

# Cybersecurity Risk Assessment for Smart Grids: Moving Forward

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# CEN-CENELEC-ETSI M/490

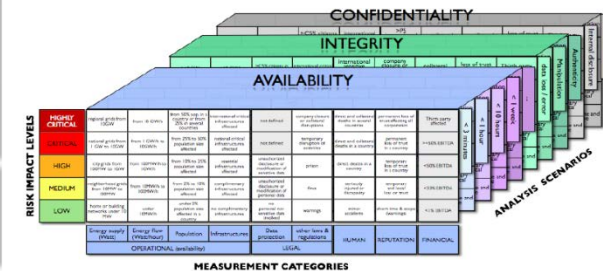
## Smart Grid Information Security

- Perform risk assessment of information assets based on smart grid use cases
- Security Level (SGIS-SL)
- Risk Impact Level (SGIS-RIL)
- $SGIS-SL = f(SGIS-RIL, p)$

Security Level	Security Level Name	Europeans Grid Stability Scenario Security Level Examples
5	Highly Critical	Assets whose disruption could lead to a power loss above 10 GW Pan European Incident
4	Critical	Assets whose disruption could lead to a power loss from above 1 GW to 10 GW European / Country Incident
3	High	Assets whose disruption could lead to a power loss from above 100 MW to 1 GW Country / Regional Incident
2	Medium	Assets whose disruption could lead to a power loss from 1 MW to 100 MW Regional / Town Incident
1	Low	Assets whose disruption could lead to a power loss under 1 MW Town / Neighborhood Incident

RISK IMPACT LEVELS	HIGHLY CRITICAL	regional grids from 10GW	from 10 GW/h	from 50% population in a country or from 25% in several countries	international critical infrastructures affected	not defined	company closure or collateral disruptions	direct and collateral deaths	permanent loss of trust affecting all corporation	>50% EBITDA
	CRITICAL	national grids from 1 GW to 10GW	from 1 GW/h to 10GW/h	from 25% to 50% population size affected	national critical infrastructures affected	not defined	temporary disruption of activities	collateral deaths	permanent loss of trust in a country	<50% EBITDA
	HIGH	city grids from 100MW to 1GW	from 100MW/h to 1GW/h	from 10% to 25% population size affected	essential infrastructures affected	unauthorized disclosure or modification of sensitive data	finances from 10% of EBITDA	direct deaths	temporary loss of trust in a country	<33% EBITDA
	MEDIUM	neighborhood grids from 1MW to 100MW	from 1MW/h to 100MW/h	from 2% to 10% population size affected	complimentary infrastructures affected	unauthorized disclosure or modification of personal data	finances up to 10% of EBITDA	seriously injured or disability	temporary and local loss or trust	<10% EBITDA
	LOW	home or building networks under 1 MW	under 1MW/h	under 2% population size affected in a country	no complimentary infrastructures	no personal nor sensitive data involved	warnings	minor accidents	short time & scope (warnings)	<1% EBITDA
		Energy supply (Watt)	Energy flow (Watt/hour)	Population	Infrastructures	Data protection	other laws & regulations	HUMAN	REPUTATION	FINANCIAL
		OPERATIONAL (availability)			LEGAL					

**MEASUREMENT CATEGORIES**



# Challenges Revisited

1. Managing **safety and security** risks
  2. Analysing **cyber-physical** risks
  3. Understanding risks to **legacy systems**
  4. **Complex organizational dependencies**
  5. Understanding **cascading effects**
- Given the SGIS approach is recommended by EU M/490 for risk assessment, how do we move forward to address our challenges?

# Breakout session



- Split into groups of three, appoint a spokesperson
- Questions to address
  - Prioritisation of the challenges?
  - Which stakeholders should drive finding a solution?
- What might be an overall strategy for addressing these challenges?
  - Can existing solutions be used / integrated?
  - Where is substantial future research required?
- Present your results to the group

