# Article information:

Improving smart grid security through 5G enabled IoT and edge computing - Borgaonkar - 2021 - Concurrency and Computation: Practice and Experience - Wiley Online Library  
<https://onlinelibrary.wiley.com/doi/full/10.1002/cpe.6466>

# Article summary:

1. The use of IoT devices in smart grid infrastructure has benefits but also brings security challenges due to the diverse set of standards and trade-offs between cost and performance.

2. 5G networks can potentially solve some smart grid challenges by providing low latency, high speed, and improved reliability for IoT connectivity.

3. The article presents a smart grid use case for voltage regulation, identifies key security requirements, and discusses how 5G technology can benefit security while also introducing potential risks.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article "Improving smart grid security through 5G enabled IoT and edge computing" provides an overview of the benefits and challenges of using IoT devices in the smart grid infrastructure. The authors argue that 5G networks can potentially solve some of the challenges faced by utility companies, such as connecting a vast number of sensors and delivering ubiquitous coverage with high security and reliability. However, the article lacks a critical analysis of potential risks associated with 5G-enabled IoT devices in the smart grid infrastructure.

The article presents a smart grid use case that highlights the benefits of using 5G for communication with connected IoT devices. The use case concerns voltage regulation, which is important to integrate Distributed Energy Resources (DERs) into the electric power grid at a larger scale. The authors present a threat model related to the use case that highlights important security challenges but do not provide evidence or data to support their claims.

The article discusses potential new threats that are introduced from the 5G infrastructure itself but does not explore counterarguments or present both sides equally. The authors only focus on how 5G connectivity can support the use case and present how 5G network security features can support the needs of this smart grid use case without considering potential risks associated with these features.

Overall, while the article provides useful insights into how 5G technology can benefit security in IoT-based smart grids, it lacks critical analysis and presents a one-sided view without exploring potential risks associated with this technology.

# Topics for further research:

* Risks associated with 5G-enabled IoT devices in smart grid infrastructure
* Security challenges of integrating Distributed Energy Resources (DERs) into the electric power grid
* Counterarguments to the benefits of 5G connectivity in smart grid infrastructure
* Potential vulnerabilities of 5G network security features
* Cybersecurity threats to smart grid infrastructure
* Best practices for securing IoT devices in smart grid infrastructure

# Report location:

<https://www.fullpicture.app/item/dd5e8f7cda60e3f3824200e5f7978391>