

Joint ENTSO Scenario Building 2020

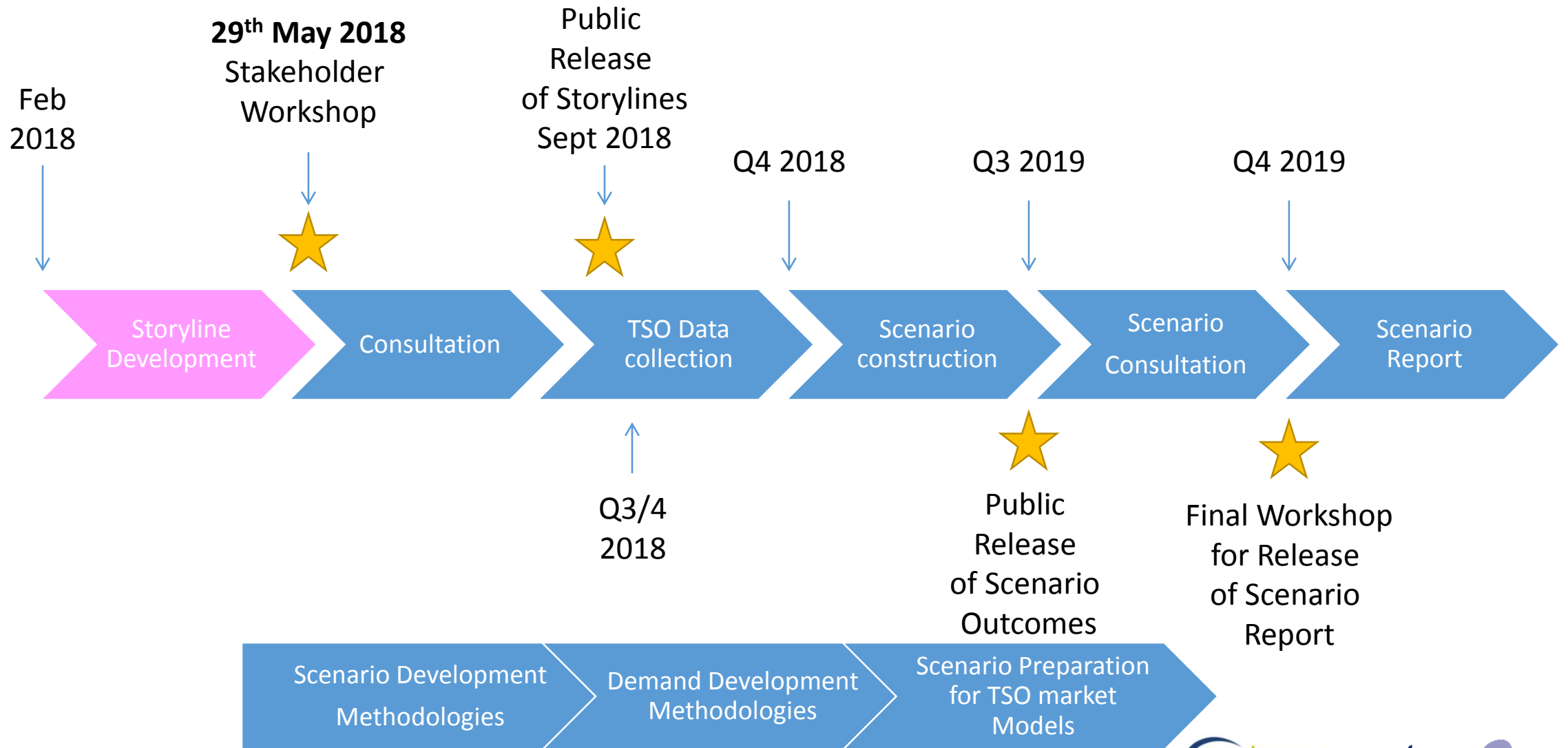
Enabling the Energy Transition – Storyline Development

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Purpose of this Workshop

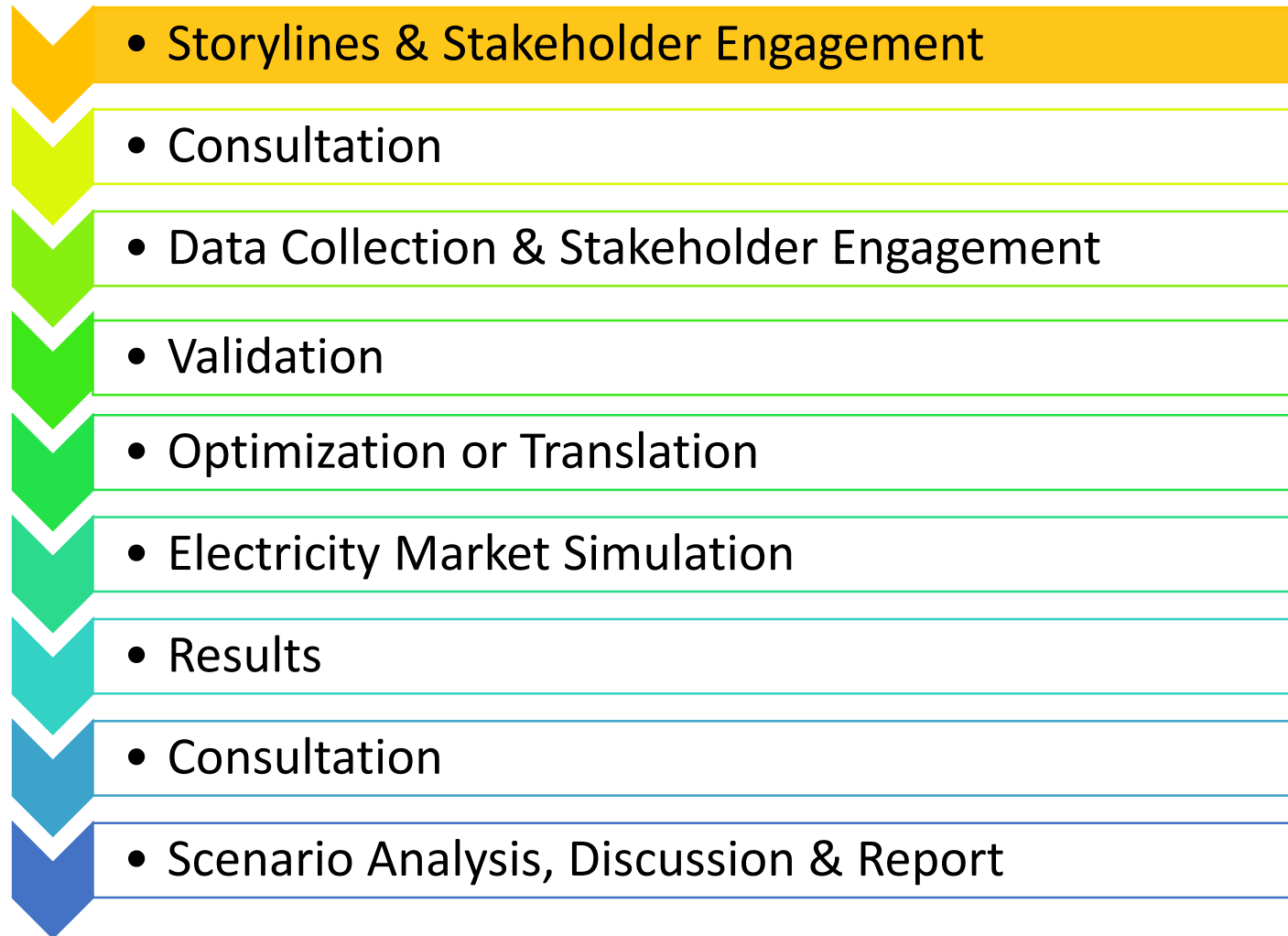
- **The purpose of this Workshop is to focus our attention on the key parameters and variables that are required to develop Storylines for the ENTSO Scenario Building 2020 process.**
- **The purpose of today's workshop is to review key drivers and parameters that are relevant to enabling the European Energy Transition**
- **Key to success today – your active participation in the process!**

Scenario Building Timeline



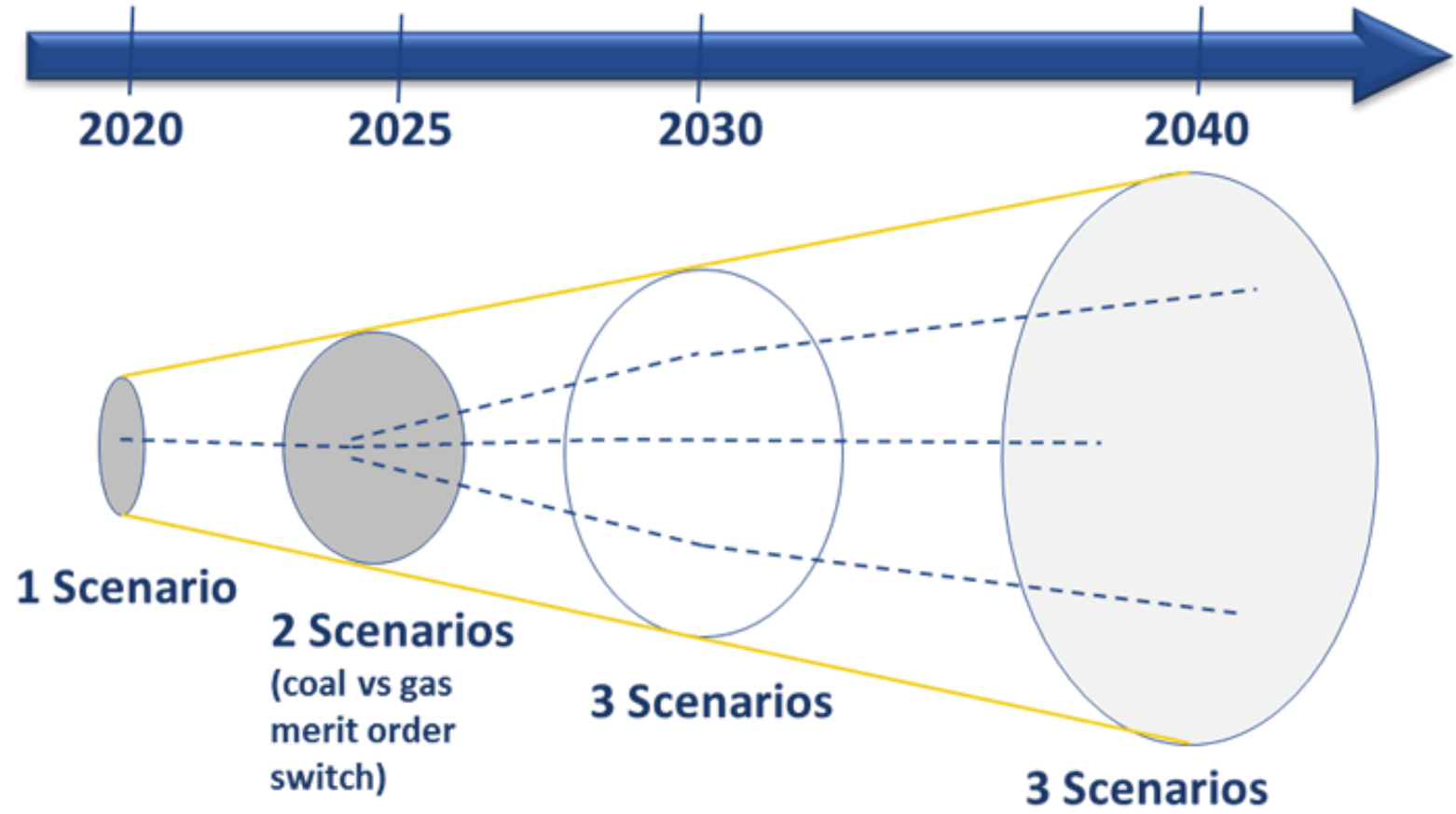
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Scenario Building Process

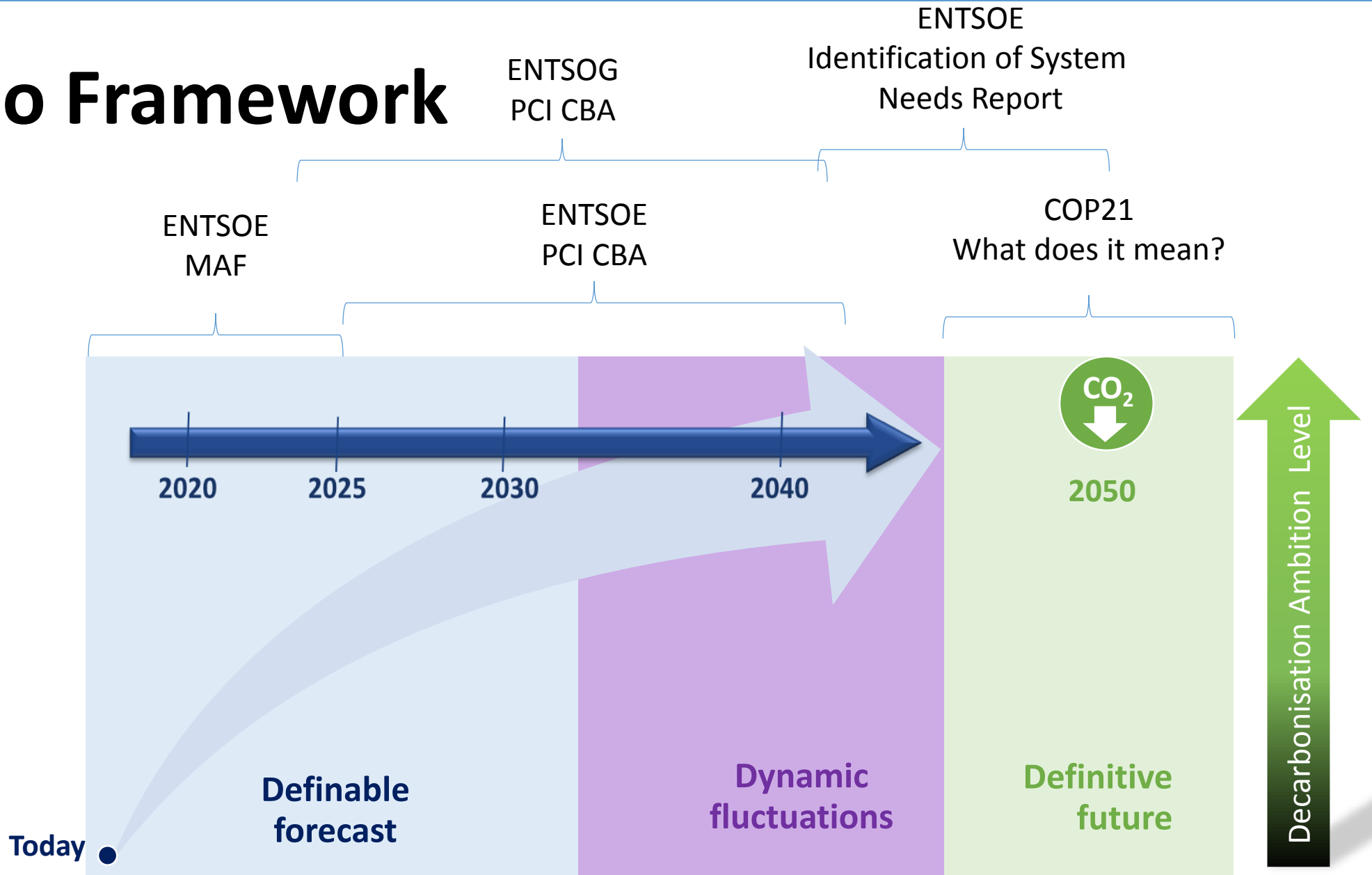


Where we are in the process

Joint ENTSO Scenario Framework



Scenario Framework



3 stages of Energy Transition

■ Definable Forecast

- What we have and what know!

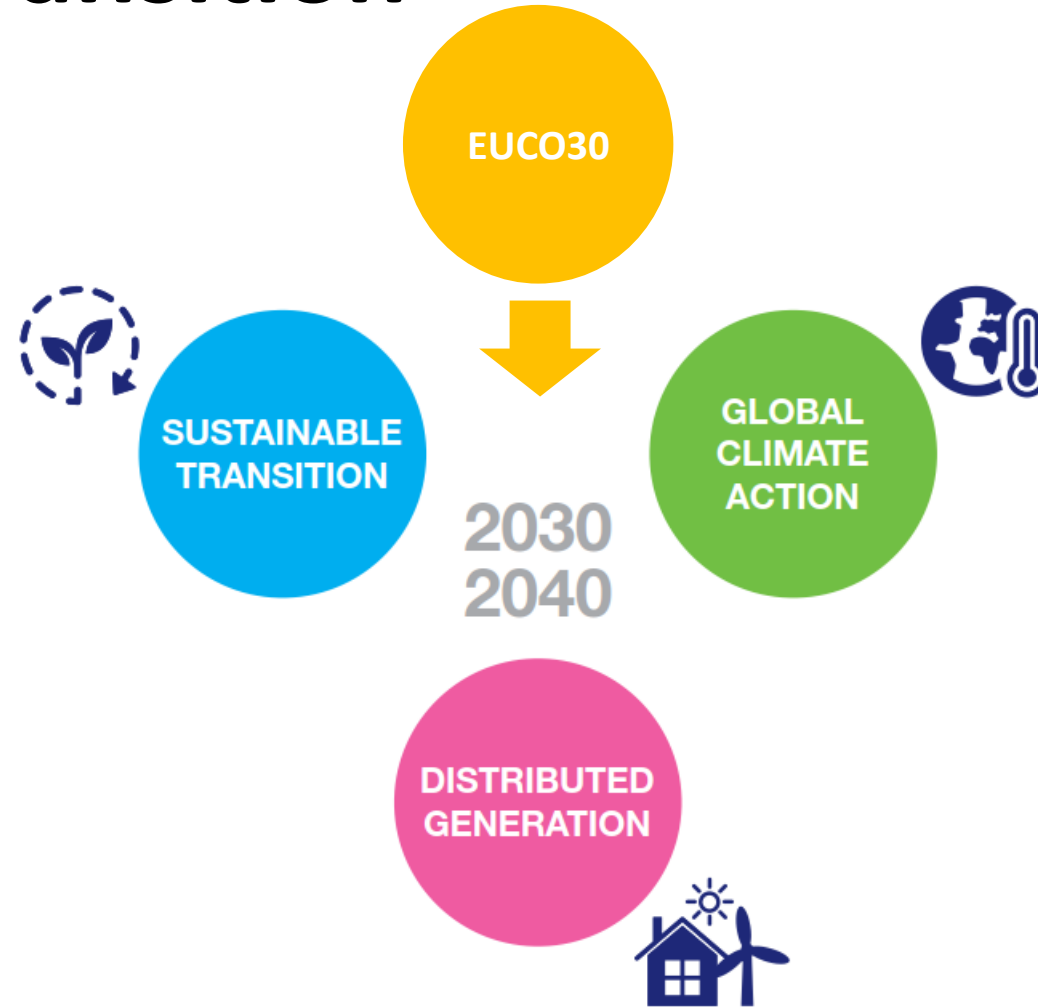
■ Dynamic Fluctuations

- The unknown and unknowable variations!

■ Definitive Future

- Where we need to be!

2050 



3 stages of Energy Transition

■ **Definable Forecast**

- What we have and what know!
 - **What we have achieved, current 2020 Policies**
 - What levels of energy efficiency, RES ambition is set for each member state
 - NDPs provide good
 - **In principle EU wide 2030 Targets are agreed**
 - How we get there is flexible ? Member state targets are not set in stone
 - December 2018 should reveal more certainty
 - **TSO knowledge is a valuable resource!**
 - We view the energy sector from a broader perspective
 - **Reasonable assumptions CAPEX values for highly developed RES and thermal plant**
 - Auction prices available in the short to medium term
 - **Current build out rates and trends at a national level**
 - **Robust population projections - Eurostat**

3 stages of Energy Transition

■ Dynamic Fluctuations

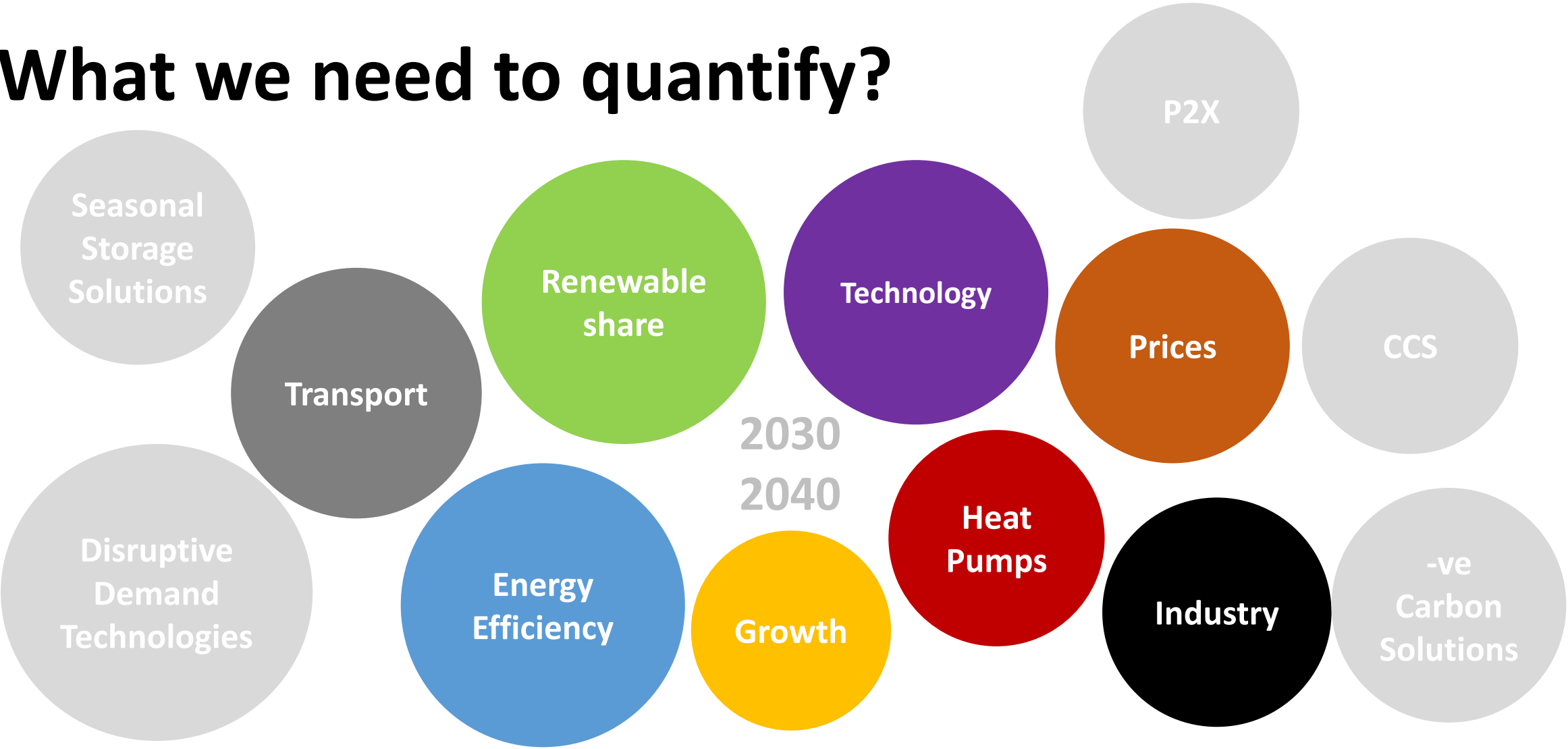
- The unknown and unknowable variations!
 - **Game Changer Technologies** - Where technology breakthroughs or CAPEX collapses the change could be evident 2030
 - CCS - Industry, negative emissions technology
 - Direct Carbon Capture
 - Demand Disruptions – Changes in consumer behaviour
 - Seasonal Storage
 - P2G
 - **Fuel & Carbon Price Uncertainty** – Huge impact on Top-Down Modelling approaches
 - **Unintended outcomes ?** Setting bottom up targets creating unrealistic RES deployment / electrification technology curves for Low RES regions
 - Opportunity to **develop Scenarios** that **create debate** in the **Energy transition**

3 stages of Energy Transition

■ Definitive Future

- Where we need to be!
 - **EHighways**
 - Great information resource for RES potentials
 - **COP21**
 - 3rd Party Co-operation – IRENA, RGI, EC DG ENER G etc
 - Total Energy System Modelling
 - **High RES Markets what makes them work?**
 - New Market designs?
 - Price sensitive demands, P2G?
 - Seasonal Storage?
 - Carbon Pricing
 - **Grid planning that highlights key areas for future development?**

What we need to quantify?

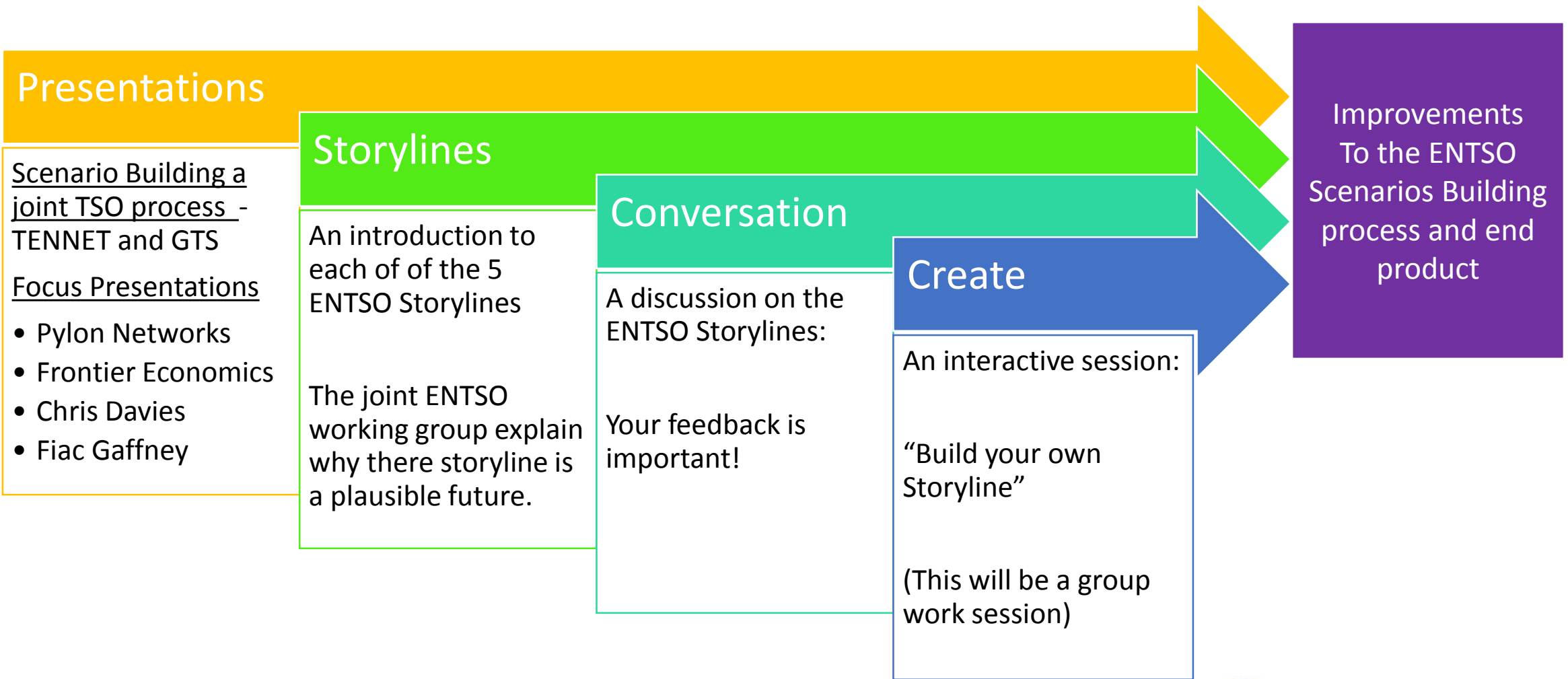


■ Are there technologies and/or policies that we are missing ?

Making the most of Today

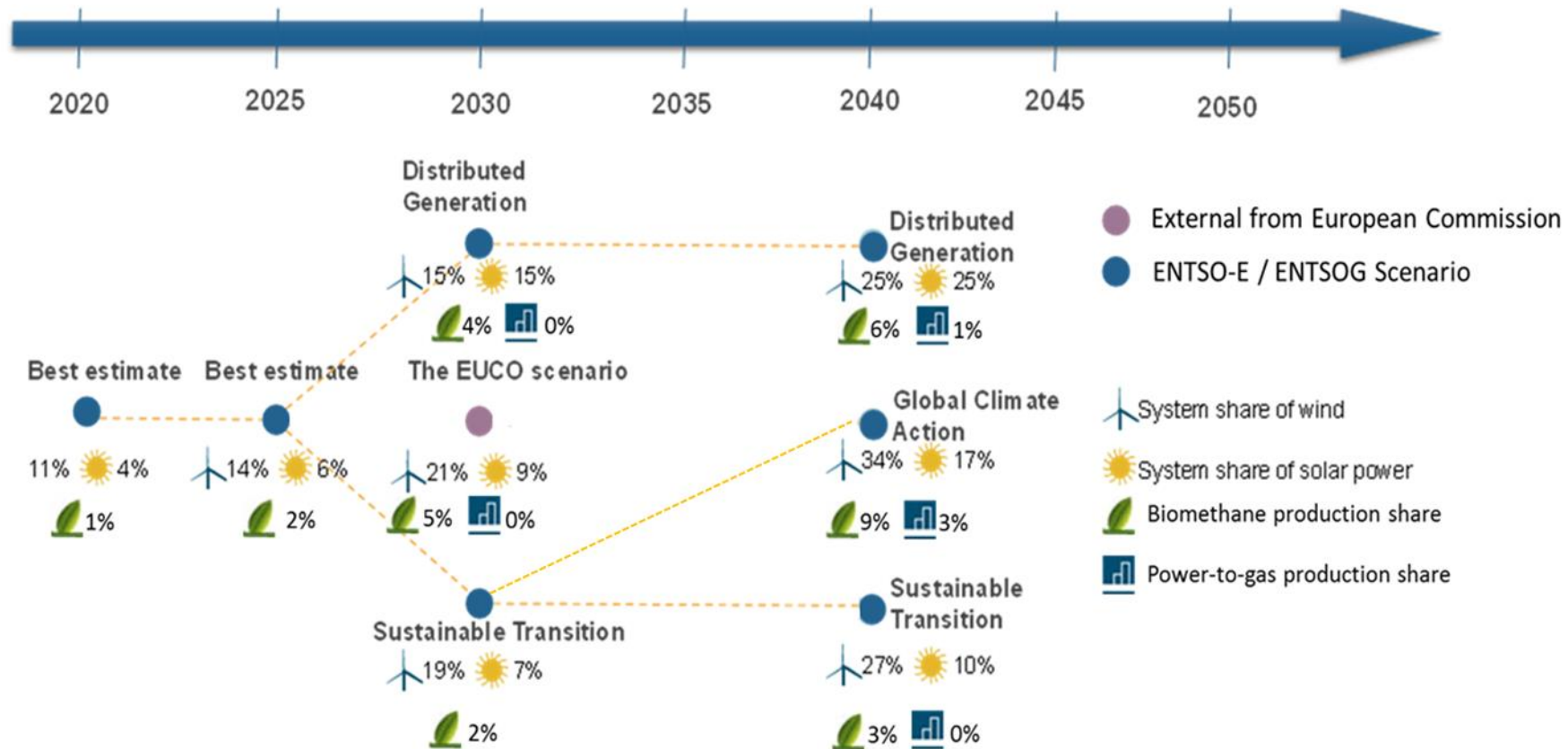
- **This is an interactive session**
 - **Feel free to ask questions**
 - **Be open in discussion groups**
- **This is the first step in the scenario building 2020 process, there is time to make changes**
- **The purpose of storyline development is gauge technology, policy and trends that could transform our thinking on what the future looks like.**
 - **The storylines need to cover a broad range of plausible futures, so that we can be prepared for the future challenges in the Gas and Electricity sectors.**

Today's Agenda



29/05/2018

High Level TYNDP 18 Scenario Overview



Energy Transition 2050

- The ENTSO Scenario Building should represent the pathways for the European Energy Transition

