



## **Biomass generator to reduce the gas emission and operation cost in a grid-connected renewable energy systems**

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**Abstract :** This paper shows how a biomass systems can reduce the emissions and the operational cost in an energy supply system. The main objective of this paper is to boost the use of biomass-based systems with the final purpose of reduce the global gas emissions using renewable energies. The systems has been simulated in HOMER Pro ® software which can estimate the operational costs and the emissions on energy systems using renewable energies. The system is compounded by an energy grid, a biogas generator with an output power of 3 kW, an inverter with a max. Output power of 1.15 kW and a photovoltaic system with a max. Output power of 0.29 kW to supply a scaled annual average of 33.64 kWh/d. The data values obtained reveal that the biomass generator reduce to 20.34 % annual operation cost, 17.55 % of the total operation cost and a 38 % of the total emissions.

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