



# Energy transition= security of supply?

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ENTSO-E

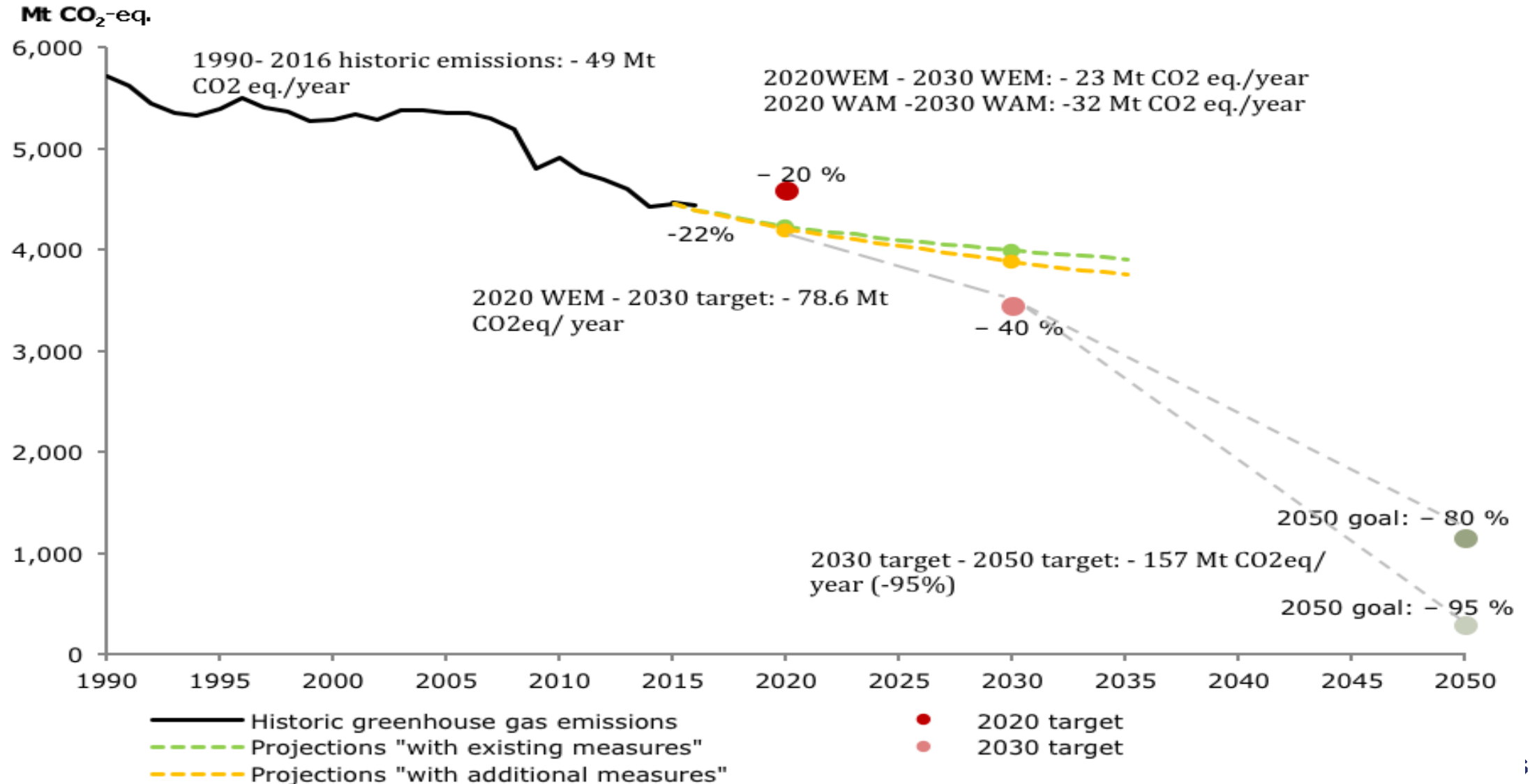
GMF Forum Energii 21 November 2018



# Three Key Messages

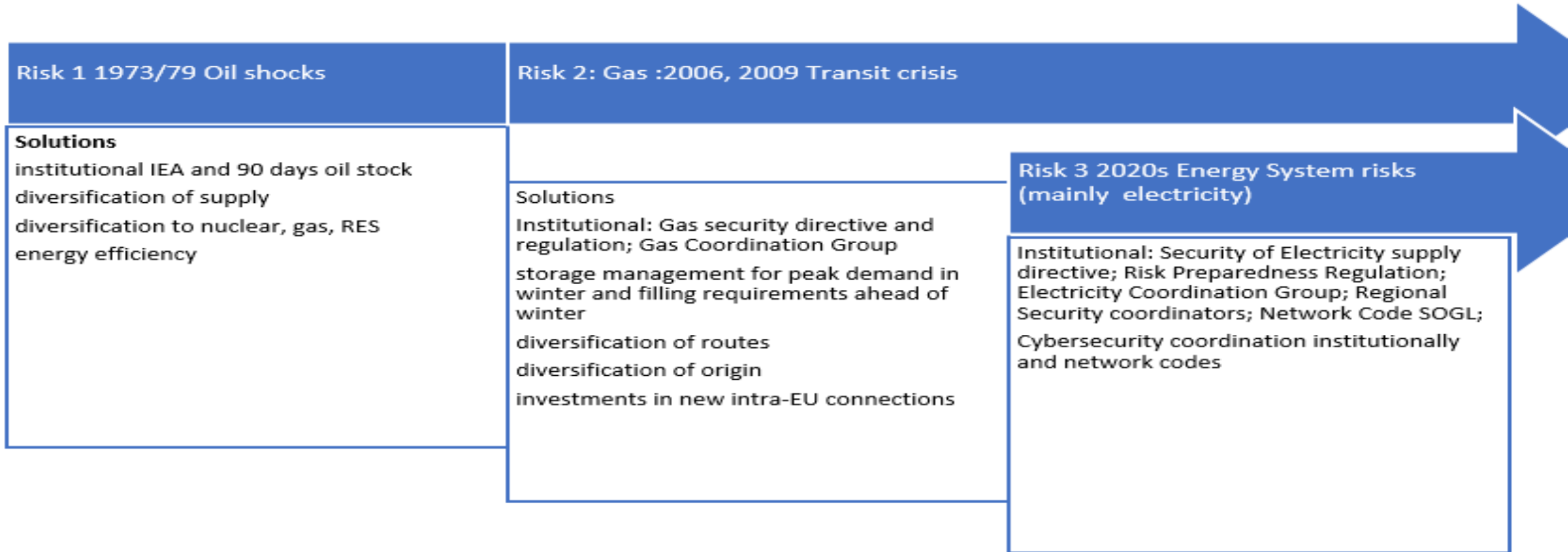
- 1** Security of supply risks are changing and require adaptation: new risks relate to electricity. Digitalization increases cyber security risks, while enables the 'one system approach'
- 2** Renewables or Variable Generation **are not a risk** for Security of Supply: need to put an end to an erroneous discussion
- 3** Solutions are: sector coupling, regional cooperation, digital and RD

# Where we are: EU trajectory GHG emissions

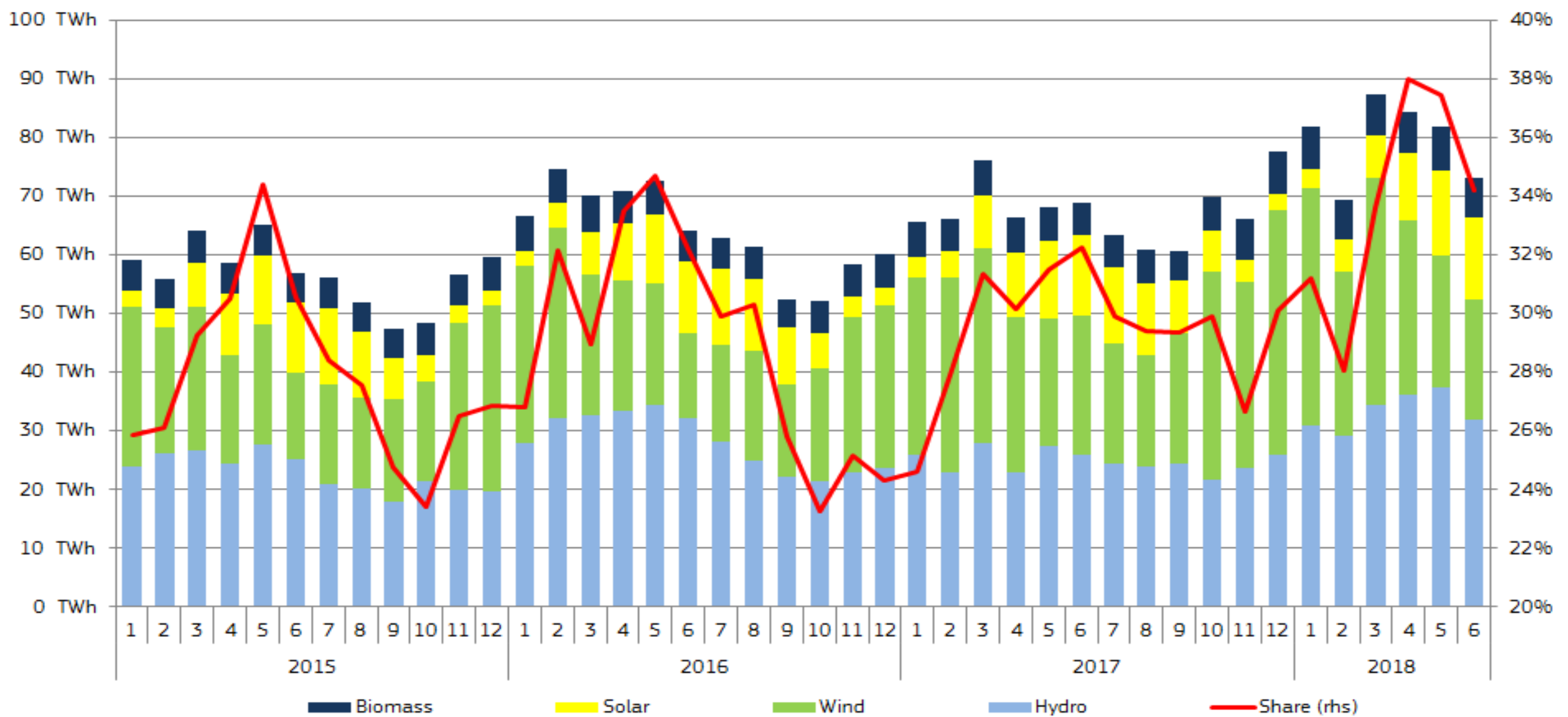


# 1 Security of supply Risks

Security-of-supply-risks:·priorities·shifting·from·oil·to·gas·to·power·and·corresponding·regulatory·solutions



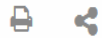
# 2 RES increase EU



# 2 Baseload Risks: Nuclear

ELECTRIC POWER — 15 Nov 2018 | 11:47 UTC — London

## French TSO flags nuclear supply risk mid-January to end-February



Author **Andreas Franke** ✉ **Anuradha Ramanathan** ✉  
Editor **James Leech** ✉  
Commodity **Electric Power**

### HIGHLIGHTS

Five reactors scheduled offline compared with three in Q1 2018

## Belgium faces winter blackouts amid nuclear reactor shutdowns

Emergency plans for homes, roads and industry as country loses 40% of power supply



SOLAR ECLIPSE MARCH 2015:

# THE SUCCESSFUL STRESS TEST OF EUROPE'S POWER GRID – MORE AHEAD

Policy Brief • 15 July 2015



On 20 March the European electricity grid passed with flying colours an unprecedented stress test. No one had experienced the effects on the grid of a near to total solar eclipse taking place on a mostly sunny weekday morning with about 90 gigawatts of solar power installed and highly concentrated in some regions.

**This was not just a Europe's first. It was a world's first.**

# MANAGING CRITICAL GRID SITUATIONS – SUCCESS & CHALLENGES

ENTSO-E REPORT OF THE JANUARY 2017 COLD SPELL  
MAY 2017



# 3 SECURE OPERATIONS WITH REGIONAL COOPERATION

## Regional Security Coordinators:

1. Capacity calculation
2. Security analysis
3. Common grid model
4. Adequacy forecast
5. Outage planning

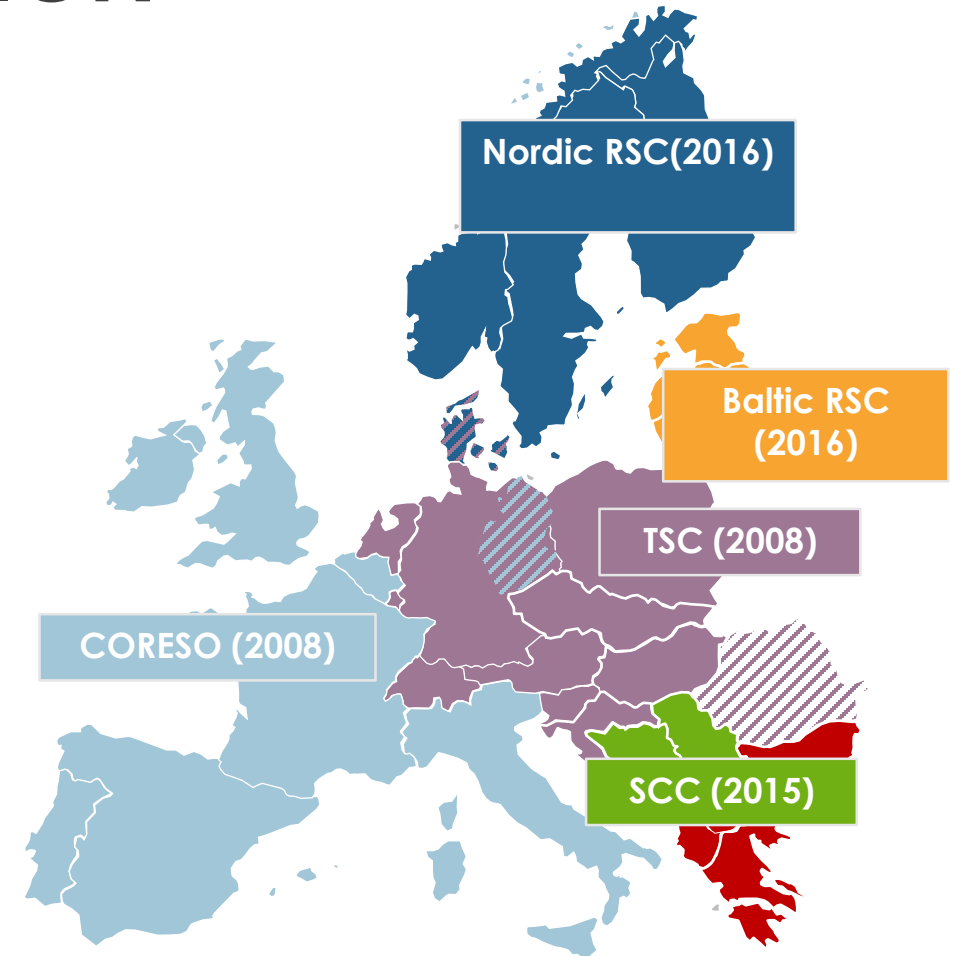
*partially operational  
in TSCNET and  
CORESO*

➔ Discovered 7 times more potentially critical situations CORESO in 2015 compared to 2014

➔ Mitigate critical grid situations

**4000** remedial actions proposed/year in CORESO

**130** multilateral remedial actions coordinated by TSCNET





# 3 Digital allows to deal with further complexity: towards the cyber-physical grid

## Facilitate the EU code deployment



Enabling more RES & demand response connections

Flow based Bidding zones review

Real-time Markets

TSO-DSO Flexibility Platforms

Enhanced Regional security coordinators

Capacity Calculations

New Emergency Restorations

## Increase Grid Transparency



Including links inside countries

## Foster cooperation at all levels

