

ABSTRACT

This research was motivated by the emergence of the problem of limited electrical energy required people who play in the great outdoors. Lack of energy caused by the absence of adequate electricity generating electrical energy requirement of the great outdoors is very important because of the open nature it requires a communication tool or a tool of directions that takes a lot of power.

The importance of communication and GPS in outdoor activities is important because it acts as a communication tool to share information in an emergency or unusual circumstances.

The tools exist today that help is power bank, but there are shortcomings such as limited stored energy and power requirements that exceed the power capacity of the banks themselves. As for power generation such as solar panels. But there are also drawbacks, namely natural conditions such as rain, overcast, day or night.