



# Risk Preparedness

TAIEX Regional Workshop on transposition of EU electricity legislation

# Risk Preparedness Regulation

EU 2019/941

- rules for the cooperation between Member States
- prevent, prepare for, and manage electricity crises
- common provisions for risk assessment, risk preparedness plans, managing electricity crises, evaluation and monitoring

## Member State tasks:

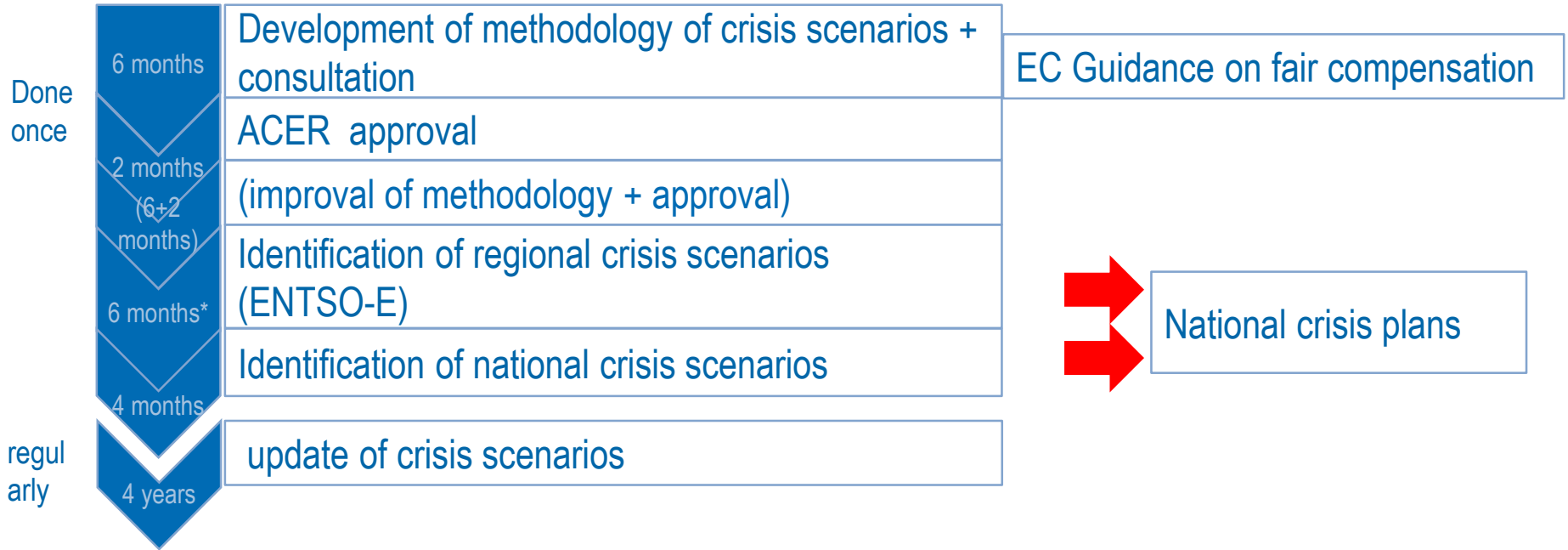
- define competent authority
- establish a risk-preparedness plan
  - based on the regional and national electricity crisis scenarios
  - measures planned or taken to prevent, prepare for and mitigate electricity crises

## Two methodologies to be developed by ENTSO-E:

- methodology for identifying regional electricity crisis scenarios
- methodology for short-term and seasonal adequacy assessment



# Risk Preparedness Regulation (RPR)- crisis scenarios



\* Finalised September 2021

## National crisis plans

\*during the development phase of the national crisis plans regional coordination should already take place.



# Regional crisis scenarios

Identified by ENTSO-E

- 30+ crisis scenarios identified

Multiple failures caused by extreme weather
Cold Spell
Dry period
Precipitation and flooding
Heatwave
Winter Incident
Storm
Forest fire
Pandemic
Volcanic eruption
Earthquake
Solar Storm

Power system control mechanism complexity
Local technical failure
Human error
Serial equipment failure
Simultaneous multiple failures
Loss of ICT systems for real-time operation
Unforeseen interaction of energy market rules
Fossil fuel shortage
Nuclear fuel shortage

Cyberattack - entities connected to electrical grid
Cyberattack - entities not connected to electrical grid
Physical attack - critical assets
Physical attack - control centres
Threat to key employees
Insider attack
Industrial / nuclear accident
Strike, riots, industrial action
Unwanted power flows
Unusually big RES forecast errors

# AT highest rated scenarios

(arbitrary ordering)

## Cyber Attack

- Attack on infrastructure of entities physically connected to the grid

## Storm

- Exceptionally strong winds (average > 150 km/h, gusts > 200km/h)

## Winter incident

- Multiple failures due to snow & ice

## Multiple failures caused by extreme weather

- e.g. heatwave

## Pandemic

- Staff shortages for TSO, DSO, power plants

## Loss of ICT tools or telecommunication infrastructure

- e.g. loss or unavailability of grid security calculations or market tools

## Simultaneous failure of power system primary elements

- e.g. fault on HVDC cable and substation

## Heavy precipitation and flooding

- Flooding of substations and powerplants

## Large impact industrial or nuclear accident

- Emission of radioactive waste or toxic material

## Complexity of power system control mechanism

- High dependencies of complex systems leading to cascading failures

## Accidental violation of n-1 criterion

- e.g. human error having a cascading effect

- Clusters of categories
  - Outages/Asset failures
  - Lack of resources
  - Human made threats/malicious acts
  - Natural hazards/Force major
  - Technical complexity
- Technical complexity not considered in AT scenarios
  - Situations occur on a frequent basis
  - Not classified as crisis scenario

Identified national crisis scenarios:

- 22

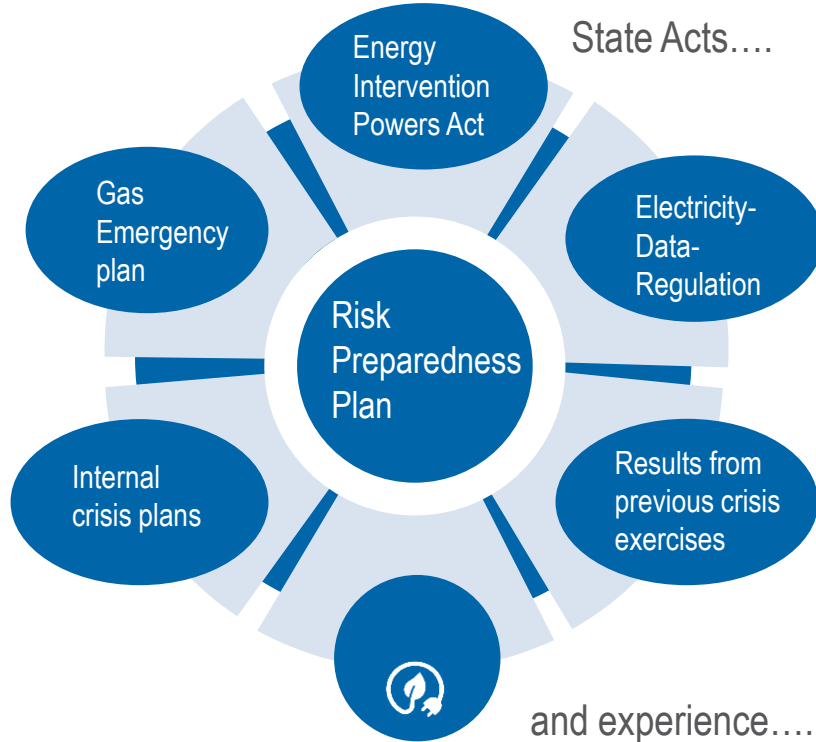
Competent Authority:

- Federal Minister for Climate Action, Environment, Energy, Mobility, Innovation and Technology (no tasks delegated)

Stakeholders consulted:

- TSOs
- DSOs (110kV directly connected to a TSO)
- Oesterreichs Energie – representing the interests of the Austrian e-business; Austrian Chamber of Commerce; Industry Association
- Regulatory Authority





# 3 Energy intervention measures

Measures to follow one another or overlap as necessary.

Save Energy (§ 14 Zi 2 EnLG 2012)

1

Order on the usage of electricity for industries  
(§ 17 EnLG 2012)

2

Allocation of quota to federal states  
(§ 14 Zi 7 iVm § 21 EnLG 2012)

3

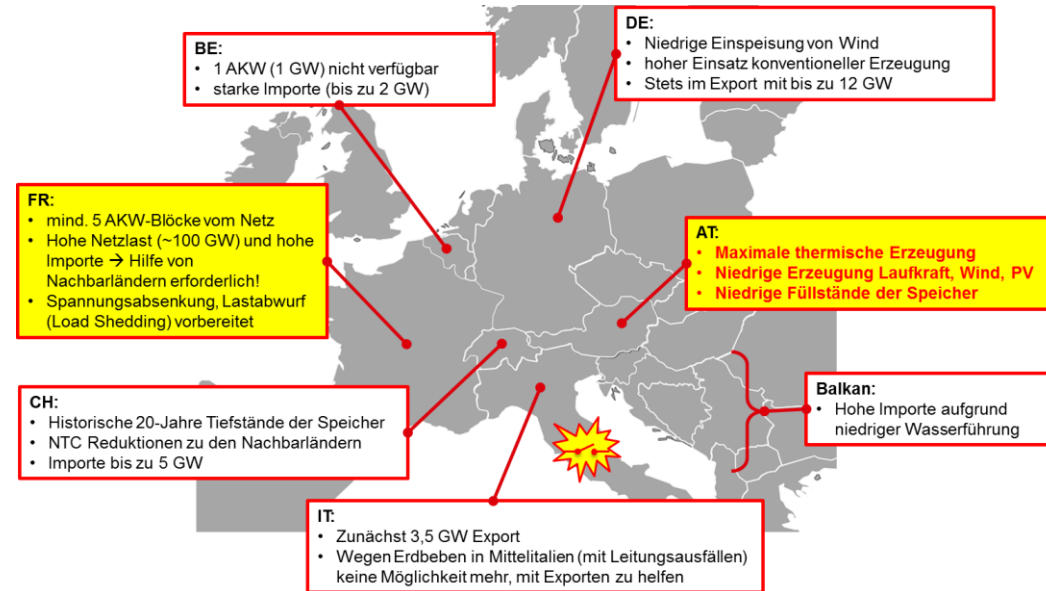


# Scenery

- Date: 18. – 19. April 2018
- Defined date: 16. – 17. January 2019
- Duration: 1,5 Tage



- Based on the real tight grid situation in Europe in January 2017: long dry period, low temperature, high demand, high market prices, low wind and PV production, limited thermal production
- The situation escalated gradually
- European Scenario –
- Location played: Vienna





- Feedback from European Commission on all Risk Preparedness Plans
  - More focus on cross-border Measures
  - Update of Methodology for Crisis Scenario definition by ENTSO-E
- Always improving on all levels – in hope we will never need to activate those measures

