

Review of: "Internet of Things in Smart Grid: A Comprehensive Review of Opportunities, Trends, and Challenges"

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Potential competing interests: No potential competing interests to declare.

Strengths:

Comprehensive Coverage: The paper provides an extensive overview of the opportunities and challenges associated with IoT in smart grids, addressing various sectors such as agriculture, transportation, healthcare, and energy management. This breadth makes it a valuable resource for a wide audience.

Current Trends and Future Directions: It effectively highlights recent trends in IoT, particularly in the context of smart cities, homes, and grids, which showcases its relevance to ongoing technological advancements.

Detailed Applications: The application of IoT in different sectors, such as waste management and energy monitoring, is well explained, with clear examples. This demonstrates the versatility and potential of IoT technologies across multiple industries.

Challenges and Opportunities: The paper identifies key challenges such as cybersecurity, data management, energy supply, and scalability. It also proposes solutions, which gives it a forward-thinking and solution-oriented approach.

Weaknesses:

Lack of Specific Case Studies: Although the paper mentions real-world applications, the absence of specific case studies or examples that detail the practical implementation of IoT in smart grids limits its practical applicability.

Overly Broad Scope: While the broad scope is a strength, it can also dilute the focus of the paper. A deeper dive into fewer sectors, with more technical depth, could have added more value for researchers looking for detailed insights.

Limited Focus on Security Solutions: Although the paper discusses cybersecurity as a significant challenge, the proposed solutions, such as deep learning methods, could have been elaborated further with more specific algorithms or frameworks that are currently being explored in this space.

Recommendations for Improvement:

Including more detailed case studies or real-life implementations of IoT in smart grids would enhance the paper's practical relevance.

A section dedicated to the comparative analysis of various IoT technologies or frameworks could add depth to the

discussion.

Providing more specific examples of how cybersecurity challenges are being tackled in real-world applications would strengthen the paper's utility for practitioners.

Overall, the paper offers a solid foundation on the intersection of IoT and smart grid technologies but could benefit from more focused technical discussions and practical examples.