28749, the Peruvian State establishes the regulatory framework for the promotion and efficient and sustainable development of the electrification of isolated rural areas and country borders. This law sets to give priority to the development of renewable energy resources such as; solar, wind, geothermal, hydraulic and biomass for the development of rural electrification projects.

This research is part of the effort of the national Government to promote the use of alternative technologies which may give a sustainable solution to the rural Andean and Amazon sectors and aims to provide reliable information on associated emissions with the infrastructure and produced power generation from different renewable energy resources that supply rural areas in Peru. For this reason, the life-cycle assessment (LCA) is used, evaluating the environmental impacts associated with a product at all stages of their life cycle, including the acquisition of raw materials, production, use and final disposal.