



## EC10

## Electricity generation in small hydropower: Techno-economic and prospective benefits to communities in the northern parts of Thailand

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### Abstract

Thailand has many hydro resources for electricity generation. The Department of Alternative Energy Development and Efficiency (DEDE) reported that the on-grid capacity of hydropower in Thailand in 2013, reached 3,497 MW. Alternatively, the small-scale hydropower electricity facilities are a suitable in Thailand due to the shorter duration of construction and the ease of operations. The small-scale hydropower capacity reached 108.8 MW in 2013. The Alternative Energy Development Plan was initiated the target of installed capacity of renewable energy for electricity generation within the target in 2021 (AEDP 2012–2021), which involves the promotion of the use of alternative and renewable energy to replace of fossil fuels in 2021 at least with 25%. However, the revised AEDP plan in 2015 hoped that the total installed capacity of small hydropower (each of which an installed capacity within 10 MW) would be 376 MW in 2036. The water resources for small-scale electricity generation are mostly located in the northern parts of Thailand. This study investigates the cases of small-scale of hydro projects located especially in the northern parts of Thailand on the potentials of electricity generation and financial feasibility and social benefits in small communities. The co-benefits of renewable energy development replacing fossil energy including annual carbon dioxide reduction and other benefits such as increasing of jobs for small communities, and also protecting the environment in Thailand.

**Keywords:** small hydro electricity generation, water resources development, sustainable societies, social benefits, small hydro feed-in tariffs

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