

A satellite image of Europe at night, showing city lights and the dark landmasses against the blue glow of the atmosphere and the starry night sky. The image is used as a background for the title text.

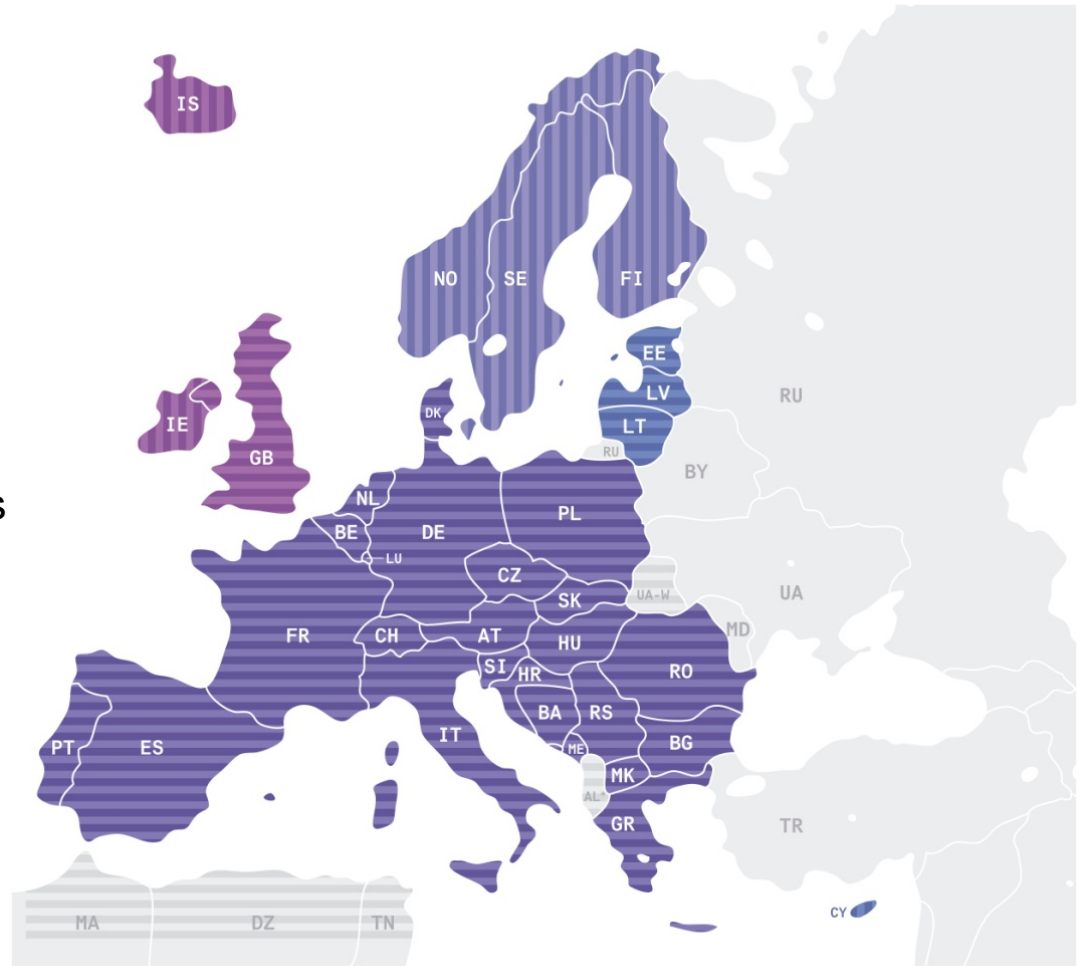
# General overview of the TYNDP 2012 outcomes learning / TYNDP 2014 expectations

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ENTSO-E

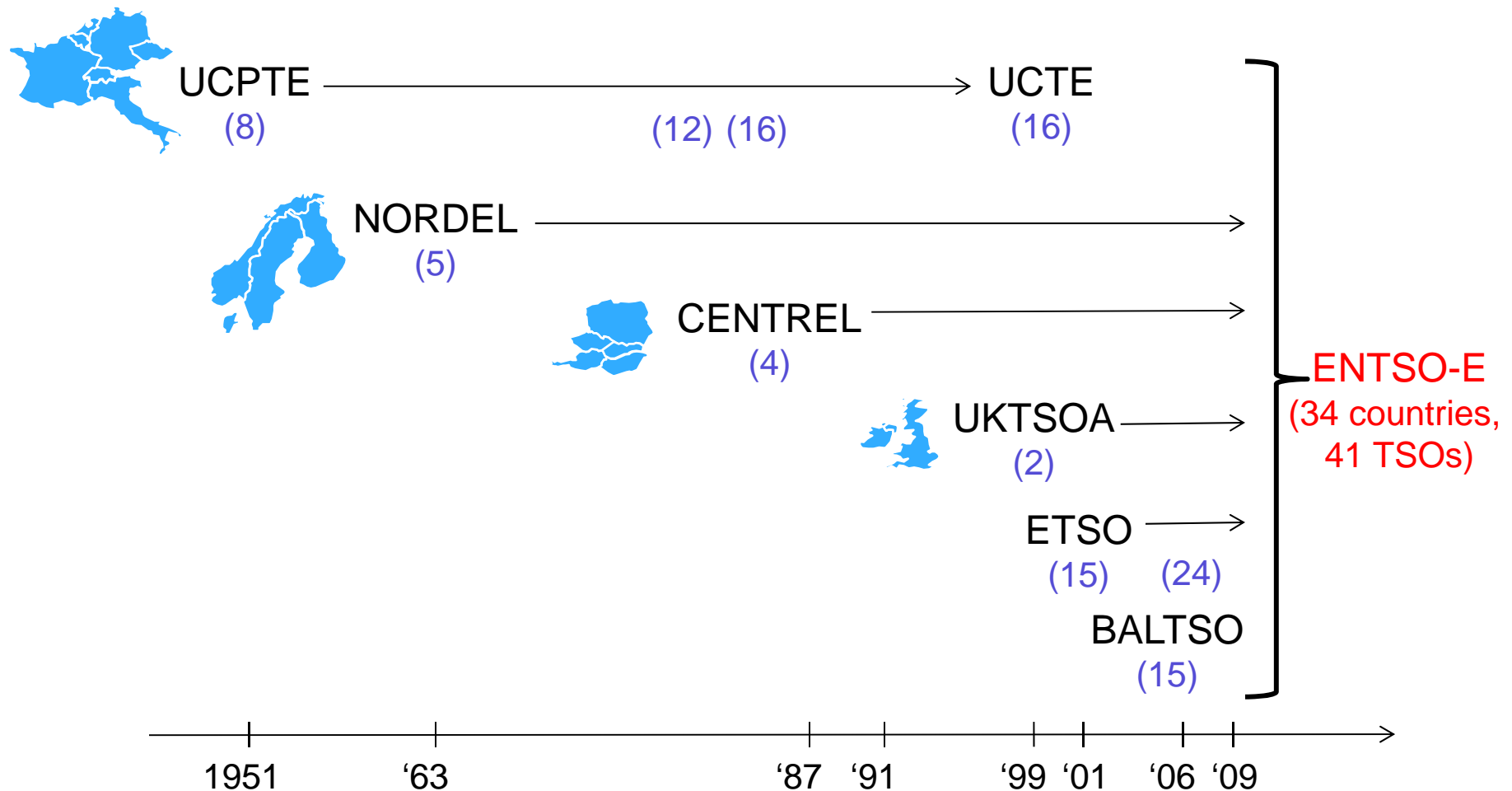
**ENTSO-E's 3<sup>rd</sup> Parties Workshop**  
20 November 2012, Brussels

# ENTSO-E today

- 41 TSOs from 34 countries
- A trans-European network
  - 532 million citizens served
  - 828 GW generation
  - 305,000 Km of transmission lines
  - 3,400 TWh/year demand
  - 400 TWh/year exchanges
- Legal mandate Reg. (EC)714/2009



## ENTSO-E: building on TSO cooperation since 1951





# EU Policies – changes in the TSO environment

## Third legislative package for the IEM

- TSO unbundling
- Creation of ACER and ENTSO-E
- TYNDP – Network Codes

## Directive 2009/28/EC on renewable sources for energy

- Binding 2020 targets
- National Renewable Action Plans
- Cooperation between Member States

## New draft Energy Infrastructure Package

- Identification of Projects of Common Interest (PCIs)
- Regulatory treatment and cross-border allocation of PCI costs
- Permit granting process for PCIs
- Eligibility of PCIs for Union financial assistance

# Why a Ten-Year Network Development Plan?

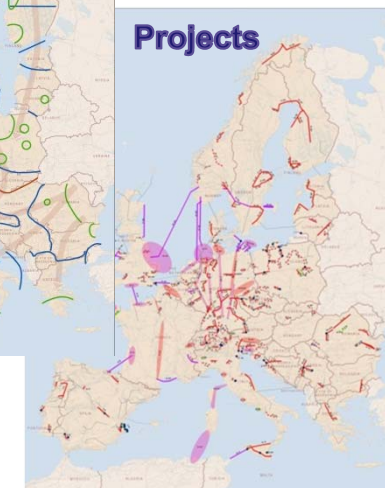
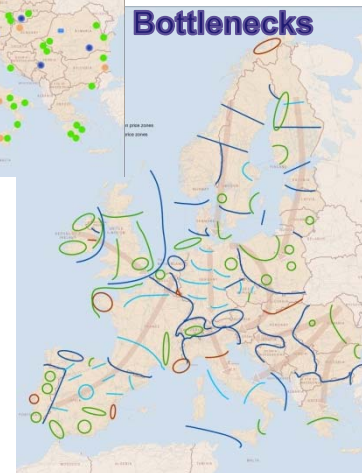
Regulation (EC) 714/2009 – “In order to ensure greater transparency regarding the entire electricity transmission network in the [Union], the ENTSO for Electricity should draw up, publish and regularly update a non-binding [Union]-wide ten-year network development plan”

**Transparency**

**TSO cooperation platform**

**Stakeholder involvement**

**Inform EU policy and investment decisions**



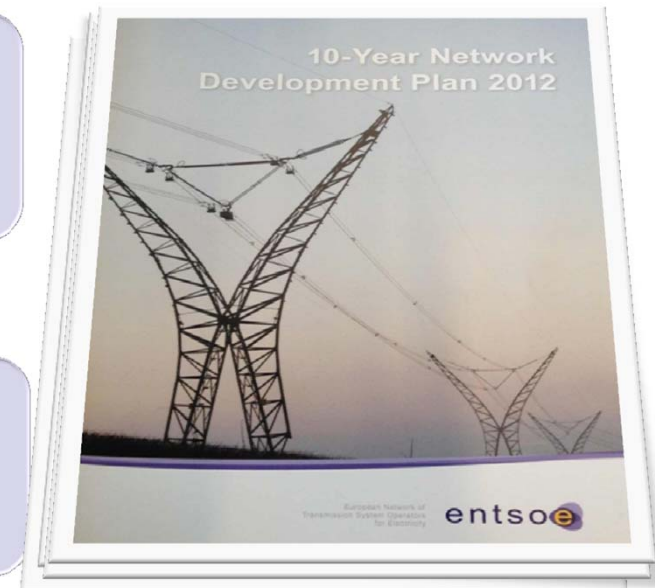
# The TYNDP 2012 package

a vision for the  
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

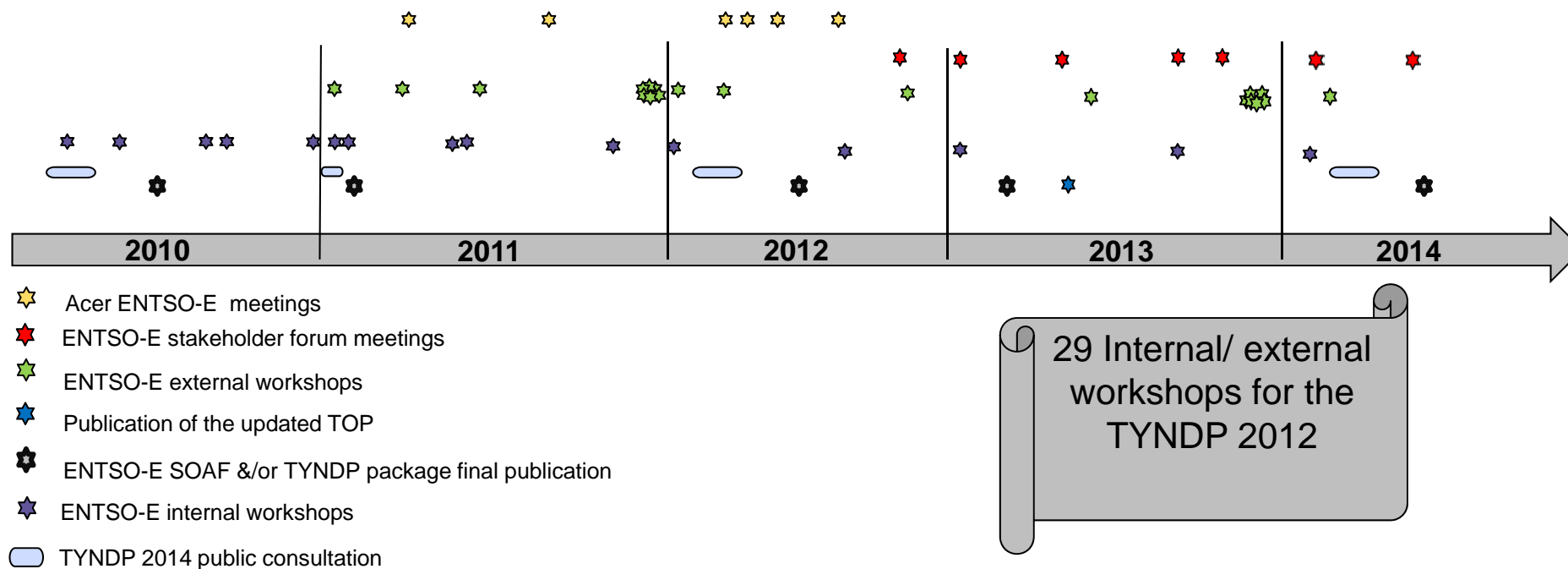


Consultation: 1 Mar - 26 Apr.

Final release: 5 July 2012

[www.entsoe.eu](http://www.entsoe.eu)

# TYNDP 2012 - interaction with our stakeholders and members



**TYNDP 2014**



**2013- 2014**

**TYNDP stakeholders working group**

# A dense 2-year long study process

- Scenario elaboration & validation
- Market studies
- Network studies
- Project identification & valuation
- Reports compilation

↪ at stake

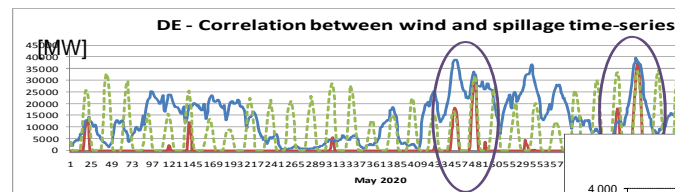
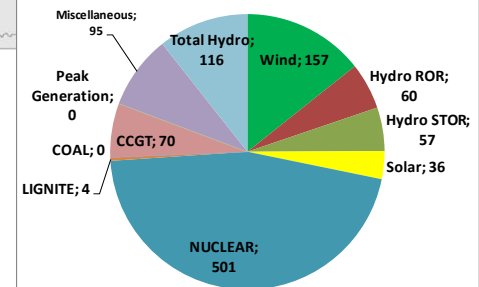
**timely** delivery

**consistent** results

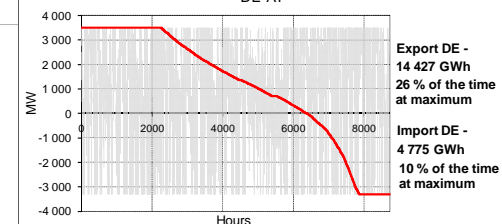
**limited** resources



Annual generation CSW Region (TWh) - EU202020 - Grid 2012



Duration curve of market flows in 2020 DE-AT

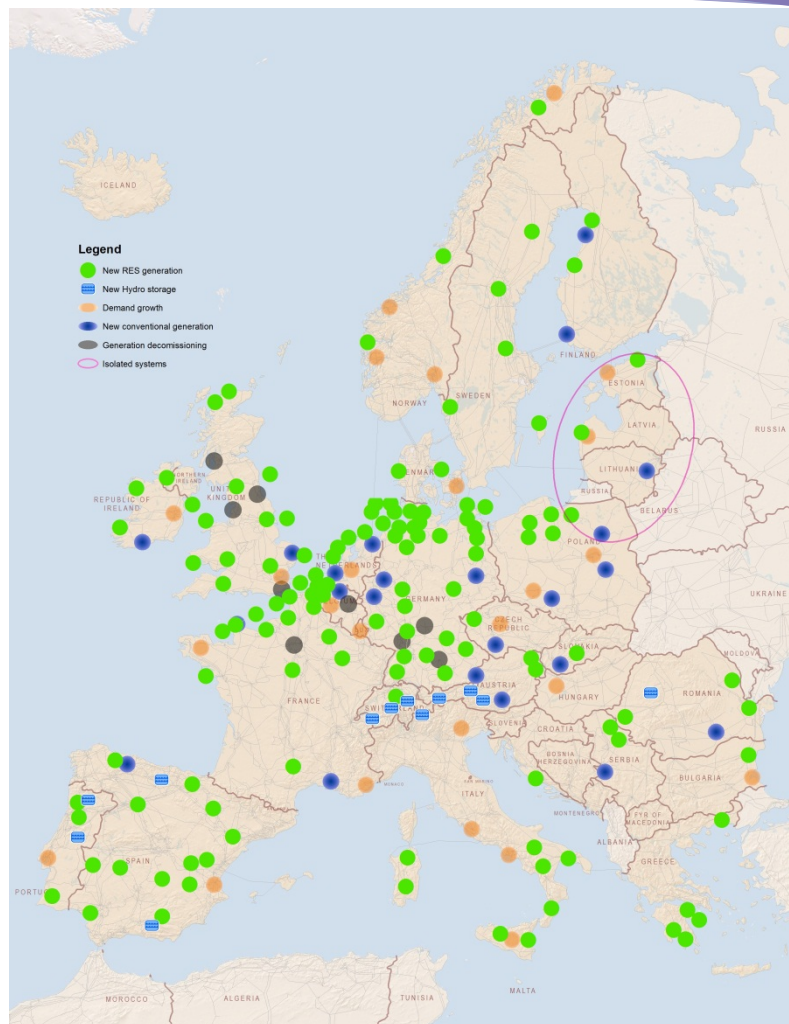


Presently being investigated

↪ Subject to adaptations &/o changes



# Renewable energies boom – by 2020 provides 38% of the electricity demand

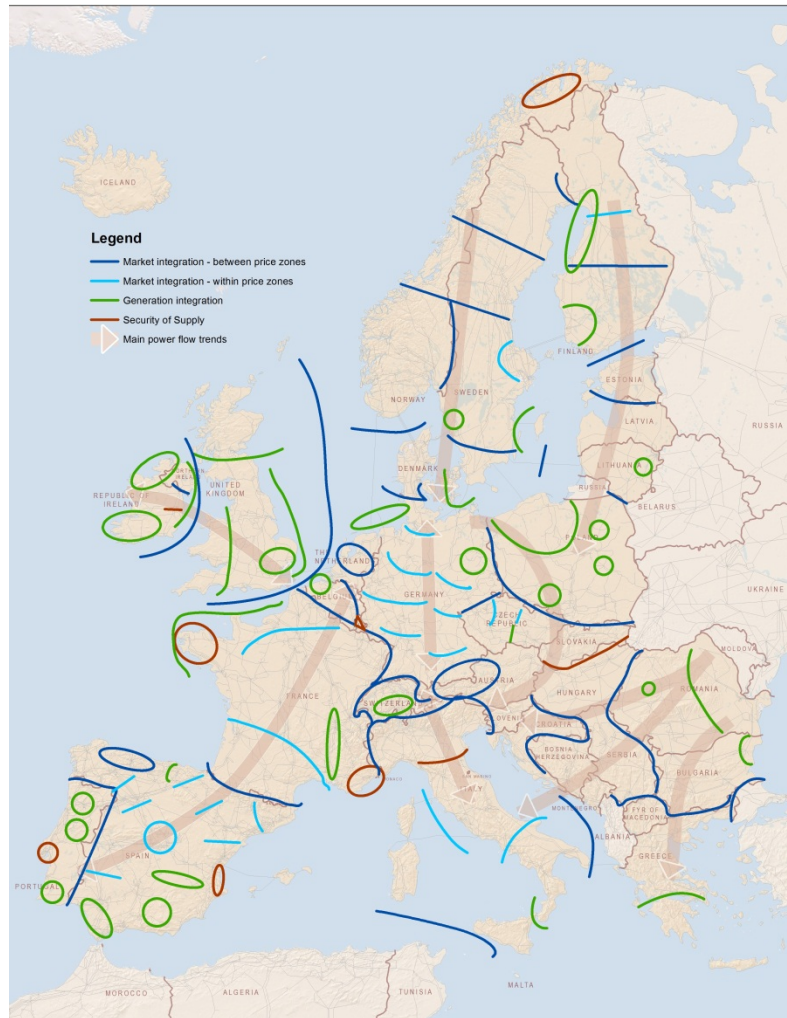


1/3 of present generation capacity to be replaced to meet demand in the coming decade **+3% per year**

Peak load growth **+1.7% per year**

Grid length development **+1.3% per year**

# Around 100 bottlenecks in the transmission system by 2020

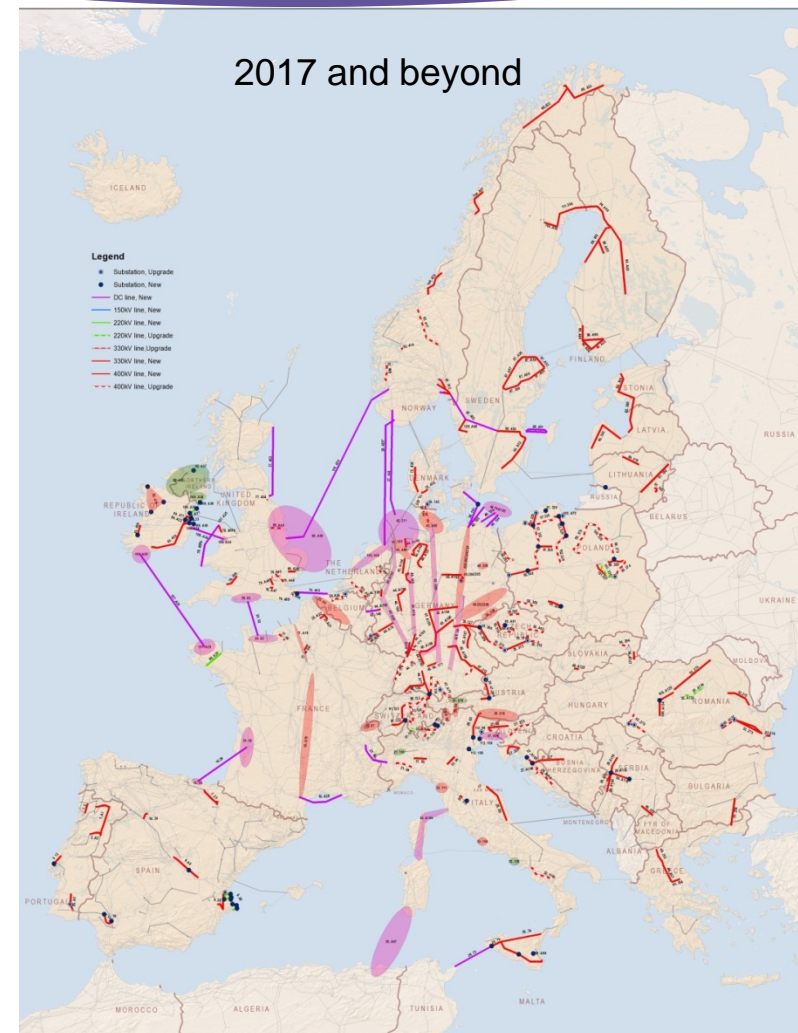
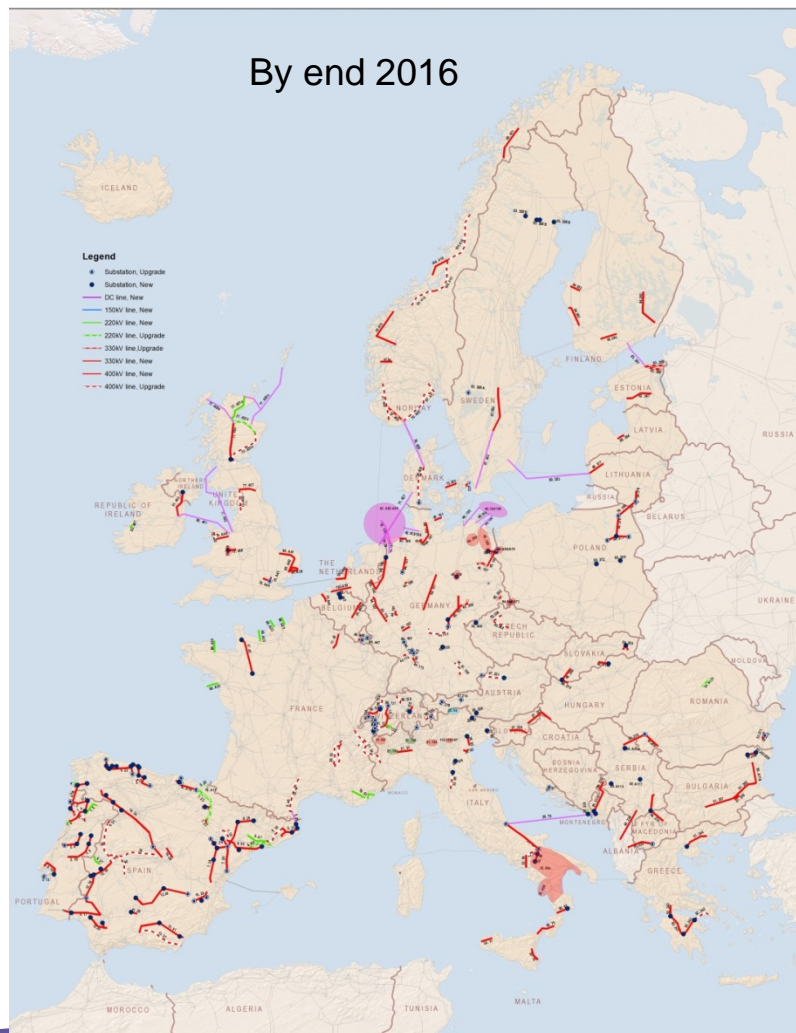


RES is  
triggering  
80% of  
assets  
growth

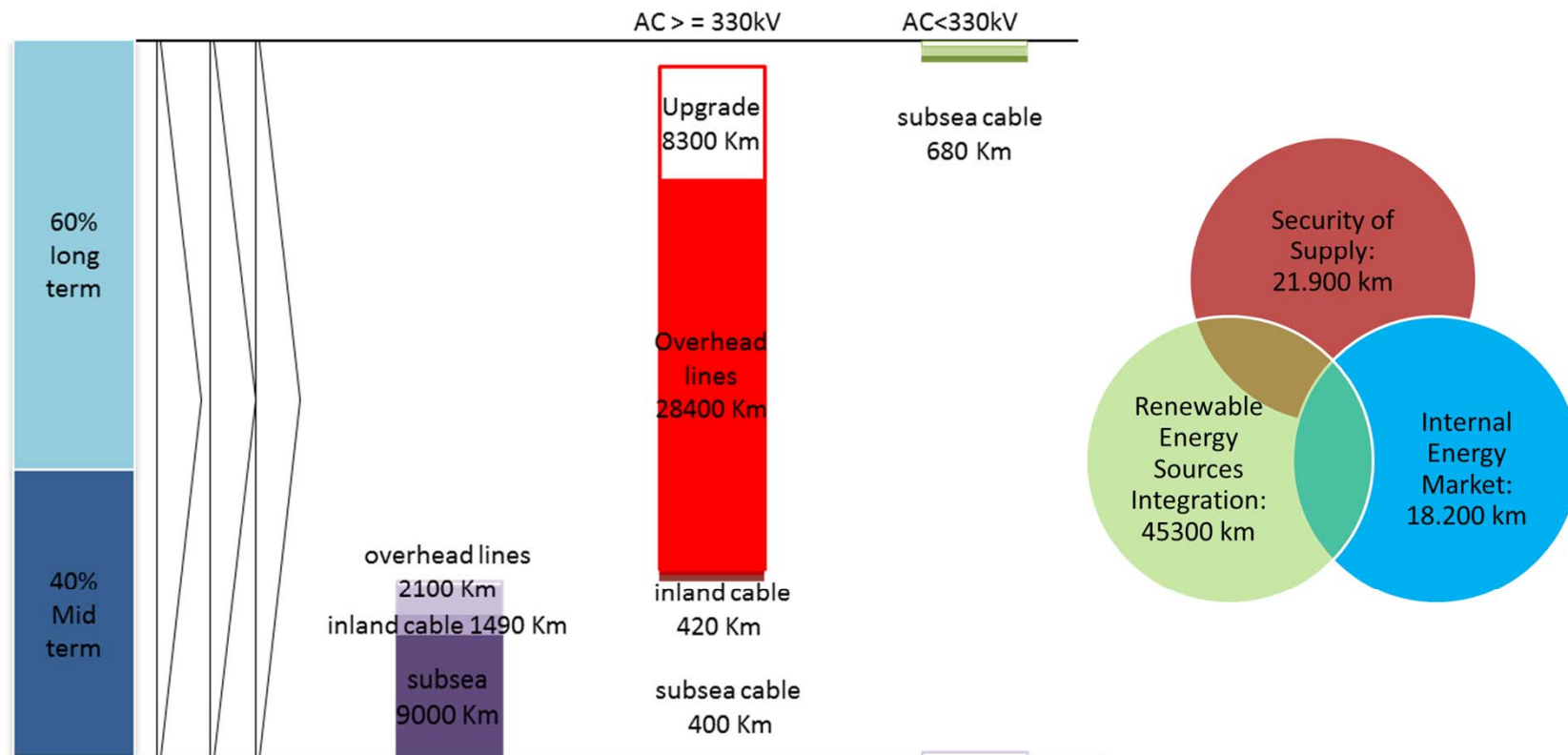




# 2020 Europe – 17% increase in transmission infrastructure



## 2020 Europe – additional 52300 km lines





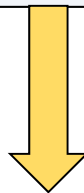
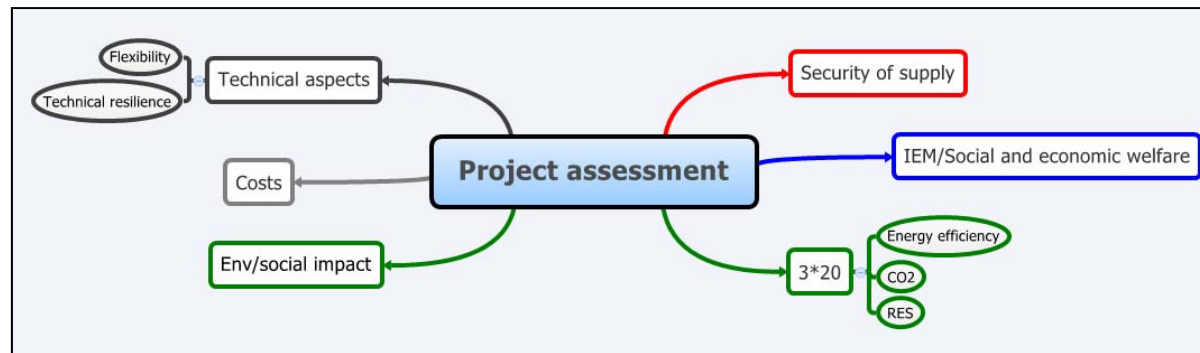
## About €100 billion in the coming 10 years

- **€100 billion investment on grids...**
- **≈ 1.5-2 €/MWh in Europe over the 10-year period,**
- **≈ 2% of the bulk power prices,**
- **≈ less than 1% of the total end-users' electricity bill**

	billion €		billion €
Austria	1.1	Ireland	3.9
Belgium	1.9	Latvia	0.4
Bosnia-Herzegovina	0.0	Lithuania	0.7
Bulgaria	0.2	Luxembourg	0.3
Croatia	0.2	Montenegro	0.4
Czech Republic	1.7	Netherlands	3.3
Cyprus	0.0	Norway	6.5
Denmark	1.4	Poland	2.9
Estonia	0.3	Portugal	1.5
Finland	0.8	Romania	0.7
France	8.8	Serbia	0.2
FYROM	0.1	Slovakia	0.3
Germany	30.1	Slovenia	0.3
Greece	0.3	Spain	4.8
Hungary	0.1	Sweden	2.0
Iceland	0.0	Switzerland	1.7
Italy	7.1	United Kingdom	19.0

Total ENTSOE perimeter	104
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# TYNDP - Multi-criteria projects assessment



Grid transfer capability increase	Social and economic welfare	RES integration	Improved security of supply	Losses variation	CO2 emissions variation	Technical resilience	Flexibility	Social & environmental impact	Costs
+ ... MW									

# TYNDP 2012 summary

**> 100 projects, 52 300 km, approx. €104 bn of investments**

- Notwithstanding non pan-European significance projects

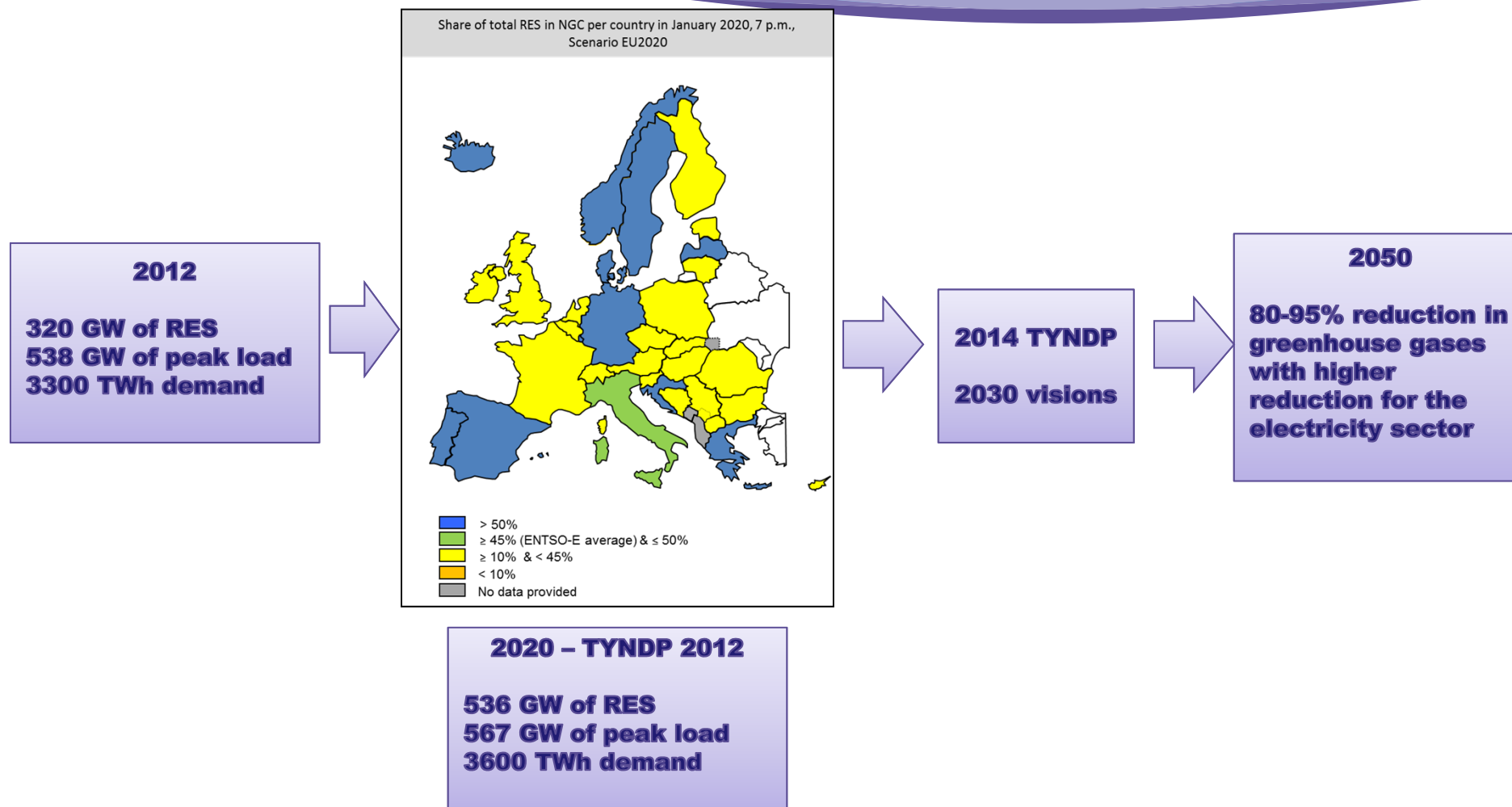
**+1.3% per year grid length development despite a major upcoming shift in generation mix to accommodate wider, stronger, more volatile power flows**

- One third of the present generation capacity to be built in the coming decade (i.e. +3% per year)

**Social acceptance is still the major challenge!**

- 1 in 3 TYNDP 2010 investment projects are delayed because of longer than expected authorization procedures

# ENTSO-E - Where are we heading to?



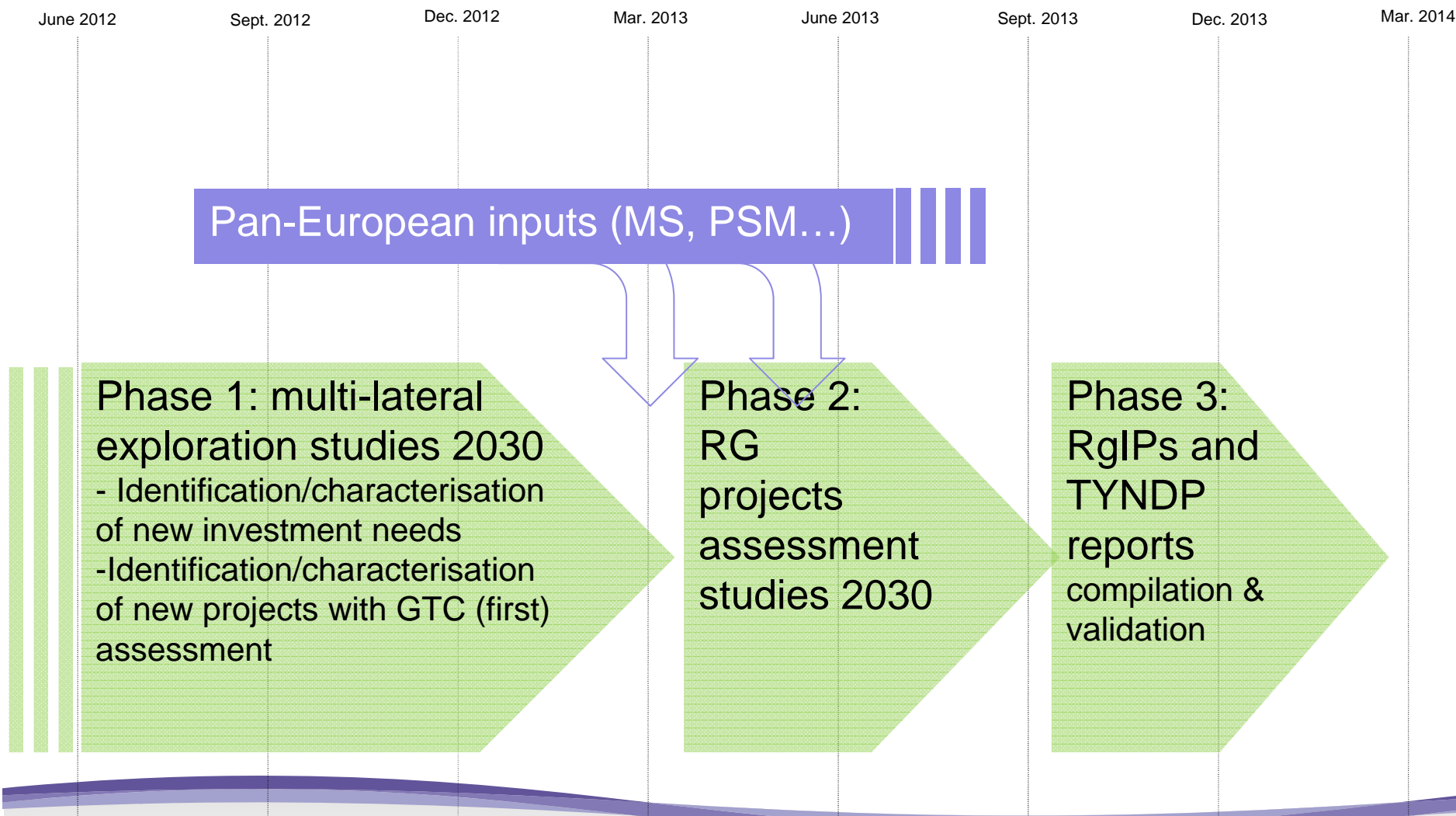


# TYNDP 2014 – initial view



1. Will be published July 2014
2. The package structure will be kept: 8 reports
3. **It will tackle 2030 horizon** ->2 stakeholder workshops on the 2030 visions
4. **Improved guidelines for the 3<sup>rd</sup> party projects** integration in the TYNDP
  - Based on the collaboration with the stakeholders
5. Development of the **Cost and Benefit Analysis methodology** for TYDNP 2014 is in progress
  - multi-criteria approach
  - expected Spring 2013
6. Creation of the **Long Term Network Development Forum – stakeholder group**
  - The forum will not limit itself to the TYNDP topic, although, it is built initially around the development plan
7. **Base for the PCI selection**

# Multilateral studies for TYNDP 2014





# Back-up

# Projects of European significance – Definitions

