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# Sustainable Energy Using Quantum Computing

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**Abstract:** The use of quantum computing in sustainable energy is a rapidly emerging field that has the potential to transform the way we generate, store, and distribute energy. Quantum computers can perform complex calculations and simulations that are beyond the capabilities of traditional computers, enabling researchers to optimize energy system design, develop more efficient energy storage solutions, and unlock new insights into materials behaviour. By leveraging the power of quantum computing, we can create a more sustainable future by reducing our dependence on fossil fuels and tackling climate change. This research paper explores the current state of quantum computing in sustainable energy and the potential implications for the energy sector.

Keywords: Carbon Capture, Climate Change, Quantum Computing, Renewable Energy, Smart Grid.

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