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The Case for Simplicity



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In my [comments](#) on the TIR Jeremy Rifkin report I repeated many times that in my opinion this report suggests a devilishly complex future, with millions of digital gadgets being interconnected and working to control and manage nearly every aspect of our life, amongst them the electrical grid. One of the most obvious problems is the vulnerability of the coming “smart” electrical grid and its feeders against malicious attacks. The last years we have seen big attacks deploying rather successfully: on December 2015, the Ukrainian power grid was brought down (read this [report](#)), possibly by Russian hackers; USA Today reported ([link](#)) that the USA grid is under nearly continuous attack. The website of “Transmission & Distribution World” writes in April 2016 on a dramatic rise in successful cyber attacks ([link](#)). 86% of the security experts at a RSA conference said that cyber attacks could cause physical damage to the infrastructure.

A group of 4 senators introduced a bill in January 2016 suggesting to go “retro” in selected components of the electrical grid to isolate it from malicious attacks ([link](#)).

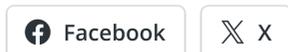
The Center for Strategic and International Studies (CSIS) published in October an extremely interesting article by Michael Assante and al. titled “[The Case for Simplicity in Energy Infrastructure](#)”. The text clashes definitively with the naive all-digital optimism of the Rifkin paper. Let me just cite a few sentences:

- » *“Mix in a whorl of oversight organizations, legislation, regulatory frameworks, standards, and continually changing standards, and we’ve baked ourselves a layer cake of complexity and abstraction that no one in their right mind would want”*
- » *“Complexity is not a desirable attribute”*
- » *“There is a point of diminishing returns where more energy is required to sustain the complexity than the complex system provides in benefits”*

They suggest not to un-digitize everything (which clearly is not feasible), but to introduce “attack surface interruption zones” which use non-digital, analog technologies to block a cyber attack. So instead of infiltrating every component of the grid with digitalization, well chosen islands using “retro” technologies (as analog relays) and human operators would avoid a break down of the whole attacked grid.

The best strategy in the search for resilience and stability of the electrical grid against attacks might be in this sentence: **“Don’t over digitize!”**

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