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## **Abstract**

Reducing part of the energy consumption generated by servers in Data Centers, through the cogeneration, establishing a new application of clean and renewable energy generation. Much of the electrical consumption within Data Centers occurs above all due to the need to cool these rooms. It is intended therefore to present a change of this model by harnessing this heat, generating energy and for this reducing the consumption of the electricity grid. In addition, it is presented a mechanism which allows controlling the temperature of the processor, using heat sink and motor Stirling. The research is theoretical in essence and is applied based on the collection of heat by convection by the coolant normally used for the liquid cooling. Besides it will be numerically verified that the temperature difference between the heat generated by the electronic components and the refrigerant can be used as the working force of the Stirling engine which in its turn is connected to an electric generator. This work does not aim to exhaust the possibilities of the research on its aspect, rather it aims to disseminate knowledge and introduce the theme.

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### **Index Terms**

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### **Keywords**

Energy Consumption, Data Centers, Heat Sink, Motor Stirling, Electric Generator.