

Ubiquity of Digitalization and Risks of Interdependent Critical Infrastructures

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8) External researcher(s): no entry

9) Funding source(s):

- Stiftungen

10) Partner organizations: no entry

11) Short Summary: The project examines the electricity power system as a specific critical infrastructure linked to and interdependent with, other vital systems.

12) Keywords: Engineering Sciences, Technology

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13) Project description:

Goal

The project examines the electricity power system as a specific critical infrastructure linked to and interdependent with, other vital systems. It identifies weaknesses and vulnerabilities within the electric power system, its interdependencies; will recommend risk governance strategies by which all owners, operators, other decision makers can better prevent cascading blackouts and other failures, and sustain the operation of other vital services in the event of a blackout.

Methodology

It addresses technical and socio-economic perspectives, linkages between them, and will investigate the benefits and risks of the increasing use within such system of open access information and communication (IC) systems. The work is based on accessing and compiling existing expert knowledge and generating new information when gaps in current knowledge are apparent.

Results

This project's *raison d'être* is to support all those responsible for the ownership and operation of the electric power system in their efforts to ensure its operational purpose - the continuous supply of electricity. There are individuals and organisations who share this responsibility, from governments (as owners and operators in many countries and as the bodies with ultimate responsibility for energy policy in all), companies (as owners and operators and as the primary source of investment), and regulators (whose influence can encourage/hinder certain key behaviours, including investment) to users, especially those of other critical infrastructures for which electricity is a vital input. We intend to ensure all relevant decision makers, both at national and international levels, are made aware of the project's main findings, and have access to project's deliverables. A 'White Book' in three volumes, each for one of three geographic regions: Europe (publication, early 2005), the United States (publication, end 2005), and a developing country or region (publication, early 2006). 'White Book's will follow a common approach (e.g. description of the electric power system, from both technical and socio-economic perspectives, its interdependencies, and linkages to other critical infrastructures; assessment of the role of conventional and advanced IC systems and control, both in the electric power system and in its interactions with other dependent critical infrastructures (e.g. rail transportation systems); exploration of the weaknesses and vulnerabilities of the system, also from both technical and socio-economic perspectives, and of the benefits of, and additional vulnerabilities presented by, digitalisation; description of the governance system by which the risks to the electric power system are managed – owners, operators, regulators, etc). A set of generic guidelines/recommendations for the establishment of an effective risk governance strategy for the electric power system (publication, end 2006) is expected.

14) Popular description:

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15) Graphics: no entry

16) Publications: no entry

17) Links to important web pages: no entry