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Research Article

# Optimal power flow of wind-solar-EV-based combined heat and power for economic power generation and environment sustainability

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## ABSTRACT

The primary focus of this paper is the analysis of the optimal power flow (OPF) of the combined heat and power economic dispatch (CHPED) problem integrated with renewable sources and performed using a new practical approach based on the chaotic oppositional sine cosine algorithm (SCA) (COSCA). The main contribution of the proposed work is to determine the OPF for the CHP-based system for economic dispatch. Secondly, renewable energy sources such as wind-solar-EVs are integrated with the system for economic power generation and environmental sustainability. As