

TYNDP process and scenarios 2030 visions approach

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ENTSO-E RG CCE stakeholder external workshop
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1. TYNDP process overview

2. 2030 visions

- Vision 1 – slow progress
- Vision 2 – money rule
- Vision 3 – green transition
- Vision 4 – green revolution

3. 2030 visions and 2050 targets



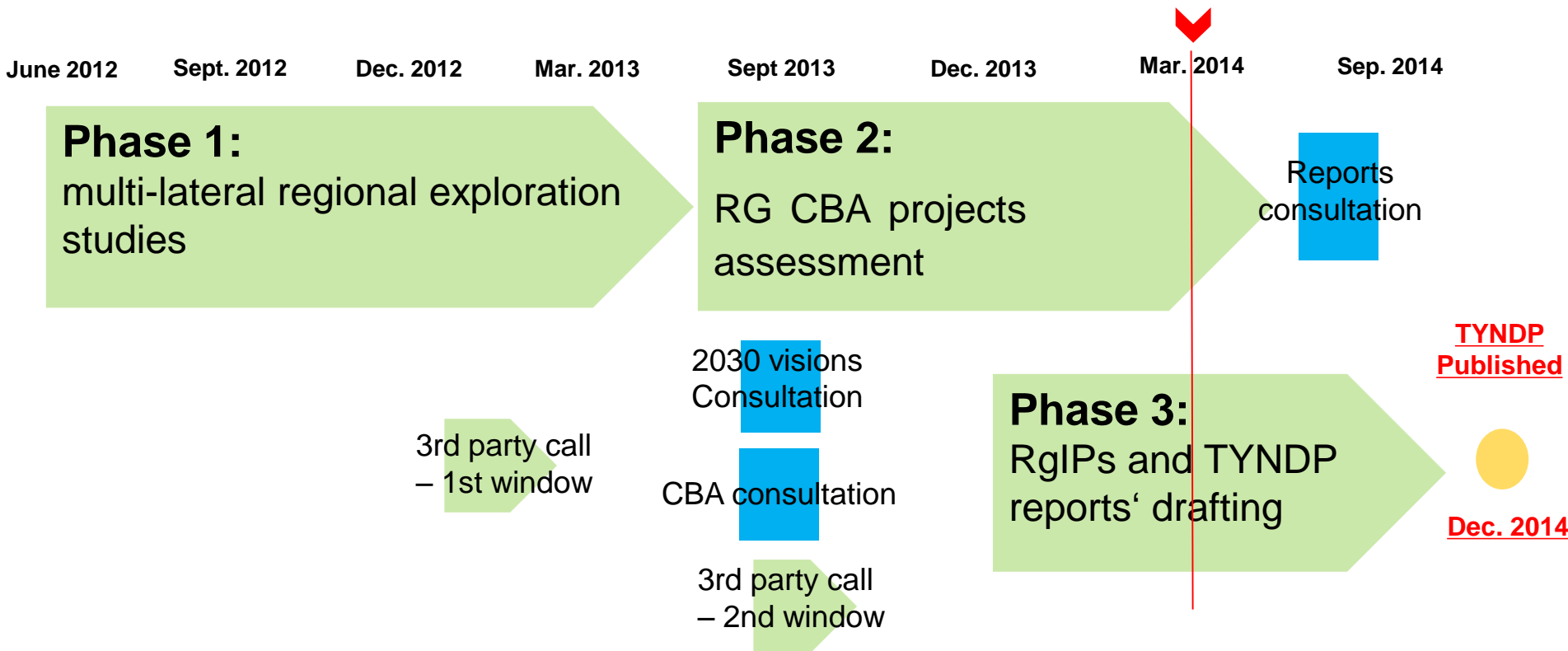
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On the way towards TYNDP 2014



On the way towards TYNDP 2014



Sept 2013

Dec. 2013

Mar. 2014

May 2014

Phase 2:

RG CBA projects assessment

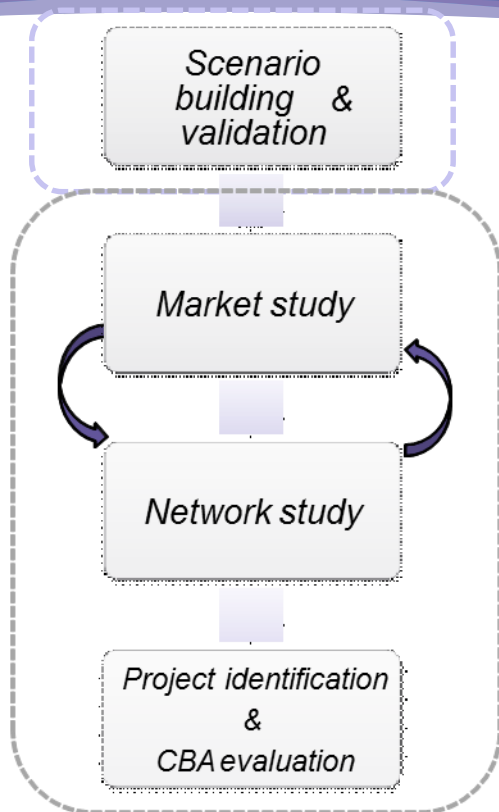
V1 assessment

V4 assessment

V3 assessment

V2 assessment

Regional Groups task within the TYNDP process



Regional Groups:

- ✓ *Run regional market and network studies*
- ✓ *Identify the needs and necessary network reinforcements*
- ✓ *Evaluate the TYNDP projects within their regulation area:*
 - *ENTSO-E's TSOs projects*
 - *Third party projects projects*
- ✓ *Draft Regional Investment Plans*

TYNDP 2014

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



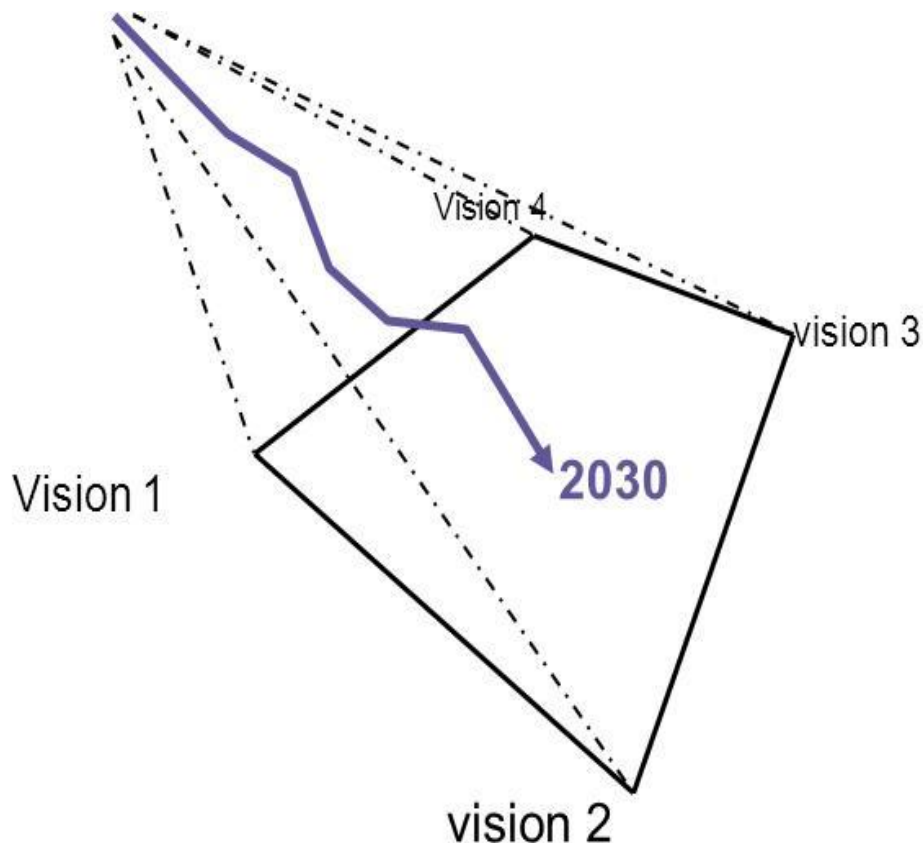
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2030 Visions

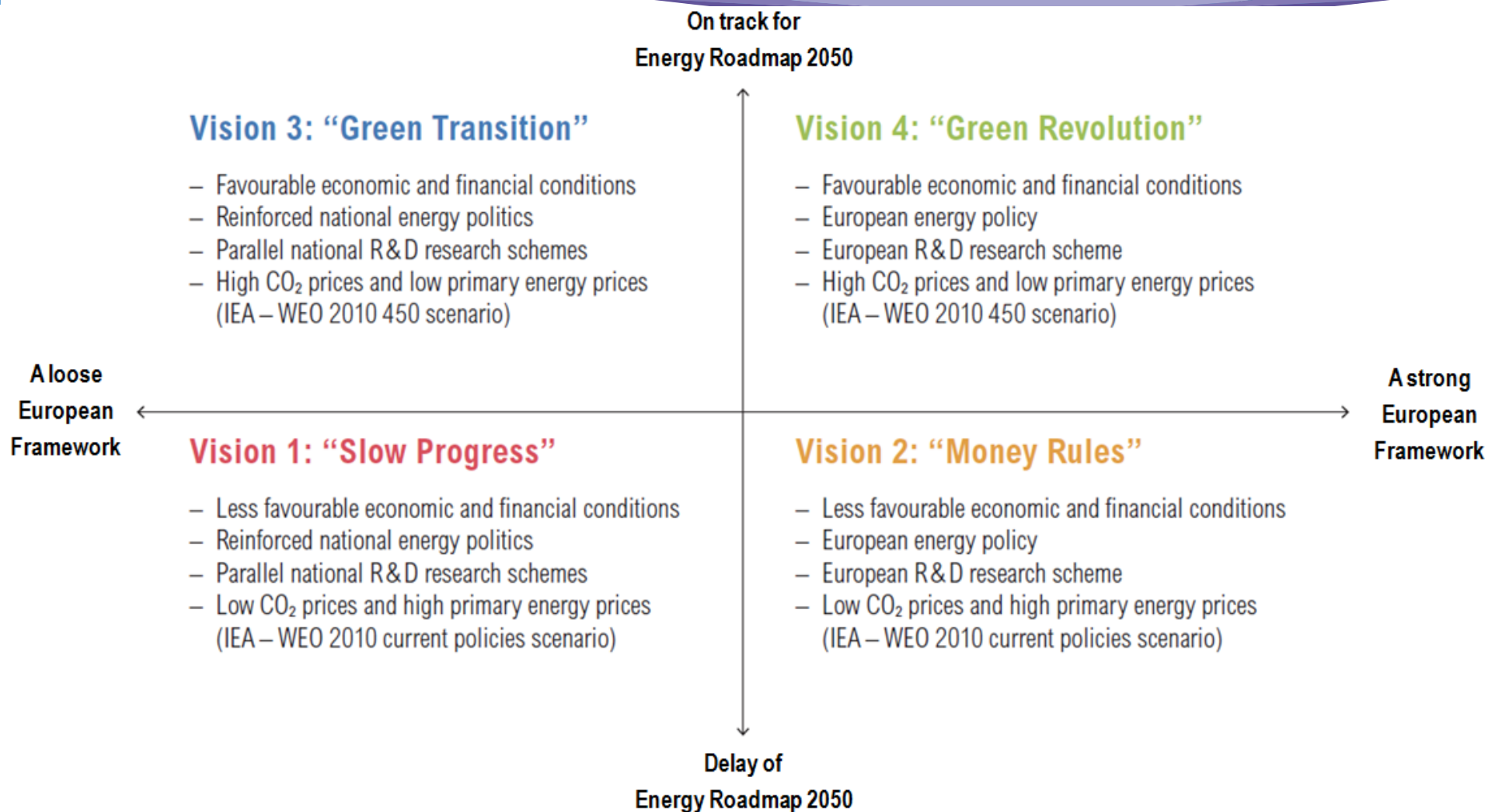


Objectives of the visions

- Look beyond 2020.
- Differ enough from each other.
- The visions are not forecasts (no probability attached to the visions).

THE PATHWAY REALISED IN THE FUTURE FALLS WITH A HIGH LEVEL OF CERTAINTY IN THE RANGE DESCRIBED BY THE FOUR DESCRIBED VISIONS

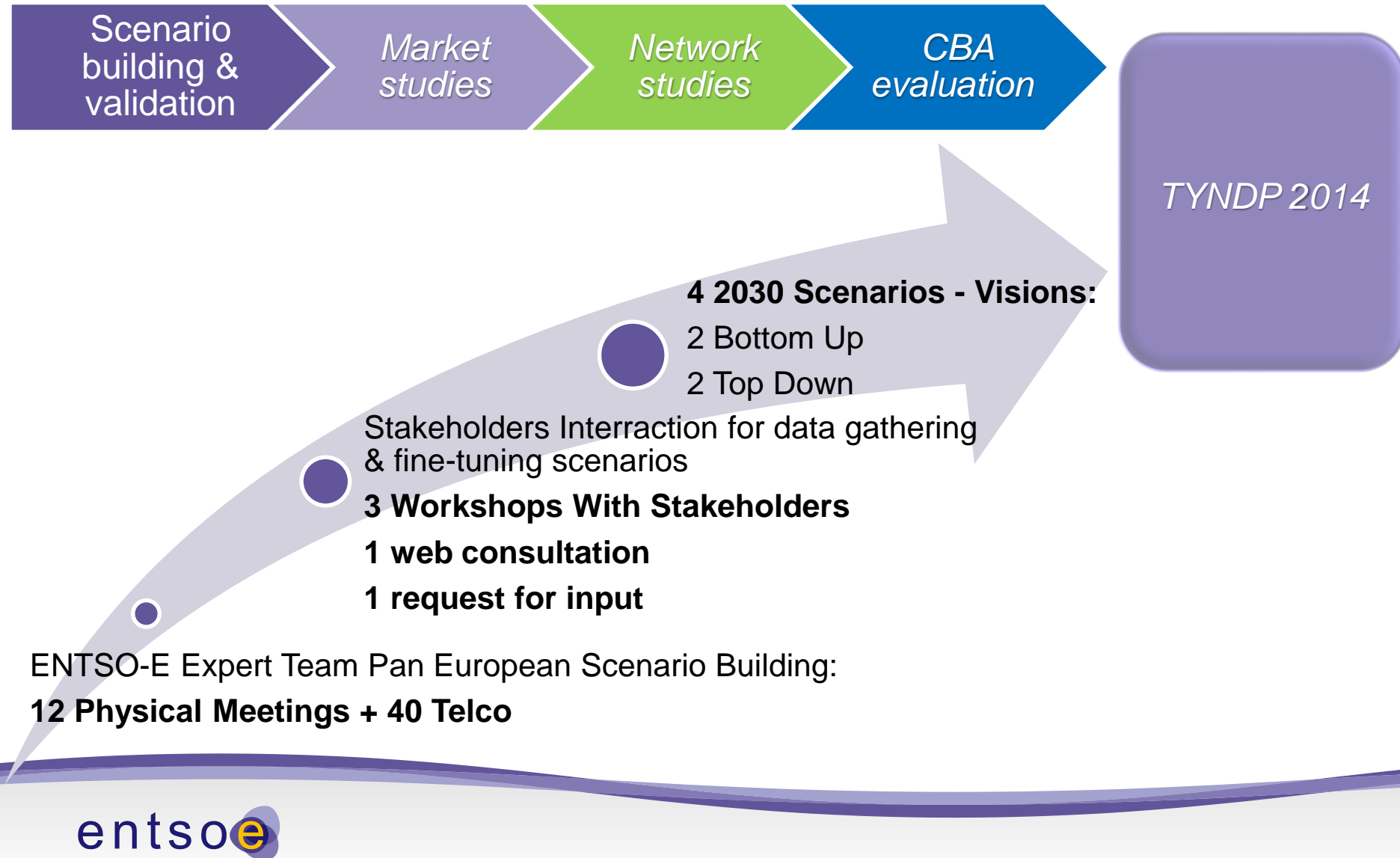
General Characteristics of 2030 Visions



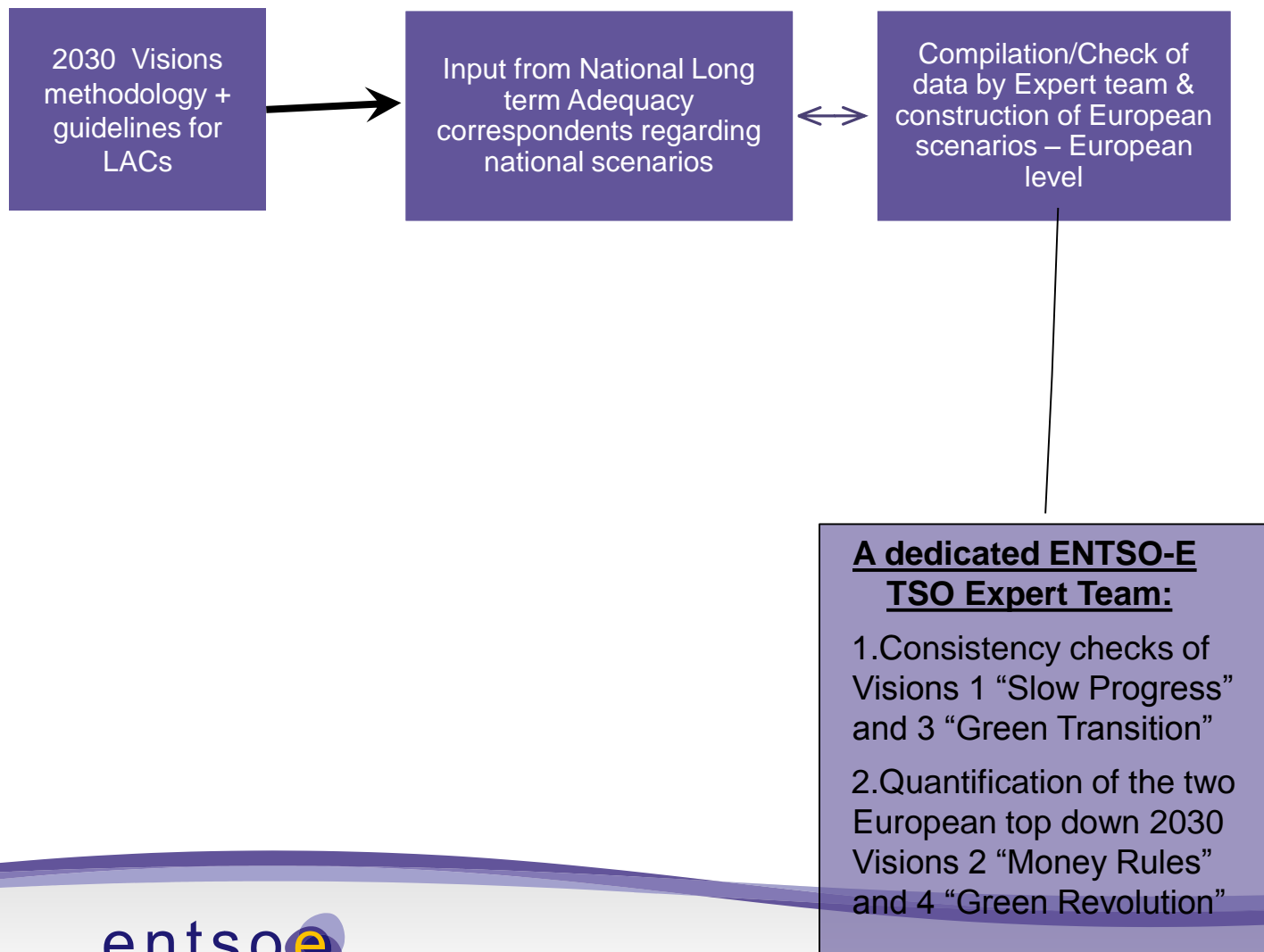
Detailed Characteristics of 2030 Visions

	Vision 1 : Slow progress	Vision 2 : Money rules	Vision 3 : Green transition	Vision 4 : Green revolution
Economic and financial conditions	Less favourable	Less favourable	Favourable	Favourable
Focus of energy policies	National	European	National	European
Focus of R&D research schemes	National	European	National	European
CO ₂ prices and primary energy prices	Low CO ₂ prices and high primary energy prices	Low CO ₂ prices and high primary energy prices	High CO ₂ prices and low primary energy prices	High CO ₂ prices and low primary energy prices
Electricity demand	Lowest level	Higher than in Vision 1	Higher than in Vision 2	Higher than in Vision 3
Demand respons potential	Used as today	Partially used	Partially used	Fully used
Electric vehicles	No commercial break through of electric plug-in vehicles	Electric plug-in vehicles (with flexible charging)	Electric plug-in vehicles (with flexible charging)	Electric plug-in vehicles (with flexible charging and generation)
Heat pumps	Implemented (although not evenly spread around Europe)	Implemented (although not evenly spread around Europe)	Implemented (although not evenly spread around Europe)	Much more heat pumps implemented (although not evenly spread around Europe)
Back-up generation	Level of back-up generation higher than in Vision 2 but lower than in Vision 4	Lowest level of back-up generation	Highest level of back-up generation	Level of back-up generation higher than in Vision 2 but lower than in Vision 3
Nuclear	National view	Public acceptance	National view	Public acceptance
CCS	Not commercially implemented	Partially implemented	Not commercially implemented	Fully implemented
Storage	As planned today	As planned today	Decentralised storage (limited amount but higher than in Vision 4)	Mainly additional centralised hydro storage + some decentralised storage
Smart grid solutions	Partially implemented	Fully implemented	Partially implemented	Fully implemented

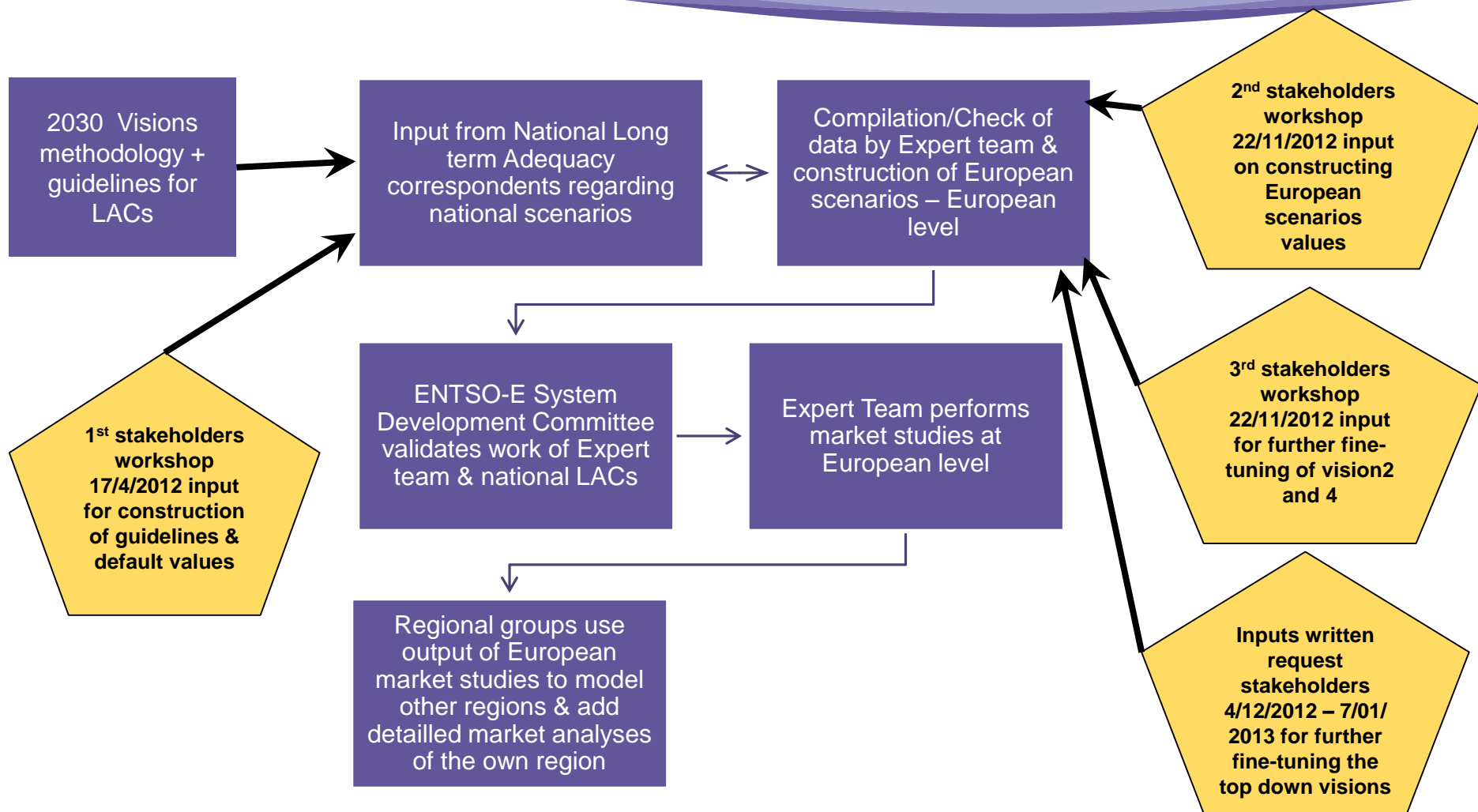
Process at a glance: scenario elaboration and validation



Construction process of the 2030 visions



Construction process of the 2030 visions





- **Scenarios were build on the methodology prepared by ENTSO-E.**
- **As an input for the mentioned methodology different national strategies and concepts, as well as international energy forecasts/reports were used.**
- **In order to improve the scenarios for future grid development needs, stakeholders were consulted regarding probable tendencies towards 2030 (workshop 17/4/2012). The inputs were used to establish default values and general common framework.**

- **Guidelines for TSOs – for “Long-term Adequacy Correspondents (LAC)” - were prepared by ENTSO-E**
- **National data (for vision 1 “Slow Progress” and 3 “Green Transition”) provided by TSOs are coherent with the general common framework set by ENTSO-E => consistency checks**
- **The top-down approach for visions 2 “Money Rules” & 4 “Green Revolution” required that they were established at a centralized European level with visions 1 and 3 data as a starting point and also using different international energy reports.**

Data collection

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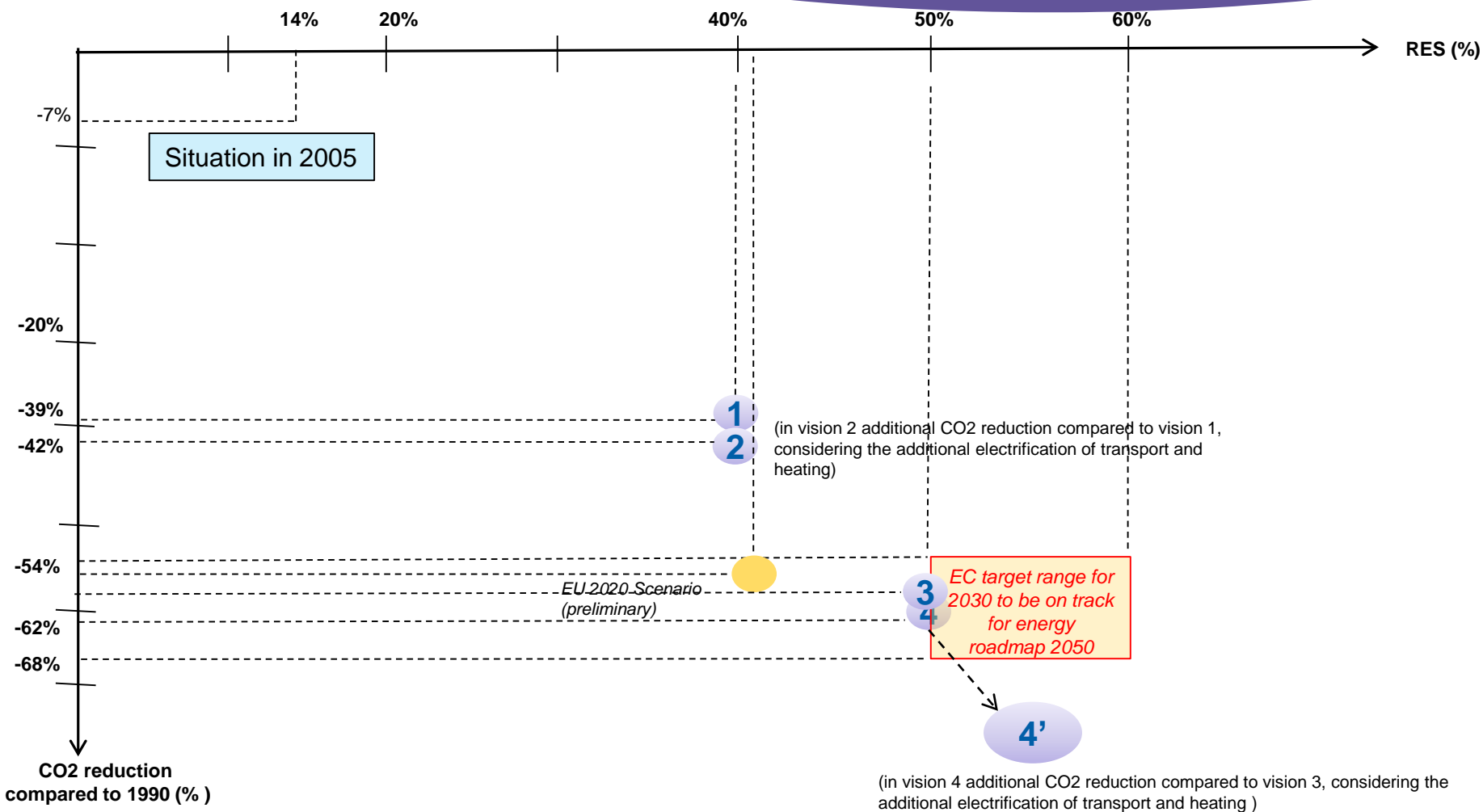
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A Bridge towards the Energy Roadmap for 2050



A Bridge towards the Energy Roadmap for 2050



EC target range for 2030 to be on track for energy roadmap 2050:

- Visions 1 and 2 are not on track for both indicators (but ok against Current Trend Scenarios)
- Visions 3 and old 4 are in the range for CO₂ reductions (-62%) / slightly inferior for RES integration (vs. Decarbonisation Scenarios)
- Vision 3 and Vision 4 can be seen as projection of the EU2020 scenario, where the CO₂ emission is less than Visions 1 and 2 because of additional nuclear generation
- New Vision 4 gets beyond required CO₂ reduction (-78%)

THANK YOU FOR YOUR ATTENTION!

Questions?

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