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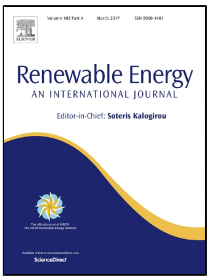

Performance analysis of a solar chimney power plant for rural areas in Nigeria

Chiemeka Onyeka Okoye, Onur Taylan

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Highlights

SCPP is proposed as a sustainable electricity generation alternative in Nigeria.

Performance of SCPP is simulated using hourly weather data of seven selected regions.

LCOE results emphasize the viability of SCPP compared to common diesel generators.

Annual carbon mitigation ranges from 162 to 190 tons in the selected regions.

Sustainability assessment shows great socio-economic and environmental benefits.