

In this paper, a reliability-constrained planning model for the Antarctic electricity-heat integrated energy system is proposed, thus the optimal allocation of the wind turbines, photovoltaic, diesel engine, battery storage system, and Hydrogen storage system are obtained.

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Environmental Protection to the Antarctic Treaty, and through the Council of Managers of National Antarctic Programs have identified various practical initiatives, including the application of alternative energy, to implement the principles of the Protocol. The main constraints in the implementation of alternative energy systems in Antarctica are:

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This study presents a techno-economic analysis for implementation of a hybrid renewable energy system at the South Pole in Antarctica, which currently hosts several high-energy physics experiments with nontrivial power needs.

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Antarctica continuously and autonomously throughout the year. o One of the earliest experiences of energy efficiency and renewable energy in Antarctica was the pilot alternative energy system used at Greenpeace's World Park base operated in Ross Island between 1987 and 1992.

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