

Assignment: The Secure Smart Grid

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Objectives of this assignment

- To provide you with the opportunity to understand the motivations behind and directions for secure smart grid development.

Please note that this is an *individual* project and each person can talk to others, but must ultimately do their own research and conduct write their own assignment report.

The Smart Grid

As discussed, the smart grid can be envisioned as the marriage of information technology with electricity infrastructure. There are many motivations for the movement towards a more consumer-centric power system and as discussed many visions for the smart grid exist. In this assignment you are asked to read the following paper:

M. Amin, "Energy Infrastructure Defense Systems," *Proceedings of the IEEE*, vol. 93, no. 5, pp. 861-875, May 2005.

URL: http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=1428003&tag=1

and write a report answering the following questions.

1. What are the main motivations for development of a smarter grid?
2. Explain the three types of attacks possible on a power system?
3. Discuss "The Dilemma" highlighted in Section VI of the paper citing both the technology development necessary and the associated actions needed to formulate a security strategy.
4. How does human presence affect security?
5. What are the challenges that the paper cites for development of a secure smart grid?