Theoretical Model Investigation of Solar Chimney Power Plant

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Abstract

Solar chimneys present a promising renewable energy solution, especially in regions with abundant solar resources like Jordan. They can harness solar energy for electricity generation and water desalination, showcasing their potential as a sustainable energy system. The integration of solar chimneys with desalination systems further emphasizes their ability to address both energy and water scarcity issues effectively.

Solar chimneys help reduce dependence on fossil fuels, lowering greenhouse gas emissions and mitigating climate change. They also foster local economic development by creating jobs in the construction, operation, and maintenance sectors, especially in rural areas.

Jordan's high solar radiation levels and vast desert areas make it an ideal location for solar chimney projects. However, careful adherence to seismic design codes and environmental impact assessments is necessary to ensure resilience and minimize ecological disruption.

Keywords

Photovoltaic; Concentrated system; CPV/T; Cooling system; Solar chimneys.