

ABSTRACT

In an effort to develop environmentally friendly and sustainable energy sources, steam power plants have become one of the most promising technologies. This study focuses on a quantitative analysis of the performance of a steam power plant prototype by measuring key technical parameters, namely output power (P), voltage (V), and electric current (I). The calculation of electrical power using the basic formula $P=V \times I$ forms the basis for evaluating the performance of this device. In addition, energy conversion efficiency is analyzed by comparing the electrical energy produced with the input energy from steam to measure the effectiveness of the energy conversion process. This study also identifies important factors that affect the performance of the device, such as steam pressure and temperature, mechanical component conditions, and energy losses during the conversion process. This approach combines technical and operational aspects comprehensively, aiming to provide practical guidance for improving performance and developing a more optimal steam power generator prototype in the future