

# Resource adequacy forecasts 2030 Under different scenarios

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# About ENTSO-E, an EU institution with legal mandates



41 TSOs  
from 34 countries



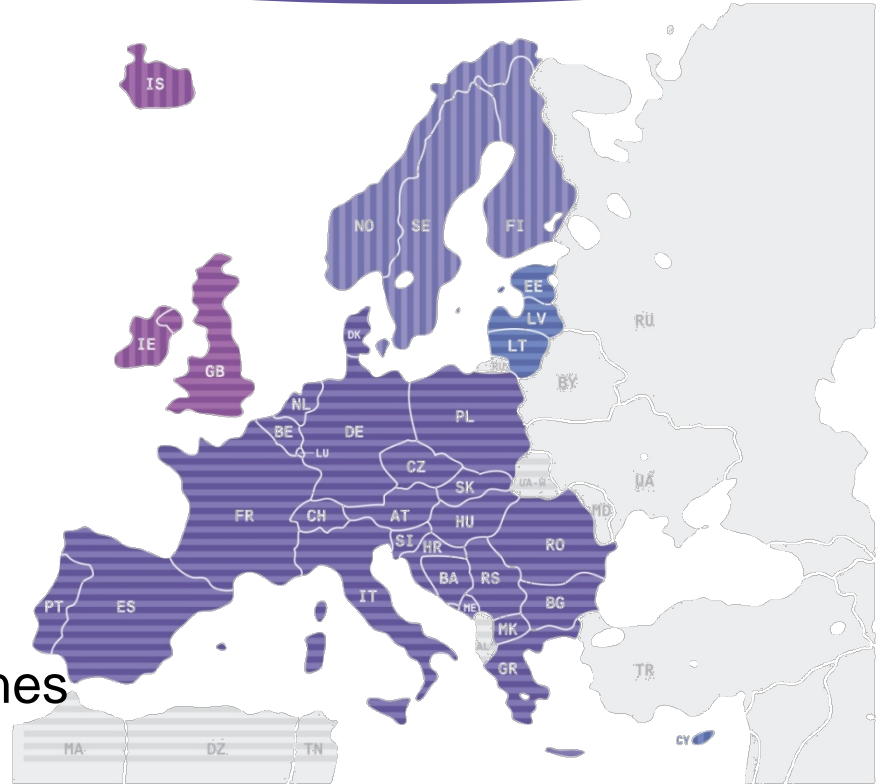
525 million  
citizens served



1000 GW generation  
capacity



310 thousands km  
of transmission lines



Ten-Year  
Network  
Development  
Plans

Adequacy  
forecasts

R&D plans

Tools for  
Market  
Integration

Network  
Codes



**=> ENTSO-E adopts and publishes:**

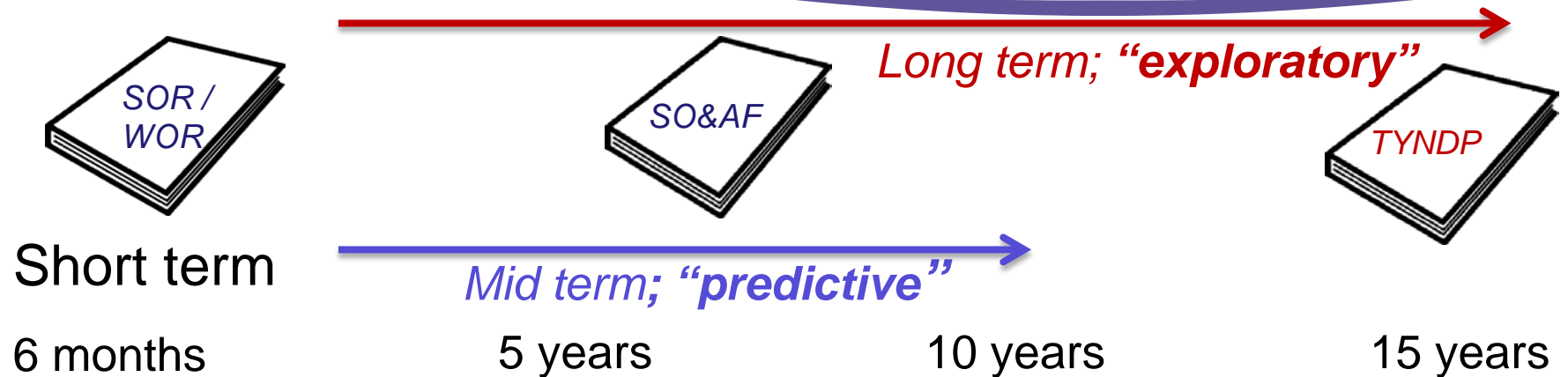
**“ a *Scenario Outlook & Adequacy Forecast*” report (SO&AF)“**

*mid-term horizon (5 – 10 years – SO&AF) on an annual basis*

**=> ENTSO -E should draw up, publish and regularly update a non-binding [Union]-wide ten-year network development plan ”**

*Long term (=> 2030) every second year*

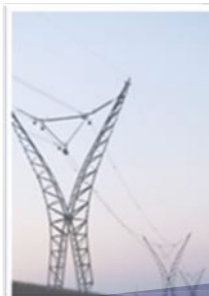
# Different objectives addressed through different time horizons



Operational  
decisions

Generation  
Investment  
decisions

Grid Investment  
Policy/political  
decisions





# How do we construct the SO&AF scenarios?

## SO&AF scenarios are:

- **predictive** → forecast → mid-term maximum (5 to 10 years)
- **bottom-up** → build on national generation adequacy outlooks prepared by TSOs
- **based a common assumption** → 2 different scenarios for generation against one common conservative forecast for demand



### Scenario A = 'Conservative'

- › Additional investment in generation => Only if confirmed
- › Notifications of decommissioning => all + technical life time of units
- › Demand forecast => highest national estimate available to TSOs

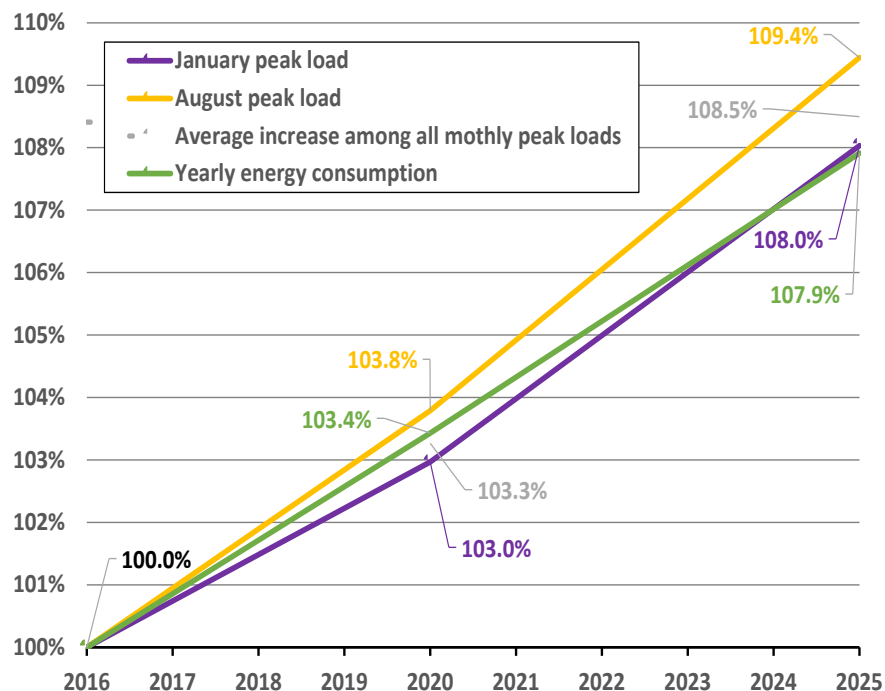


### Scenario B = 'Best Estimate'

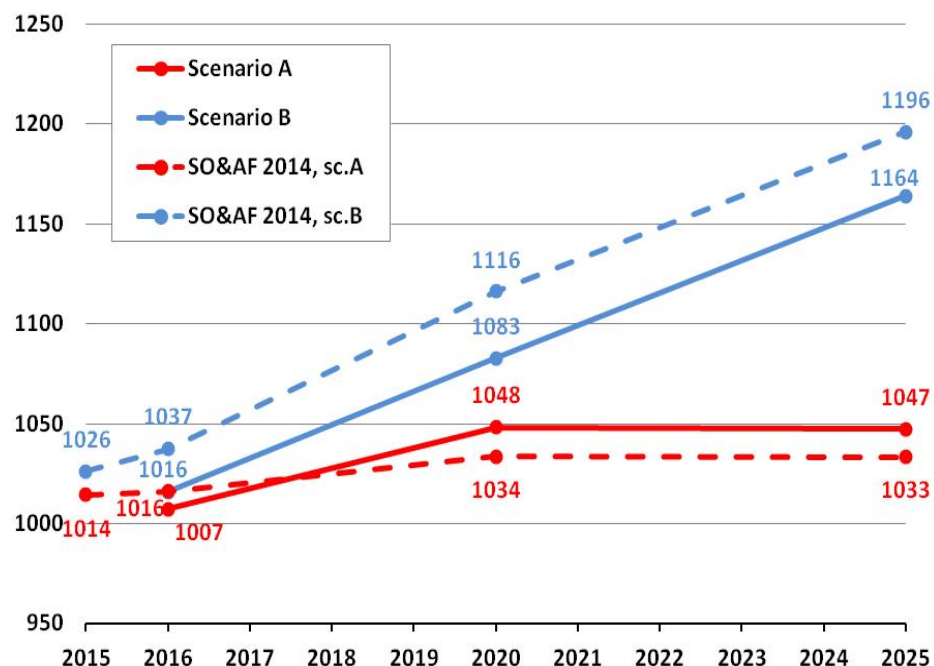
- › Additional investments in generation => all considered as reasonably credible by TSOs
- › Notifications of decommissioning => Only official communication
- › Demand forecast => highest national estimate available to TSOs

# Scenario Outlook 2015 – general overview\*

## Load and energy consumption forecast



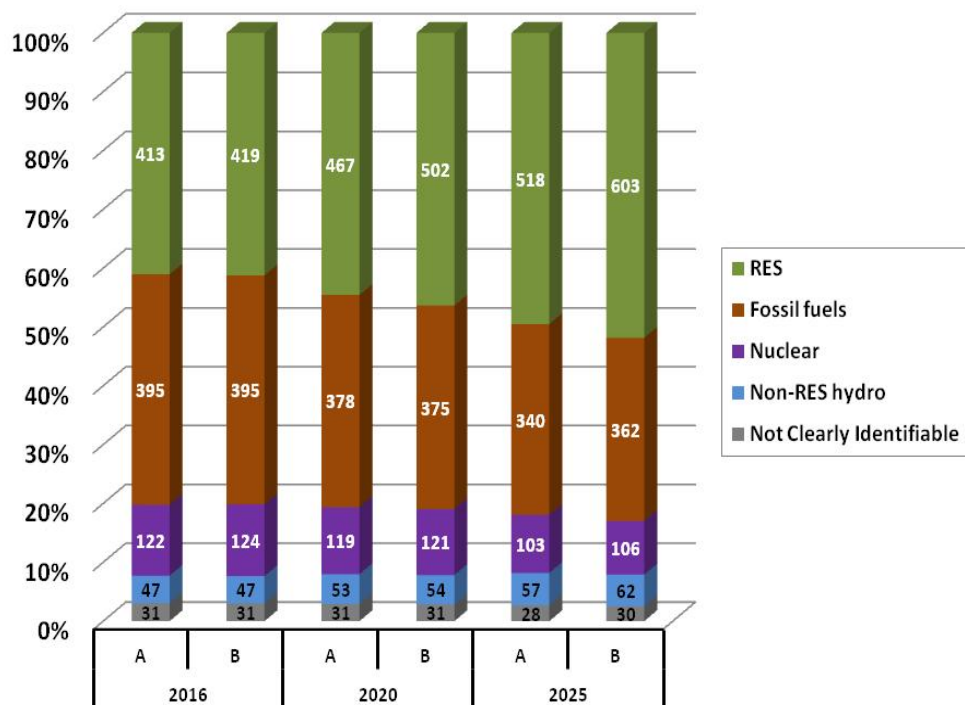
## Net Generating Capacity forecast



\* = provisional SO&AF 2015 data

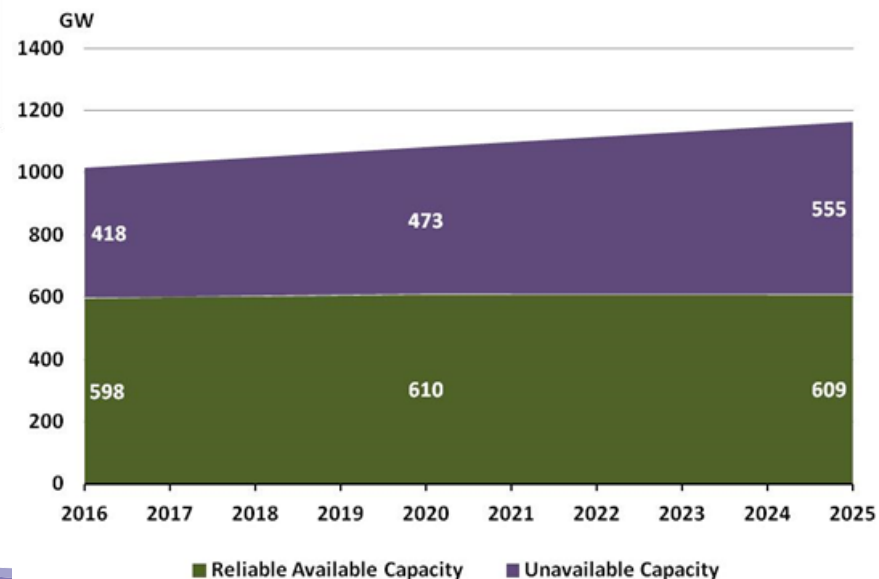
# Scenario Outlook – general overview\*

## Decommissioning *smoothed* out by RES growth



## RES up to 46% of NGC in 2020 in scenario B / 44% scenario A

	Scenario	2016-2025	Fossil fuels	RES	Non-RES hydro	Nuclear
January 7 p.m.	A	[GW, total]	-55	105	10	-18
		[% , yearly]	-1.64%	2.55%	2.25%	-1.81%
	B	[GW, total]	-33	185	15	-17
		[% , yearly]	-0.97%	4.15%	3.12%	-1.67%



\* = provisional SO&AF 2015 data

# The TYNDP 2014 package delivers...

...a vision for the development  
European extra  
high voltage grid

- **Non-binding**
- **Updated every 2 years**
- **Based on common market and network studies**
- **Generation adequacy outlook**

...a comprehensive  
document suite  
that includes

- **Ten-Year Network Development Plan**
- **Scenario Outlook and Adequacy Report**
- **6 Regional Investment Plans**



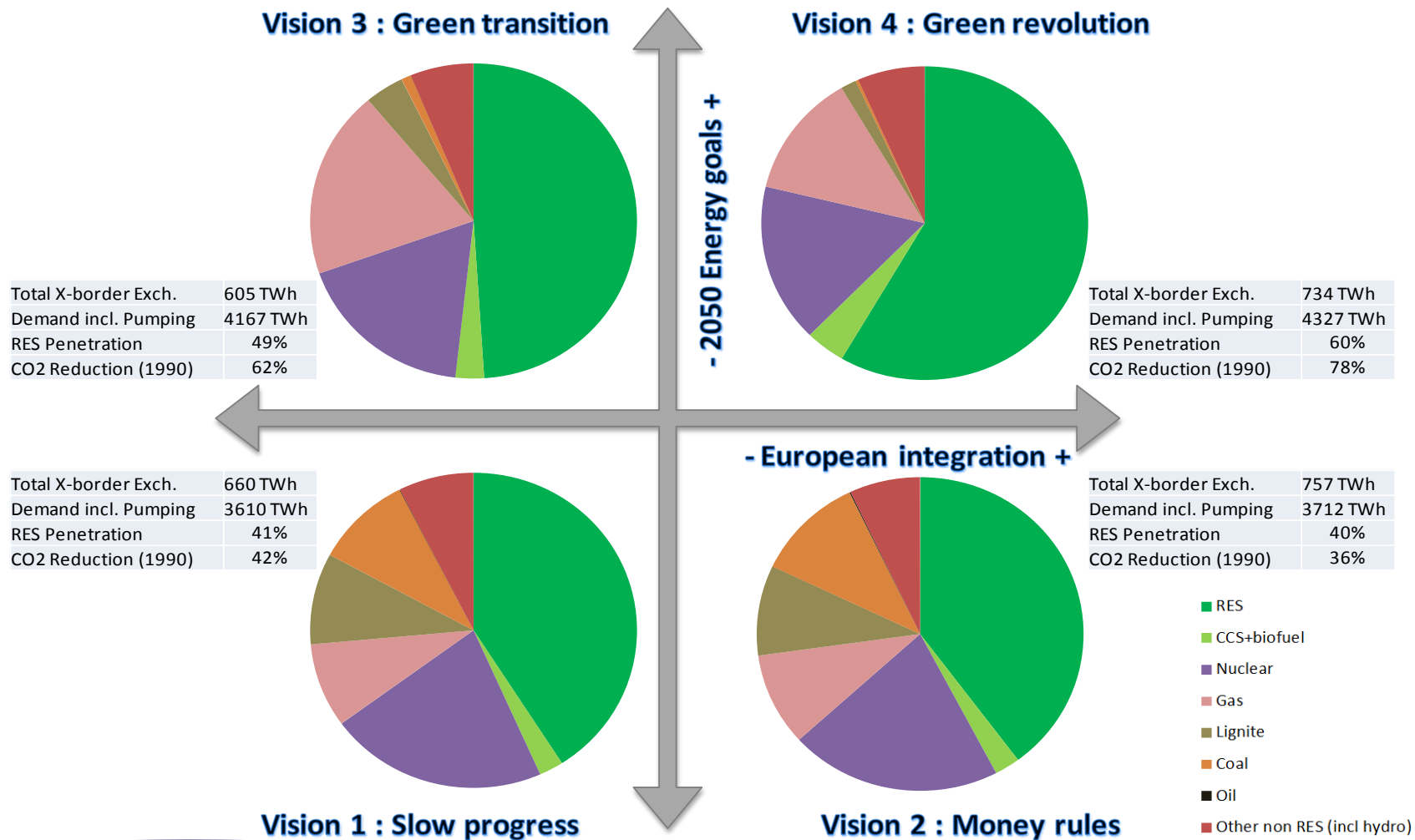
ENTSO-E 10-YEAR NETWORK  
DEVELOPMENT PLAN 2014  
PROJECT FOR CONSULTATION

DRAFT

VB – 24.02.2012

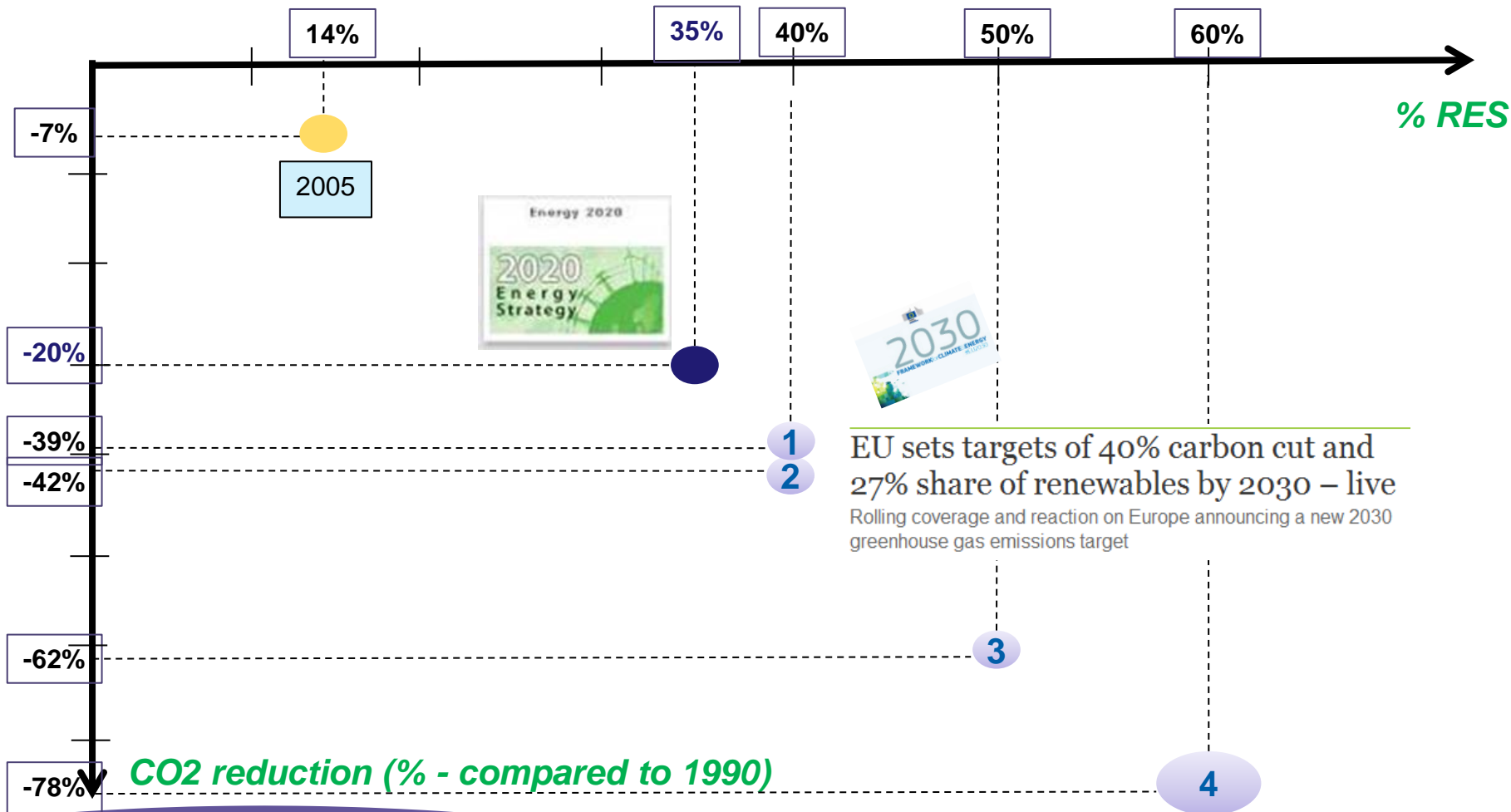


# 4 contrasting “Visions”



# 2030: a milestone for the energy transition on the road to 2050

RES Targets EU = total scope energy  
% RES = part of electricity generation mix



# The Ten-year Network development plan 2014: main findings



**€150 billions for projects of pan-E significance by 2030**



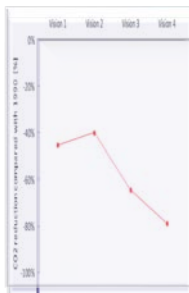
**- 2 to -5 €/MWh for bulk power prices by 2030**



**50000 km of new or refurbished grid investments by 2030: +1%/year**



**An optimised land use: the crossed urbanised (resp. protected) areas account for less than 4% (resp. 8%) of the total TYNDP projects' routes**

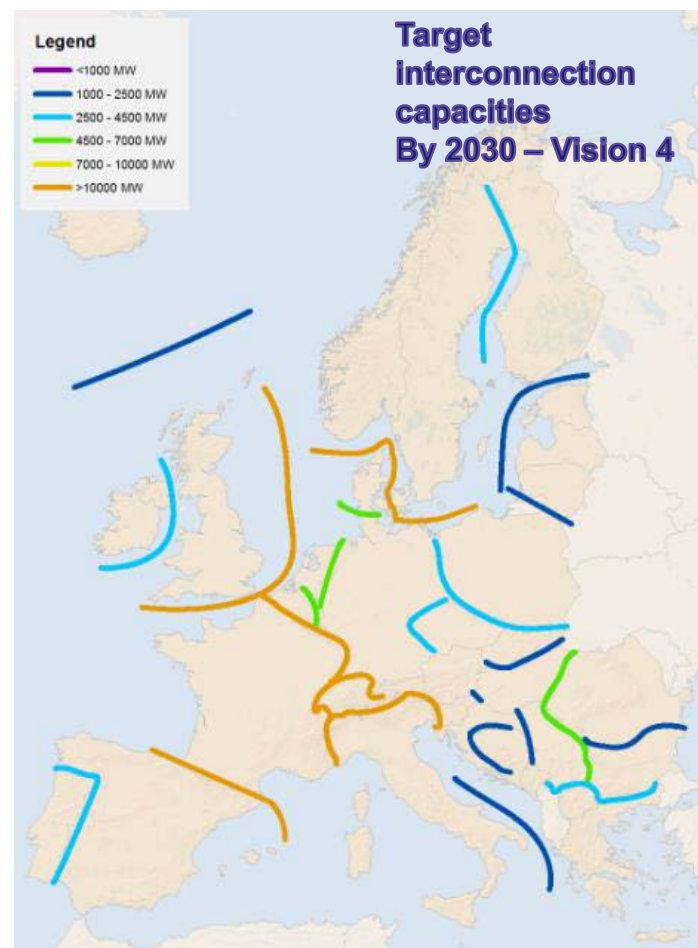
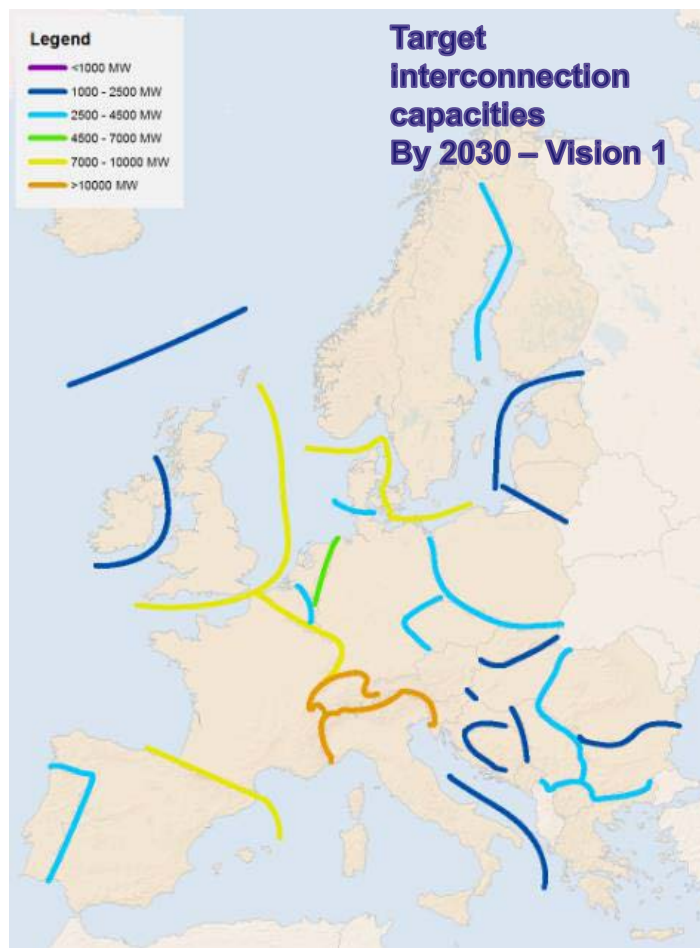


**Contribution with 20% of the CO2 emissions mitigation for the European power sector by 2030**



**Integration of RES up to 40-60% of total consumption in 2030**

# Interconnection capacity must on average double by 2030





# Taylor made solutions, adapted to every specific situation



**50000 km of new or refurbished investments**

**21000 km of new HVDC lines**

**15% of all investments are upgrade of existing assets**





**THANK YOU**