

# Protecting Energy Networks from Natural and Man-Made Disasters

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Energy Community Secretariat | 27<sup>th</sup> OSCE Economic and Environmental Forum, 27-28 May 2019, Bratislava

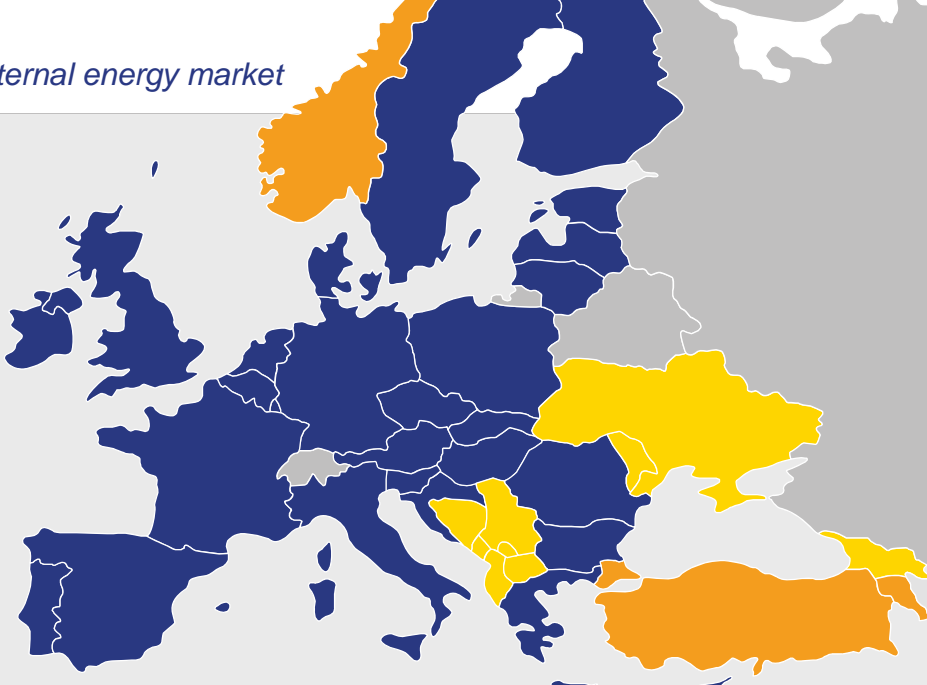
## Energy Community - Extending the EU internal energy market

Domain  
**South East Europe and the Black Sea Region**

Mission  
**Creating a regulatory framework to increase:**

- competition in the energy markets
- security of supply
- investments in infrastructure
- environment protection

Method  
Through the **Rule of Law**



■ European Union ■ Contracting Parties ■ Observers

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## Disasters and their impact on energy security

### Hazards and threats

- Direct impact:
  - ✓ disruption of access to energy (sources);
  - ✓ pollution;
  - ✓ loss of human lives;
  - ✓ other indirect impacts.

**Risks** – concentrated on facilities and infrastructure – possible to tackle with direct and indirect responses (preparedness vs restructuring the energy networks)



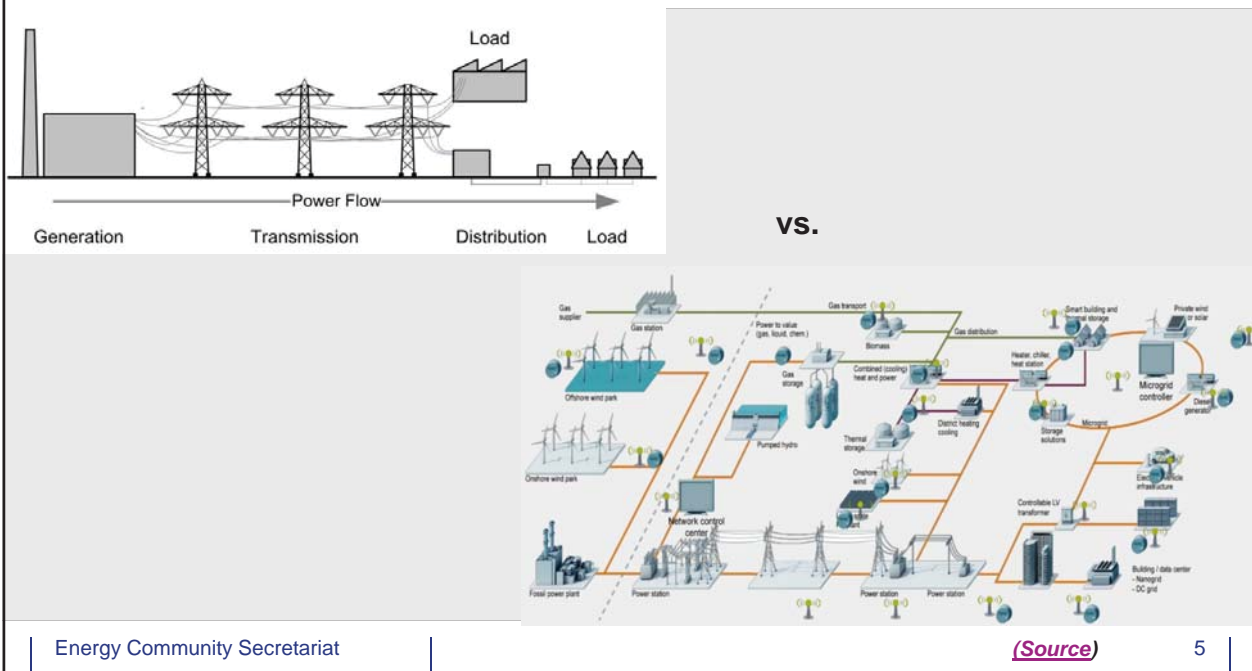
## Disasters and their impact on energy security

### Mitigation/prevention strategies

*Aim: to reduce the likelihood or the impact of the accident*

- Direct: tackles how to “handle” the situation in case an accident happens
  - ✓ Risk Assessments, Preventive and Emergency Plans, Business Continuity measures;
  - ✓ Safety standards, protocols;
  - ✓ Backup capacities, N-1 etc.
- Indirect: focuses on how to diminish the risk, how to avoid that the event can have devastating effects
  - ✓ Diversification of supplies (source, route, counterparty etc.);
  - ✓ Decentralized production (mostly relevant for electricity);
  - ✓ Meshed network;
  - ✓ Functioning market with multiple market players.

## Disasters and their impact on energy security



## New technologies – opportunities and challenges

### Going digital

*The quest to avoid “traditional” disasters brought about new threats*

- Complex systems, automated processes, less human control, no “key actor” to do damage control;
- High-level of connectivity:
  - Expanding scope of objects connected to the Net;
  - Smart meters, smart homes;
  - Electromobility;
  - IT ~ OT.
- Hardware producers not yet prepared to provide state-of-the-art secure solutions;
- Lack of awareness – human negligence.

## Increasing resilience

Only a coordinated action can be effective

### Stocktaking

Mapping currently existing measures, standards, cooperation, projects and weaknesses.

### Analysis

Legal and regulatory gaps, divergence in national standards and procedures. Assessment of necessary minimum measures to enhance security.

### Recommendation

For a common minimum framework, joint bodies, cross-border cooperation mechanisms, education and training programmes, aligned certification schemes and standards and a roadmap for implementation

Joint action

## Keep up the work

- Overall higher level of preparedness vis-à-vis “traditional” threats – BUT!;
- These threats are evolving / transforming, which increases exposure (climate related threats);
- New hazards appear (mainly due to digitalization);
- Must continue addressing new challenges.



NASA MERRA-2 February 2019 analysis  
Andrej Flis (@Recretos) Severe Weather Europe

