

TYNDP 2024

Scenario Building

TYNDP 2024 Scenarios Kickoff Workshop

2024 scenarios

20 July 2022 13:00-15:00 CEST



Agenda

Time	Topic	Presenter
13:00 - 13:05	Introduction	Gideon Saunders, ENTSOG
13:05 - 13:15	The revised TEN-E Regulation	Maciej Grzeszczyk, EC
13:15 - 13:25	The Framework Guidelines	Nico Keyaerts, ACER
13:25 - 13:35	Stakeholder Engagement	Gideon Saunders, ENTSOG
13:35 - 13:45	TYNDP 2024 Scenarios Process	Nalan Buyuk, ENTSO-E
13:45 - 13:55	Storyline Matrix	Alexander Kättlitz, ENTSOG
13:55 - 14:05	Interactive Session	All
14:05 - 14:20	Demand Ranges	Joan Frezouls, ENTSOG
14:20 - 14:35	Supply Ranges	Olivier Lebois, RTE
14:35 - 14:45	Interactive Session	All
14:45 - 15:00	Next Steps and Closing Remarks	Gideon Saunders, ENTSOG

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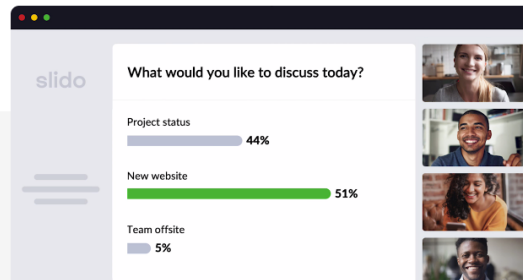


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Throughout the workshop you can ask questions and leave comments. You can also take part in our interactive polls.

What to do:

1. Go to <https://www.sli.do> or scan the QR code
2. Enter the event code “#1546721” and Passcode “Scenarios”
3. Enter your name
4. Start asking questions

Please note that anonymous questions will not be answered.

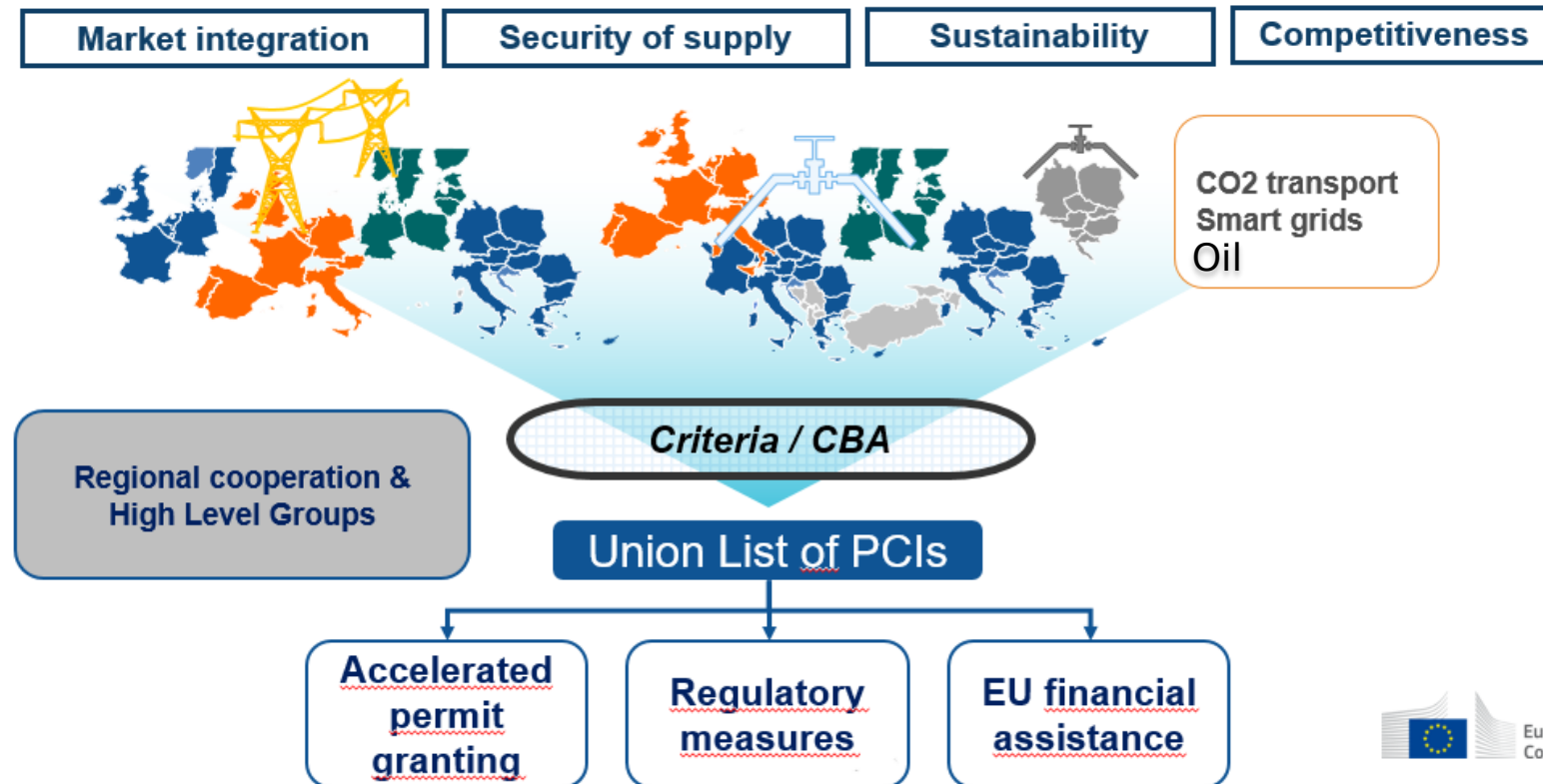


The revised TEN-E Regulation Article 12 Scenarios

2024 TYNDP Scenarios Workshop
20 July 2022



The trans-European energy networks policy



Revised TEN-E: cross-border planning

- New and updated infrastructure categories and a reconfiguration of priority corridors and areas;
- Dedicated offshore planning provisions;
- No oil and natural gas under TEN-E*, but support for hydrogen, electrolysers and local low-carbon and renewable gases;
- Enhanced regulatory and permitting provisions to accelerate PCI implementation;
- Strengthened cross-sectoral energy infrastructure planning;
- Projects of Mutual Interest with third countries



Revised TEN-E: selection of PCIs

- Application of the EE1st principle in all TYNDP and account of the latest Commission scenarios;
- Strengthened consultations with MS and stakeholders and the Advisory Board during the preparation of scenarios, infrastructure gaps and methodologies for CBA;
- Consistency between ENTSOs developed CBA methodologies and methodologies “outside” TYNDP such as electricity storage, hydrogen, electrolysers, smart gas grids and CO2 networks;
- Commission approval of scenarios and CBA methodology; ACER opinion on scenarios and CBA.

Article 12 – Scenarios for TYNDP (1)

ACER: by 24 January 2023 to publish framework guidelines for the joint scenarios

- Based on an extensive consultation
- Application of the EE1st principle
- Alignment with the Unions energy and climate targets, the latest Commission scenarios and NECPs (when relevant)
- Active role of the European Scientific Advisory Board

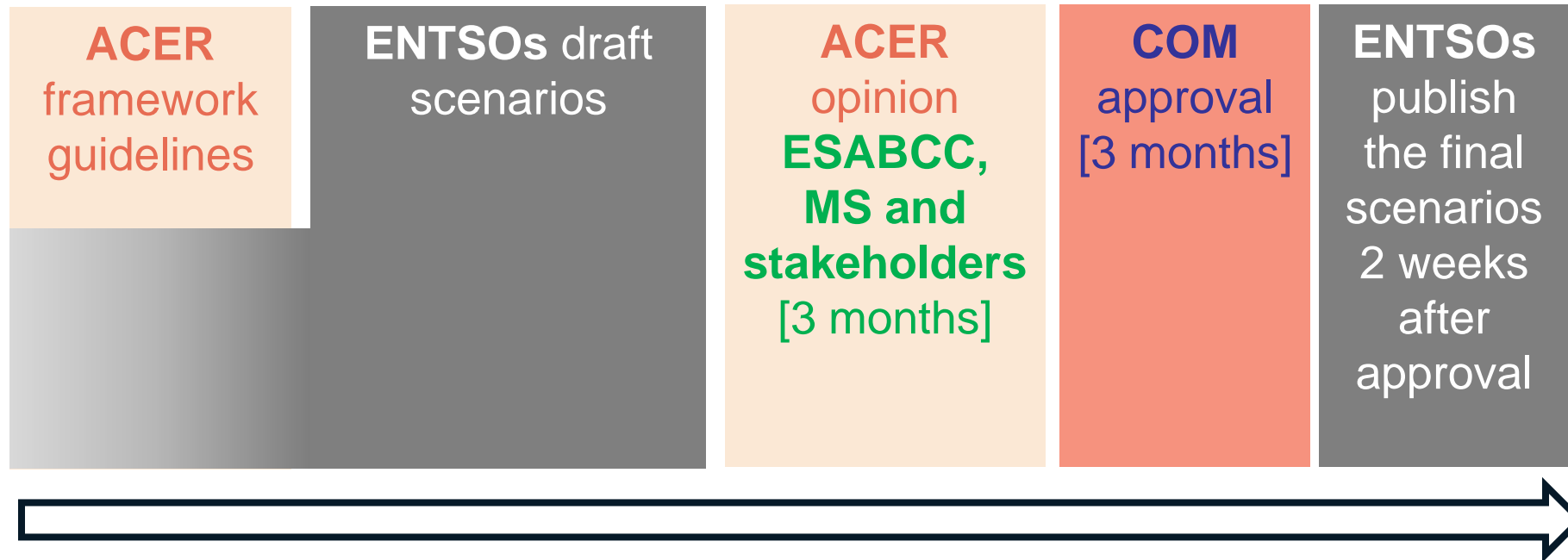
Article 12 – Scenarios for TYNDP (2)

ENTSOs for the scenario development process shall:

- follow the guidelines
- invite the organisations representing all relevant stakeholders, including:
 - EU DSO entity,
 - associations involved in electricity, gas and hydrogen markets,
 - H&C, CCS and CCU stakeholders,
 - independent aggregators,
 - demand-response operators,
 - organisations involved in energy efficiency solutions,
 - energy consumer associations,
 - civil society representatives,

Article 12 - Process

24 Jan 2023





European Union Agency for the Cooperation
of Energy Regulators

ACER Framework Guidelines On Scenarios

Nico Keyaerts,

ACER - Infrastructure, Gas and Retail Department

ENTSO-E & ENTSOG kick-off webinar on the scenarios
for the 2024 TYNDPs, 20 July 2022

PUBLIC

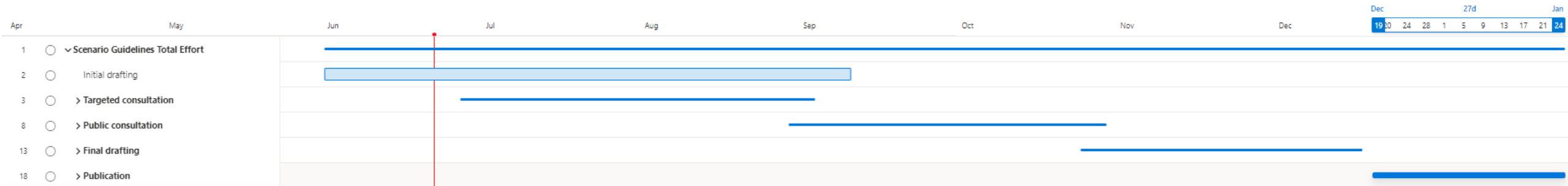
ACER's role in Framework Guidelines Article 12(1), TEN-E Recast

By 24 January 2023, the Agency, after having conducted an **extensive consultation** process involving the Commission, the Member States, the ENTSO for Electricity, the ENTSO for Gas, the EU DSO entity and at least the organisations representing associations involved in electricity, gas and hydrogen markets, heating and cooling, carbon capture and storage and carbon capture and utilisation stakeholders, independent aggregators, demand-response operators, organisations involved in energy efficiency solutions, energy consumer associations and civil society representatives, shall **publish the framework guidelines for the joint scenarios** to be developed by ENTSO for Electricity and ENTSO for Gas. Those guidelines shall be regularly updated as found necessary.

The guidelines shall establish **criteria for a transparent, non-discriminatory and robust development of scenarios** taking into account best practices in the field of infrastructures assessment and network development planning. The guidelines shall also aim to **ensure that** the underlying ENTSO for Electricity and ENTSO for Gas **scenarios are fully in line with the energy efficiency first principle and with the Union's 2030 targets for energy and climate and its 2050 climate neutrality objective** and shall **take into account the latest available Commission scenarios, as well as**, when relevant, the **national energy and climate plans**.

The European Scientific Advisory Board on Climate Change may, on its own initiative, provide input on how to ensure compliance of scenarios with the Union's 2030 targets for energy and climate and its 2050 climate neutrality objective. The Agency shall take duly into account that input in the framework guidelines referred in the first subparagraph.

The Agency shall provide reasons where it has not, or has only partly, taken into account the recommendations from Member States, stakeholders and the European Scientific Advisory Board on Climate Change.



Extensive stakeholder engagement

- Consultation of particular stakeholders* through technical workshops
- Public consultation

ACER  THE AGENCY ELECTRICITY GAS GREEN DEAL REMIT DOCUMENTS EVENTS & ENGAGEMENT DATA [EXTRANET](#) 

8.7.2022

ACER will adopt new framework guidelines on scenarios for network development planning



Share on:

* the Commission, the Member States, the ENTSO for Electricity, the ENTSO for Gas, the EU DSO entity and at least the organisations representing associations involved in electricity, gas and hydrogen markets, heating and cooling, carbon capture and storage and carbon capture and utilisation stakeholders, independent aggregators, demand-response operators, organisations involved in energy efficiency solutions, energy consumer associations and civil society representatives

Stakeholder Engagement, Gideon Saunders, ENTSOG

Stakeholder Engagement

What's new in the 2024 Scenario Process?

- Success from 2022 cycle – consulting earlier and with greater detail provided more/clearer feedback from stakeholders
- Goal for 2024 cycle – **Go further than before**
 - First phase of scenario development will focus on demand and supply data
 - First public consultation (autumn 2022) will focus on demand scenarios and supply data instead of storylines
- This will allow us to finalise figures before beginning modelling

As always:

- All scenario data will be made open-source and publicly available (via our website)
- Consultations will be open to anyone and all feedback will be made available along with responses from the Scenario Building Team (via our website)
- Public webinars/workshops – such as this one – will be organised throughout the process to keep stakeholders engaged and informed
- All bilateral meetings will be listed on our website to ensure transparency

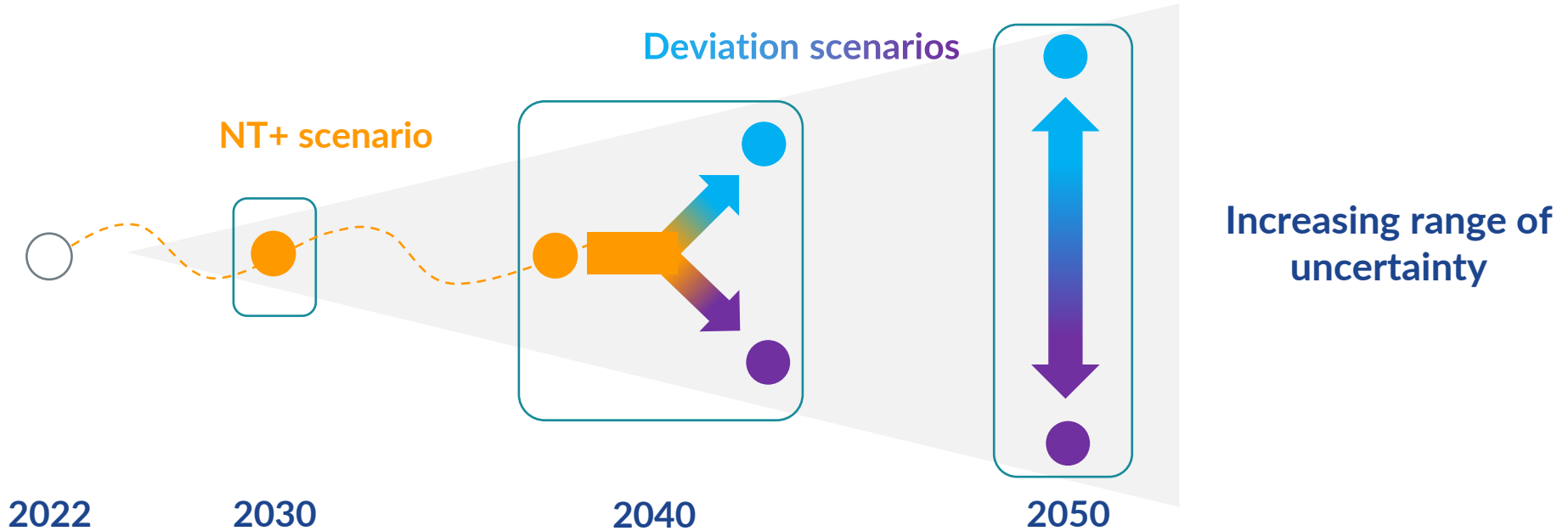
Stakeholder Engagement

How can stakeholders get involved in the TYNDP 2024 scenario process?

- Send us your views
 - Stakeholders are invited to provide feedback between now (the webinar) and October in order to factor their expertise prior to the public consultation → We welcome bilateral meetings
 - The Excel version of the graphs is available with the workshop package to foster stakeholder feedback
- Take part in our public consultations
 - October/November 2022 – Consultation on demand scenarios and supply/generation data
 - June/July 2023 – Consultation of the draft scenarios
- Join our webinars
 - Future webinars to follow during the consultation periods in order to answer questions and present results/assumptions

TYNDP 2024 Scenarios Process, Nalan Buyuk, ENTSO-E

New Scenario Approach



National Trends + Scenario


- The aggregation of national approaches that reaches EU target,
- Includes all energy carrier and relies on the TSO data

Deviation Scenarios (DE & GA)

- Deviation from National Trends + scenario to capture uncertainties and reach EU targets
- Deviation is based on the storyline which relies on both TSO & Stakeholder input and feedbacks

Storyline Matrix, Alexander Kättlitz, ENTSOG

Storyline Matrix

	Distributed Energy Higher European autonomy with renewable and decentralised focus	National Trends + The aggregation of national pathways to reach EU targets	Global Ambition Global economy with centralised low carbon and RES options
Green Transition	Fully in line with the energy efficiency first principle and with the Union's 2030 targets for energy and climate and its 2050 climate neutrality objective		
Driving force of the energy transition	Transition initiated at a local/national level (prosumers)	 <p style="font-weight: bold; color: blue;">Deviation extent will depend on "National Trends +" setting resulting from national perspectives</p>	Transition initiated at a European/international level
	Aims for EU energy-independence and strategic independence through maximisation of RES and smart sector integration (P2G/P2L/P2M)		High EU RES development supplemented with low carbon energy and diversified Imports
Energy efficiency	Reduced energy demand through circularity and better energy consumption behaviour		Reduced energy demand with priority is given to decarbonisation and diversification of energy supply.
	Digitalisation driven by prosumer and variable RES management		Digitalisation and automation reinforce competitiveness of EU business.
Technologies	Focus of decentralised technologies (PV, batteries, etc.) and smart charging		Focus on large scale technologies (offshore wind, large storage)
	Focus on electric heat pumps and district heating		Focus on a wide range of heating technologies e.g. hybrid heating technology
	Higher share of EV, with e-liquids and biofuels supplementing for heavy transport		Wide range of technologies and energy carriers across mobility sectors (electricity, hydrogen, e-liquids and biofuels)
	Minimal CCS and nuclear		Integration of nuclear and CCS

Interactive Session

Storyline Matrix

1. *What do you think about the new scenario approach; policy-driven scenario in the short term and exploring uncertainty in the long-term?*
2. *How do you consider the additions to the previous storyline (elements in green)?*
3. *Do you see any other drivers that could be embedded into the storyline? If yes, how it could be implemented and be used to differentiate scenarios?*

Demand Ranges, Joan Frezouls, ENTSOG

Demand ranges

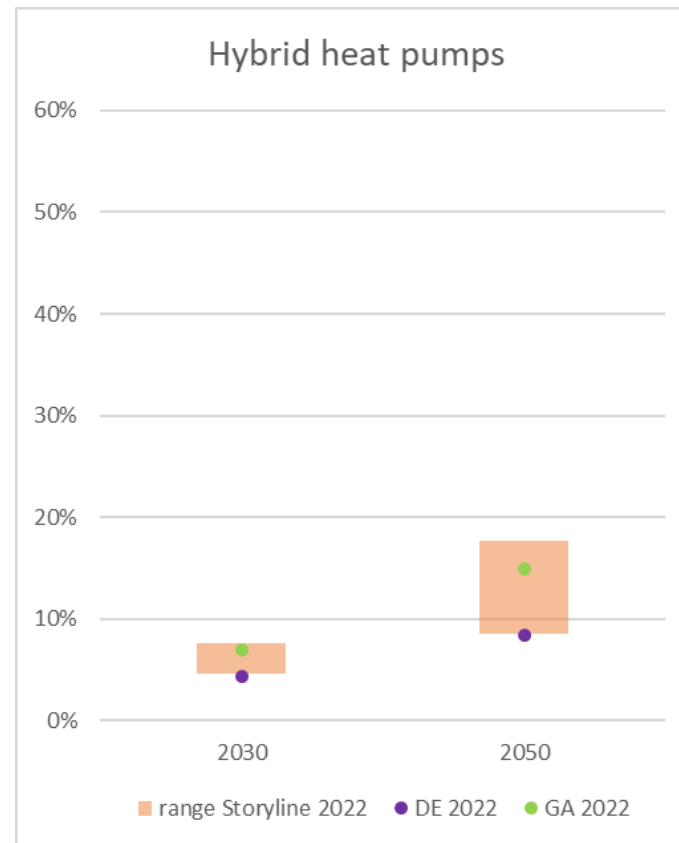
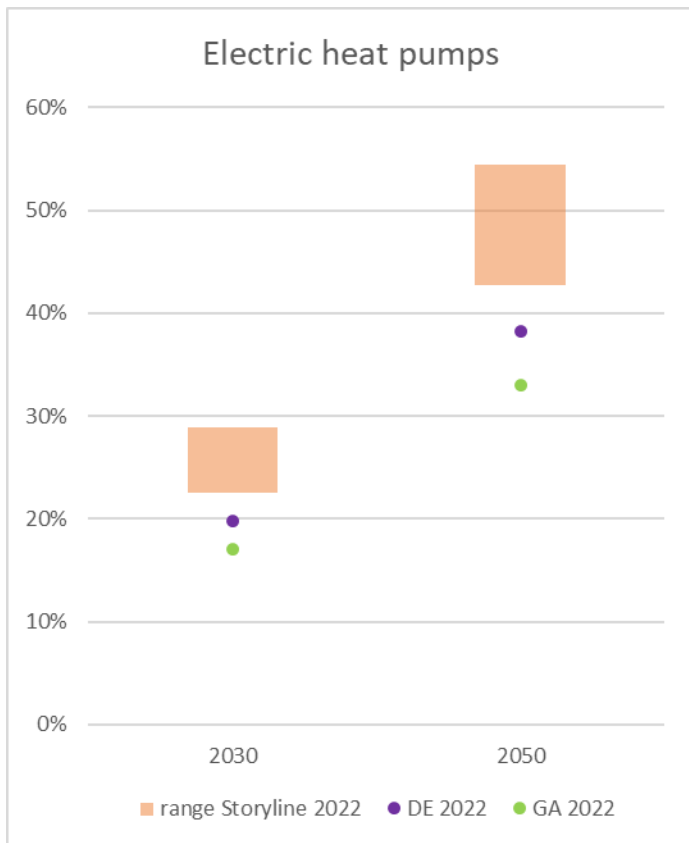
TYNDP 2022 Scenarios were built on late 2020 assumptions

The present benchmarks compare the TYNDP 2022 scenarios (April version) with Storyline report

Stakeholder engagement for the TYNDP 2024 scenario process

- Demand data will be submitted to public consultation during autumn 2022
- Stakeholders are invited to provide feedback between today and October in order to factor their expertise prior to the public consultation
- The Excel version of the graphs is available with the workshop package to foster stakeholder feedback

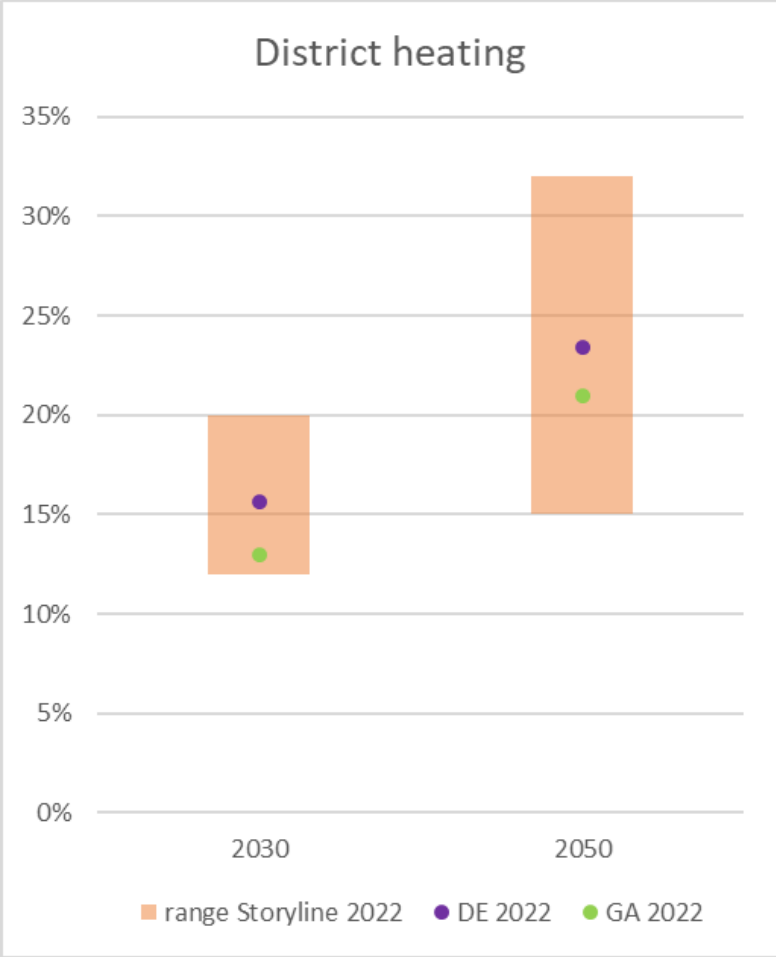
Storyline Ranges - Heat Pumps



DE and GA are below the proposed ranges.
This is the outcome of the TSOs review.

In addition, we also see heat pumps being
used for district heating.

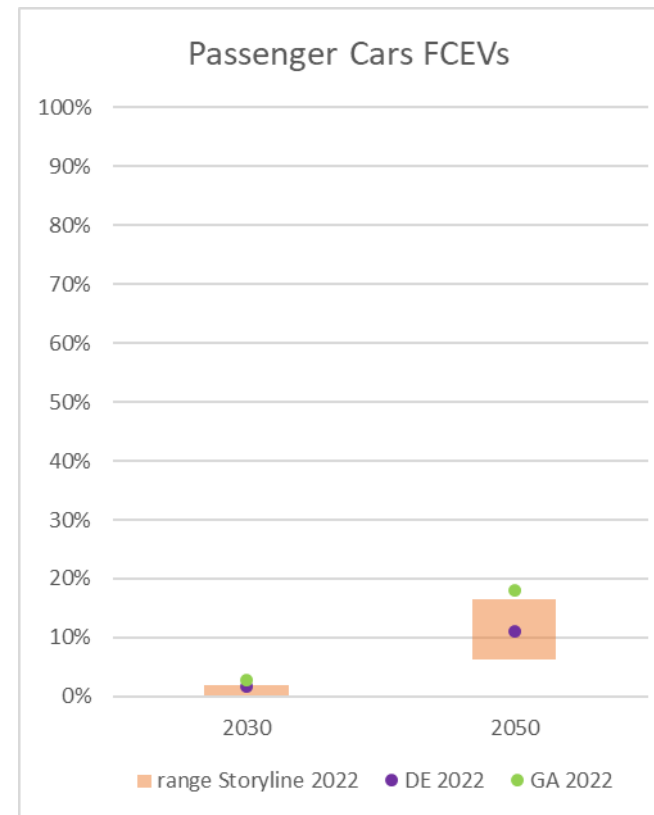
Storyline Ranges – District heating



Storyline Ranges – Passenger cars

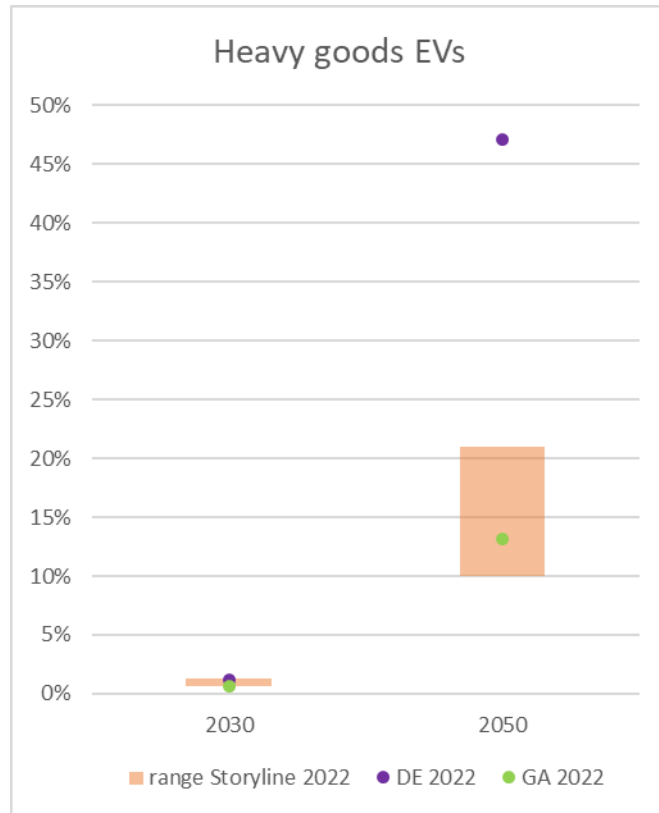


DE is higher than the storyline range in 2030 because stakeholders' feedback has been considered.



GA is higher than the storyline range because stakeholders' feedback has been considered.

Storyline Ranges – Heavy goods



Stakeholders have recommended to increase the heavy goods EVs share for DE 2050.

Supply Ranges, Olivier Lebois, RTE

Supply ranges

TYNDP 2022 Scenarios were built on late 2020 assumptions

- RES trajectories derive from the public consultation on Draft Storyline
- Business and policy perspectives have evolved since
- The “Most ambitious national scenario” is based on National Trends scenario with higher values where some state policies are available

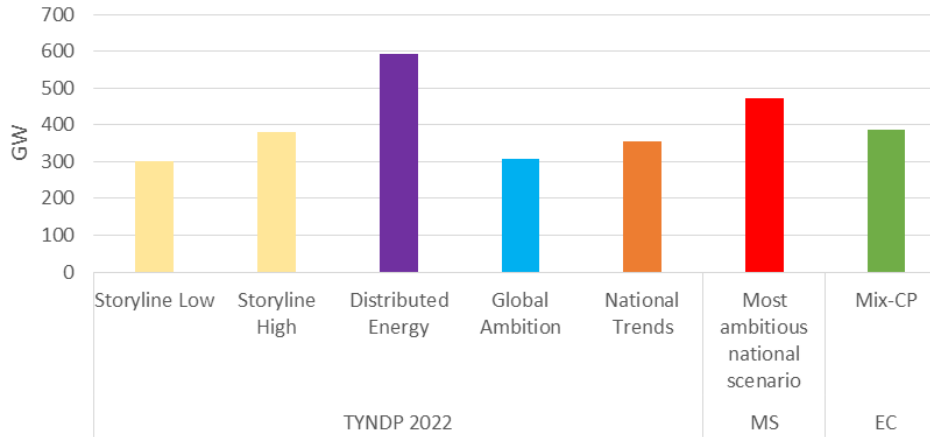
The present benchmarks compare the TYNDP 2022 scenarios (April version) with 2021 Storyline report and EC latest scenarios

Stakeholder engagement for the TYNDP 2024 scenario process

- Supply data will be submitted to public consultation during autumn 2022
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Solar in 2030

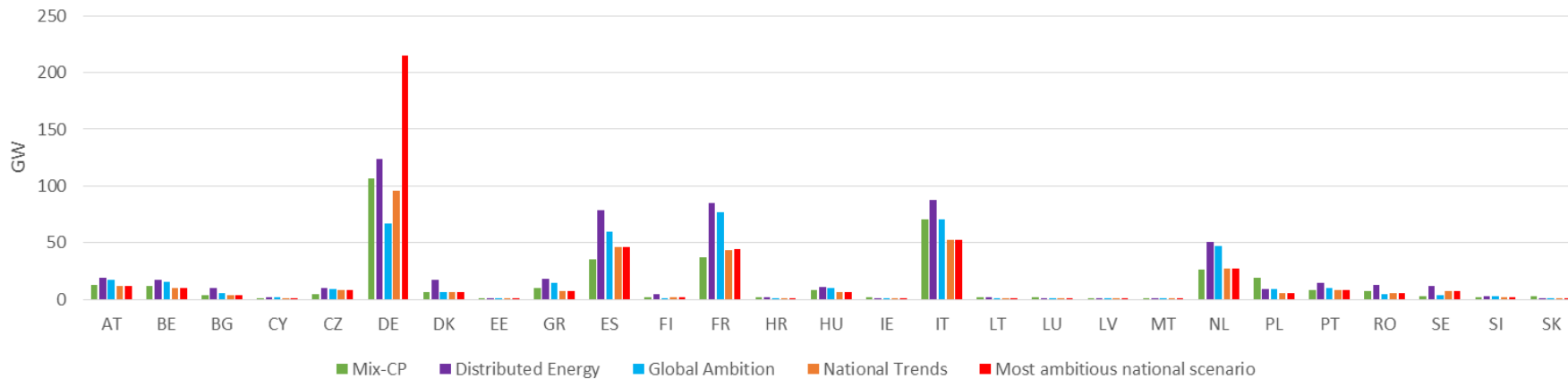
Solar in EU27 - 2030



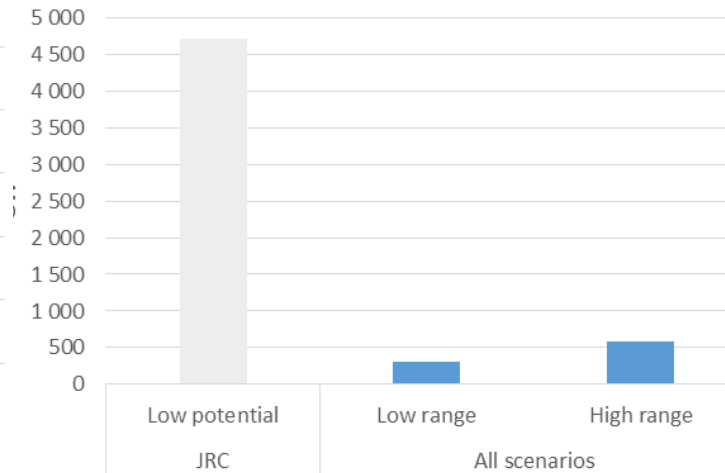
A wide range of scenarios with an upward trend

- GA is within the storyline range while DE is above as only the 2050 part of the range was increased after the storyline public consultation
- Some new national targets (e.g. Easter Package in Germany) and European communication point at level consistent with DE
- The use of solar potential as identified by JRC stay low (possibly as not embedded in building renovation/construction standards)

Solar in EU27 - 2030

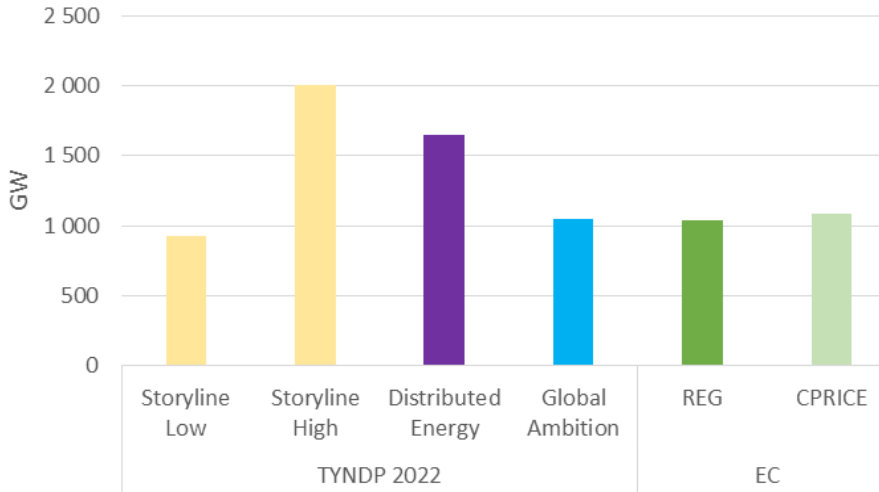


Solar in EU27 - 2030



Solar in 2050

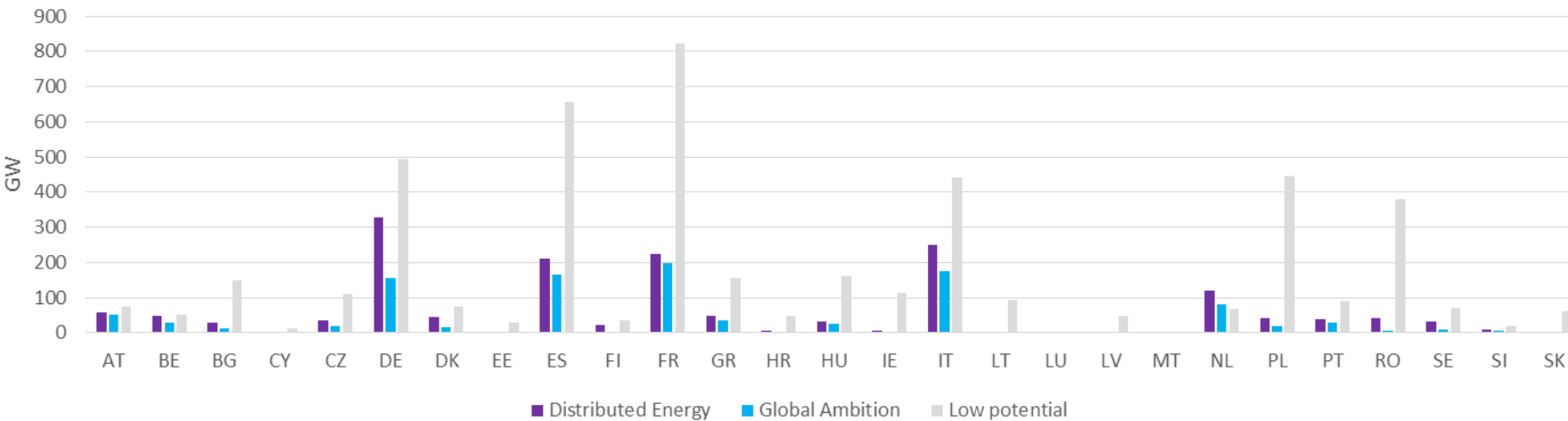
Solar in EU27 - 2050



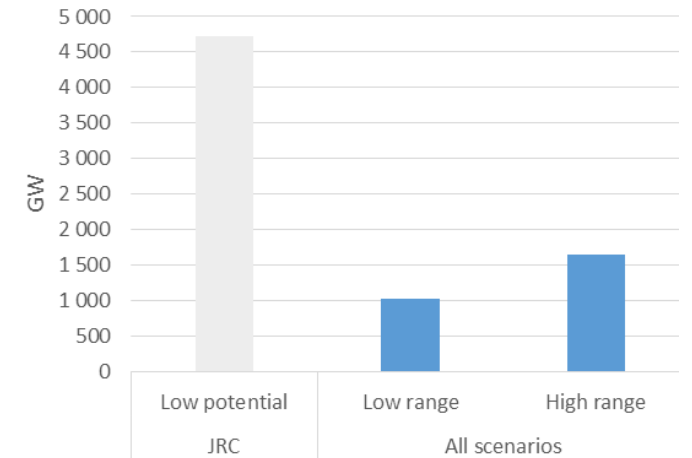
Solar capacity, a differentiation factor between scenarios

- DE and GA are within the storyline range
- Solar capacity in DE is close to 60% above the one in GA as it is a technology linked to the level of decentralization of the energy system
- In any case technical potential seems much higher

Solar in EU27 -2050

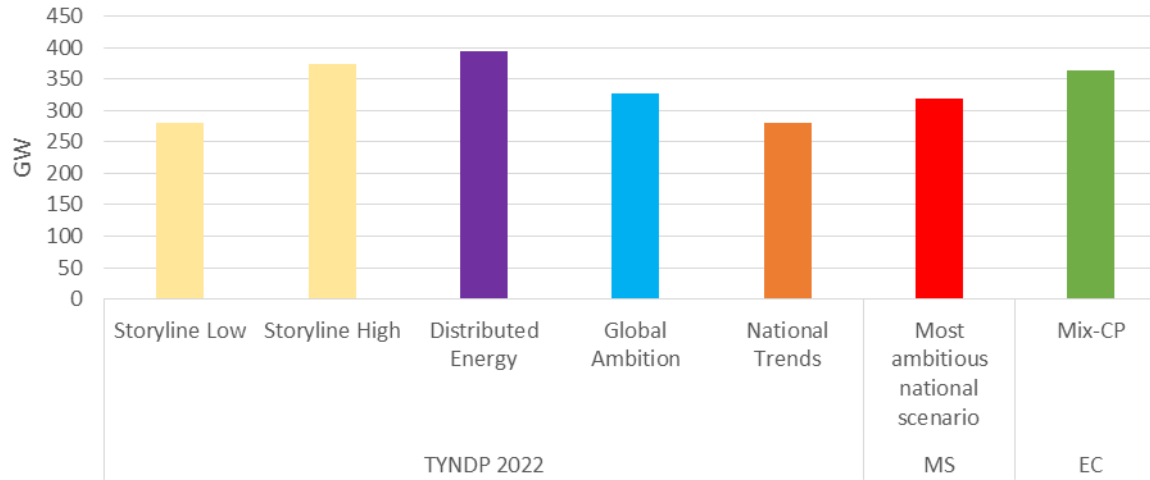


Solar in EU27 - 2050



Onshore wind in 2030

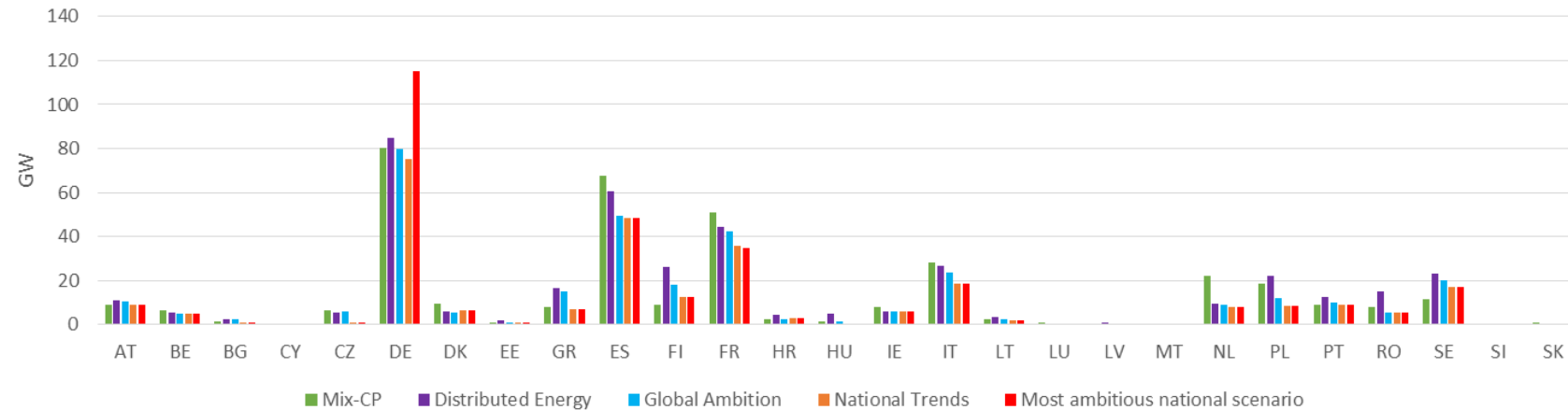
Onshore wind in EU27 - 2030



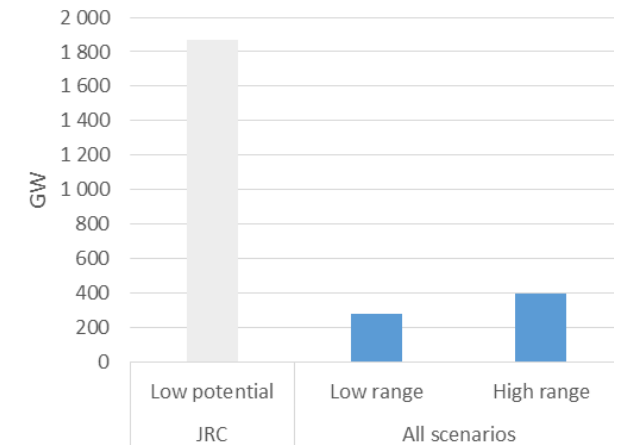
A wide range of scenarios with an upward trend

- GA is within the storyline range while DE is slightly above the upper range
- Onshore wind stay symptomatic of a high potential and some acceptability challenges

Onshore wind in 2030

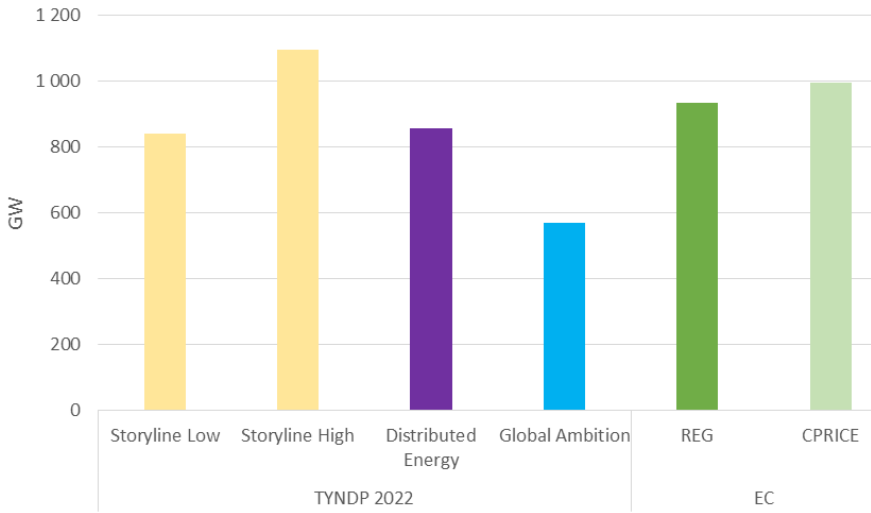


Onshore wind in EU27 - 2030



Onshore wind in 2050

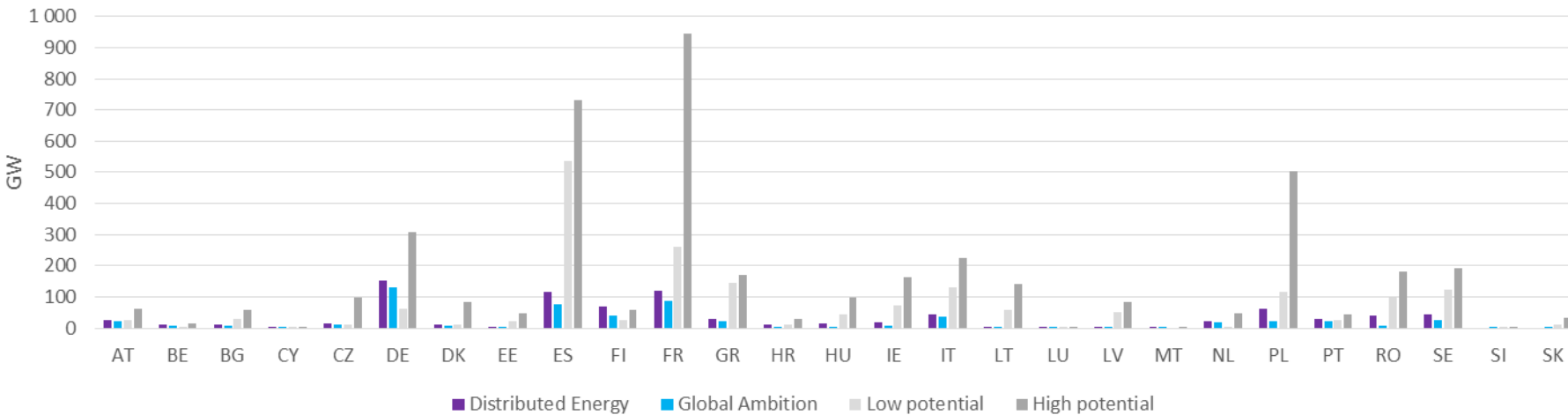
Onshore wind in EU27 - 2050



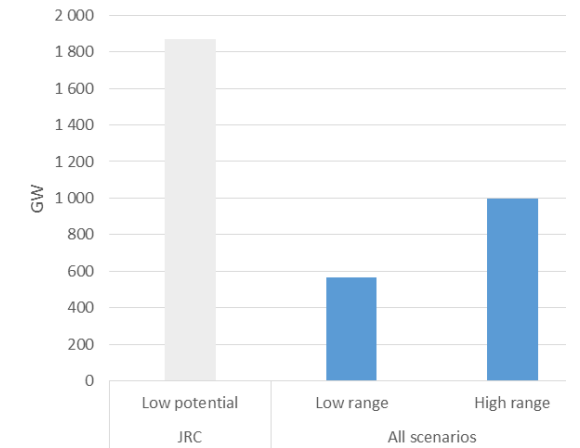
A slower 2030-2050 development trend

- Compared to 2030, DE drops to the lower part of the range and GA falls below
- DE and GA are below Impact Assessment level and the low potential identified by JRC

Onshore wind in 2050

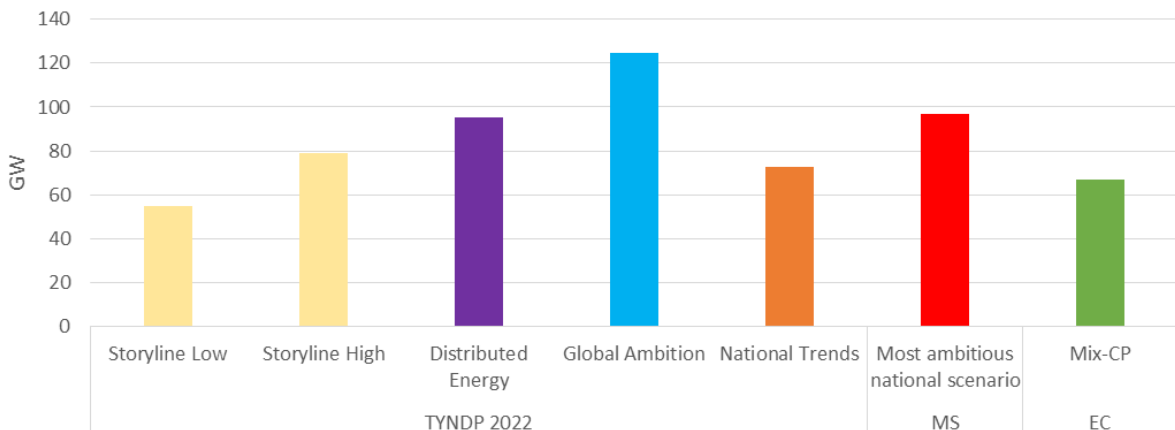


Onshore wind in EU27 - 2050



Offshore wind in 2030

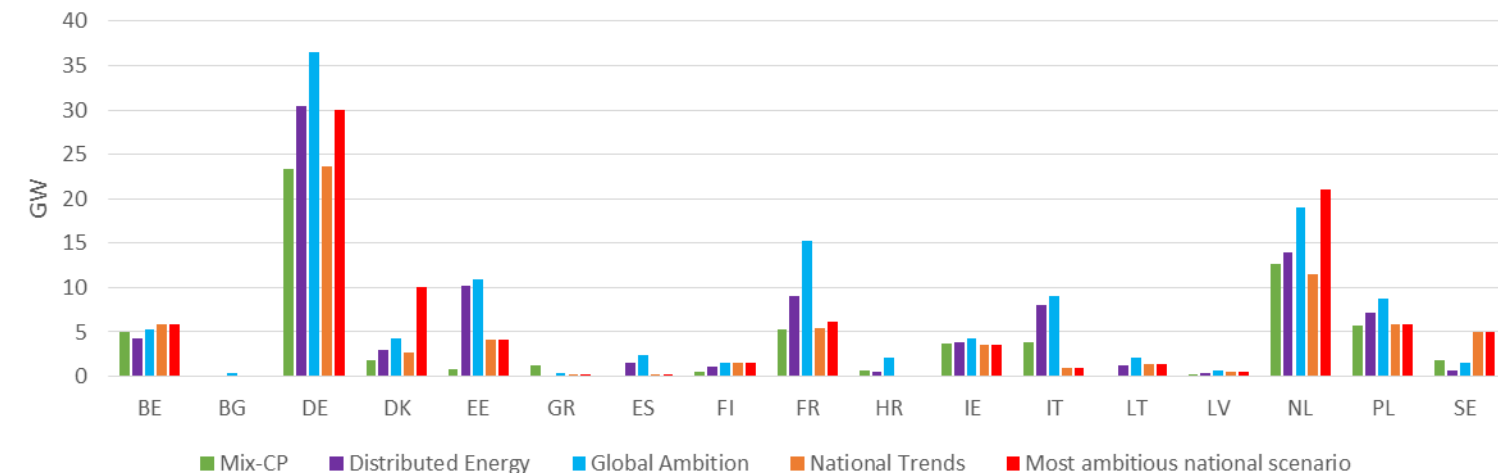
Offshore wind in EU27 - 2030



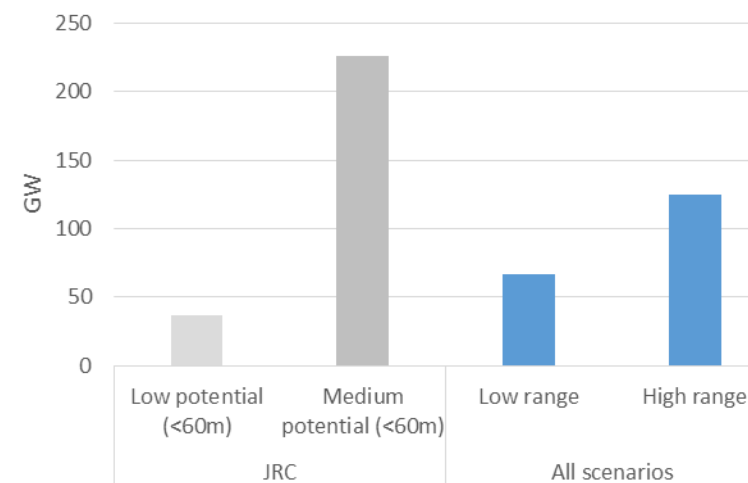
A fast evolving ambition

- DE and GA scenarios are above the targeted range at storyline level
- DE is very close from the newest national ambition (e.g. BE, DE, DK and NL joint statement in North Sea ambition)
- A technology with high ambition compared to the <60m depth potential (from JRC)

Offshore wind - 2030

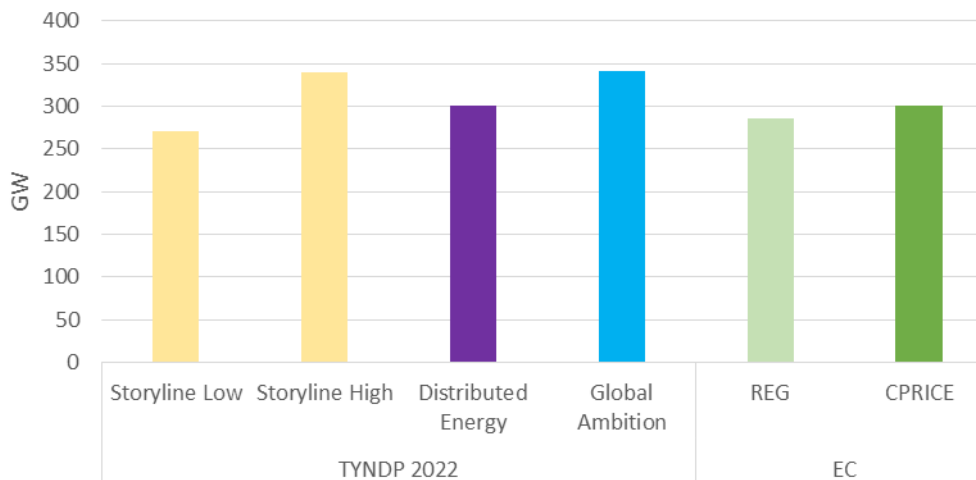


Offshore wind in 2030 - EU27



Offshore wind in 2050

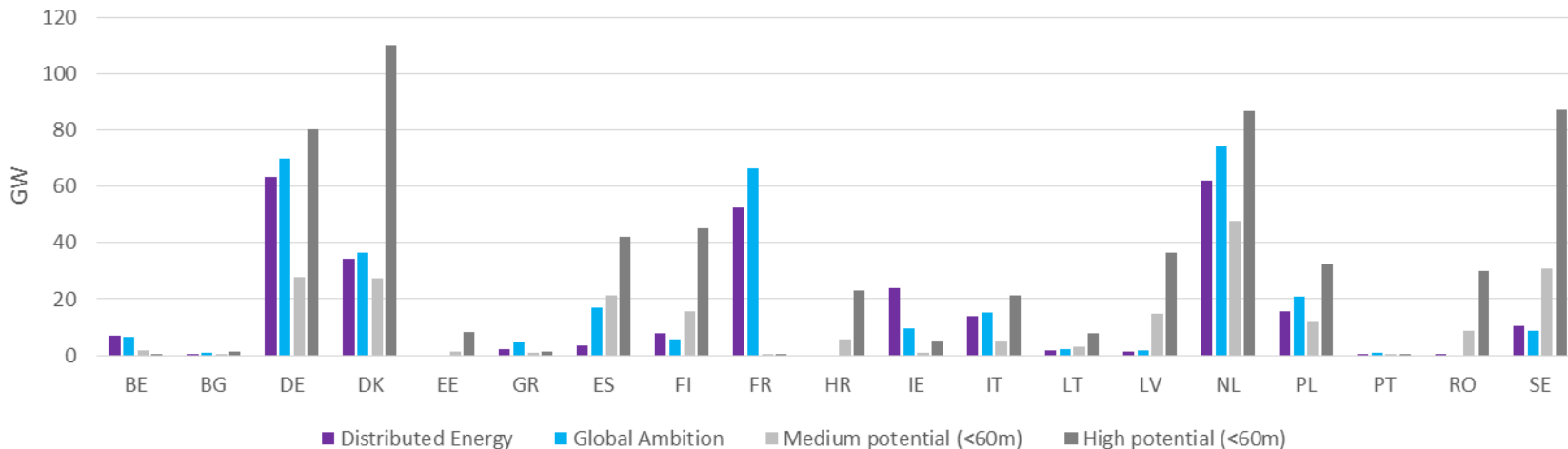
Offshore wind in EU27 - 2050



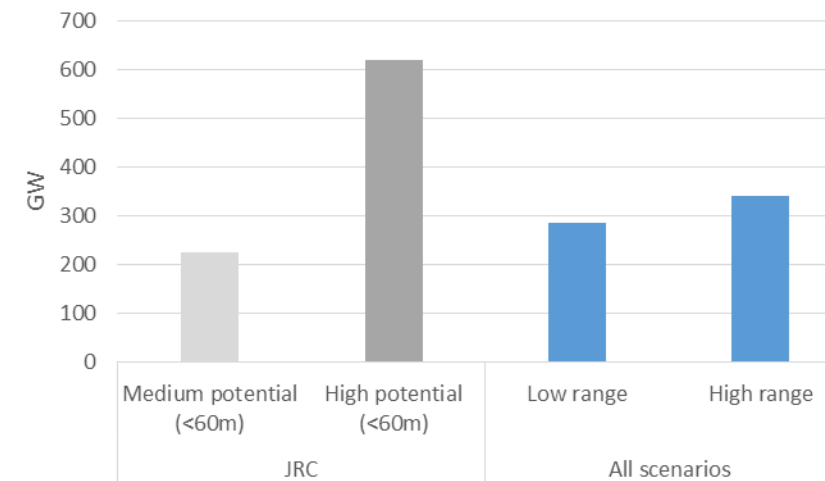
Consistent views for 2050

- DE and GA scenarios are within the targeted range at storyline level
- DE is very close from Impact Assessment scenarios and the 300 GW aimed by the Offshore Renewable Energy strategy
- Offshore wind (<60 m) is the only technology for which scenarios go beyond the EU27 medium potential

Offshore wind in EU27 - 2050

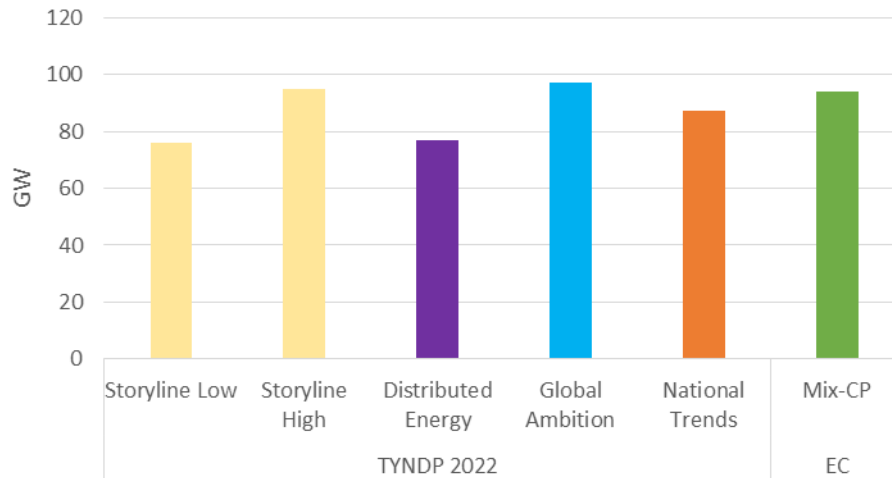


Offshore wind in EU27 - 2050



Nuclear in 2030

Nuclear in EU27 - 2030

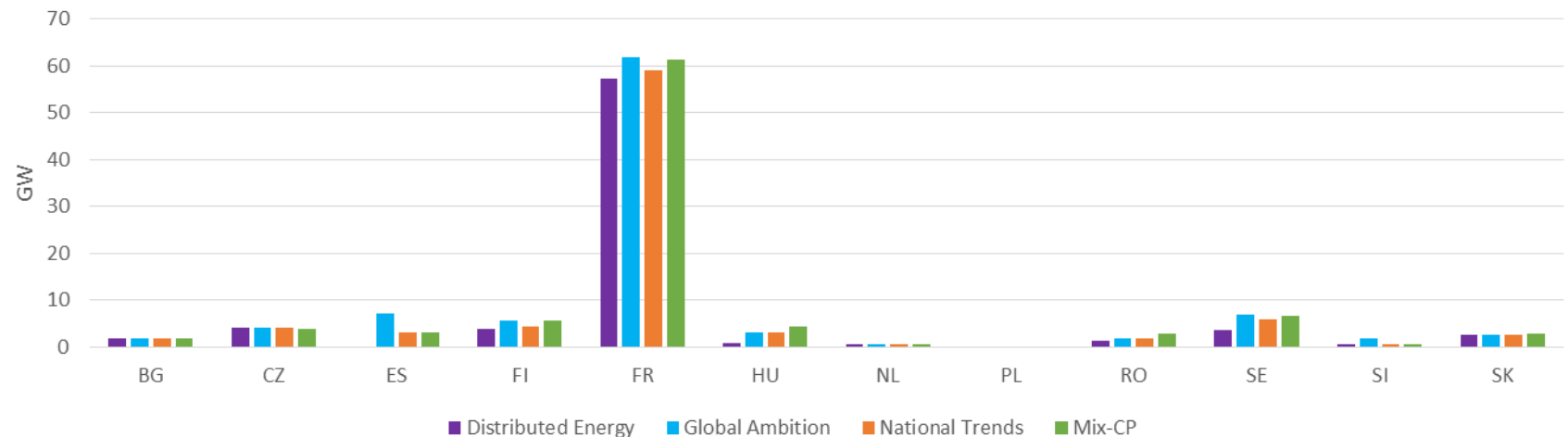


A significant differentiation as soon as 2030

- Scenarios are within the storyline range
- DE and GA are respectively 10 GW below and above National Trends capacity (87 GW)
- Following nuclear policy of Member States is a priority given its potential impact on scenarios

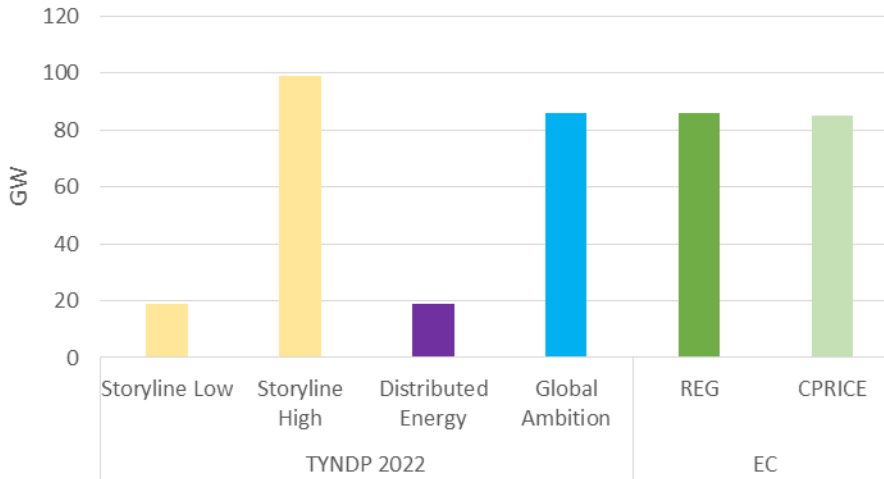
As a difference with wind and solar capacity resulting from an investment loop, nuclear capacity is defined for each time horizon based on the storyline

Nuclear in EU27 - 2030



Nuclear in 2050

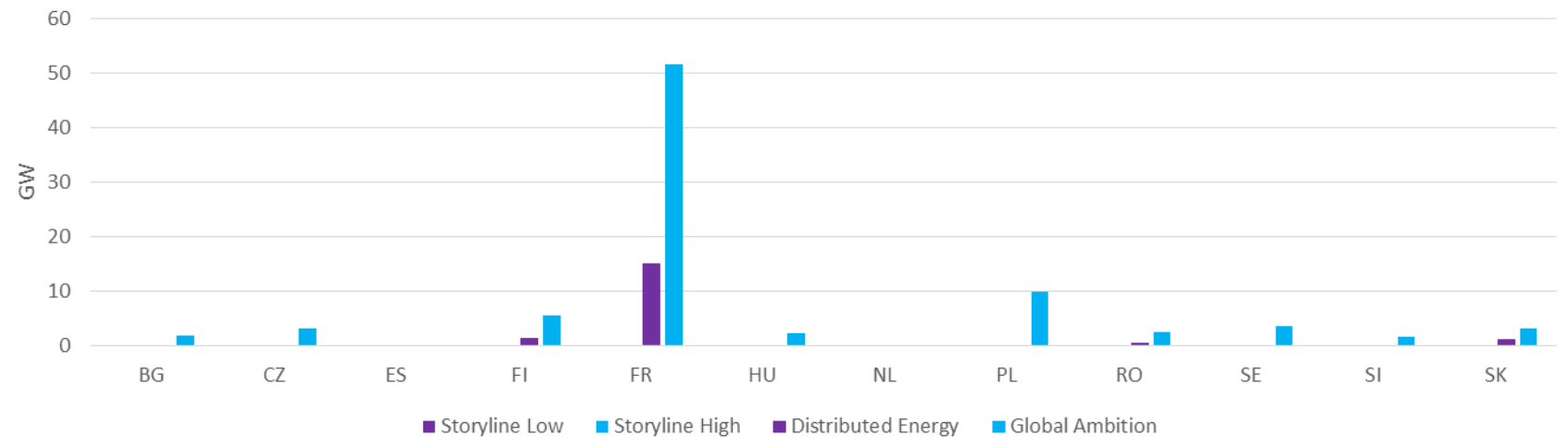
Nuclear in EU27 - 2050



An even stronger differentiation in 2050

- DE and GA are within the storyline range
- DE is on the path of a 100% RES scenario
- GA is very close from EC Impact Assessment scenarios

Nuclear in EU27 - 2050



Interactive Session

Storyline Ranges

1. *Which other technology do you consider as a key for the scenario development for the differentiation of the scenarios?*

Next Steps & Closing Remarks, Gideon Saunders, ENTSOG

Next Steps

What can stakeholders expect in the coming months?

- *The material of this workshop incl. datasets and graphs will be made publicly available (via the Scenarios website)*
- *All stakeholders are encouraged to provide feedback and reach out to us to set bilateral meetings for more detailed discussion*
- *The Storyline Report will be published in October*
- *Immediately following the publication of the Storyline Report, a public consultation will be opened where all stakeholders are invited to provide their feedback*
 - *A further workshop will be organised to present the storylines and datasets and give stakeholders a chance to ask questions and provide their thoughts*

Thank you for your attention

Location: online

Date: 20.07.2022

