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# RENEWABLE ENERGY FOR POWER SUPPLY IN REMOTE AREAS

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**A**t present, more than 1.3 billion peoples worldwide still lack access to grid electricity. Most of them live in remote areas (islands, villages, deserts), and thus grid extension to such areas is both uneconomical and technically difficult. Fortunately, such areas are usually rich in renewable energy (RE) resources, thus making it worthwhile to explore local available RE resources with the objective of producing much needed electricity. The aim of this study is to investigate the options of power supply and energy storage for remote areas. One remote inhabited island of Hong Kong is taken as a test site for the proposed RE systems and storage technologies, including system development, mathematical modelling, simulation, optimization, techno-economic evaluation, and sensitivity analysis. The operational performance of a real solar-battery system on the example island was evaluated. It is believed that the findings can provide a good reference for the selection of suitable RE and energy storage technologies, and the methodology presented can also be viewed as a starting point for planning and designing RE systems for remote communities around the world.

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