

# ERAA 2021 – Key takeaways and results

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# Purpose of the ERAA

- The ERAA is driven by both **legal mandate** and **needs of stakeholders**.
- A successor to the MAF, it is a **pan-European monitoring assessment of power system resource adequacy**.
- Based on a **state-of-the-art** and **probabilistic analysis**.
- A gradual implementation is followed in line with **ACER's methodology**.
- The ERAA 2021 already provides **an effective tool to understand adequacy** in the coming decade which is pivotal for the energy transition. It contributes to ensuring secure and affordable energy to society.
- Building on this first ERAA, **stakeholder feedback and ACER's review**, the next ERAA2022 is being initiated.

# ERAA Scenarios



# Scenarios

2025 2030

## NATIONAL ESTIMATES (2025 AND 2030)

TSO's provide forecasts for capacity based on planned lifetime, new generation estimates and national policy plans.

National estimates

Without CM

With CM

Low thermal



## CENTRAL SCENARIO WITHOUT CAPACITY MECHANISM (2025)

Economic Viability Assessment carried out, accounting for forecasted carbon price and market price cap (VOLL)

## CENTRAL SCENARIO WITH CAPACITY MECHANISM (2025)

As above, with addition of capacity needed to meet system reliability standards in countries with an approved capacity mechanism.

## NATIONAL ESTIMATES WITH LOW THERMAL CAPACITY (2025 AND 2030)

Acts as a stress test: bottom-up estimation of thermal generation phase out through policy measures and economic factors.

# Our scenarios enable new insights

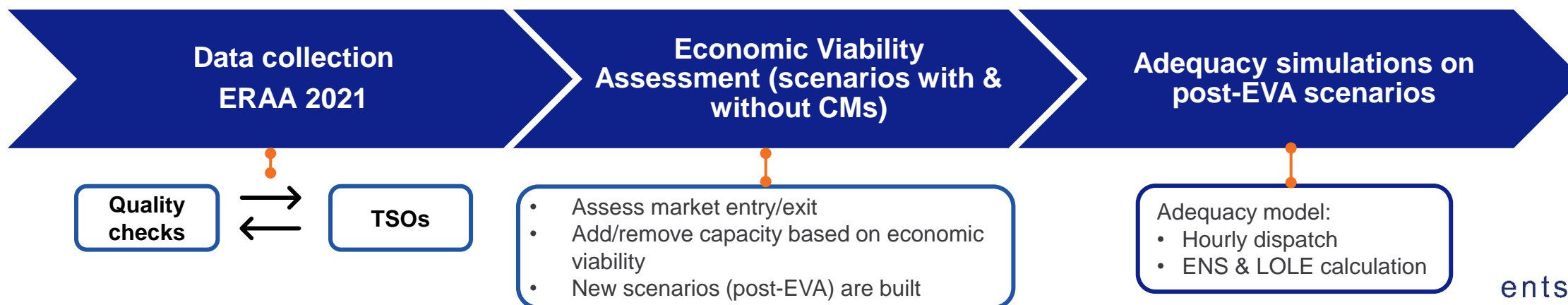


## Central Scenarios

*Economic Viability Assessment (EVA) with and without capacity mechanisms give the central scenarios for 2025*

The EVA is a new method which analyses whether generation or other resource capacity will be economically viable in future based on

- the possibility to invest in gas capacity and demand side technologies
- the impact of one investment on another / the interdependency of different investment options
- an estimation of revenues in an energy-only market (EOM)

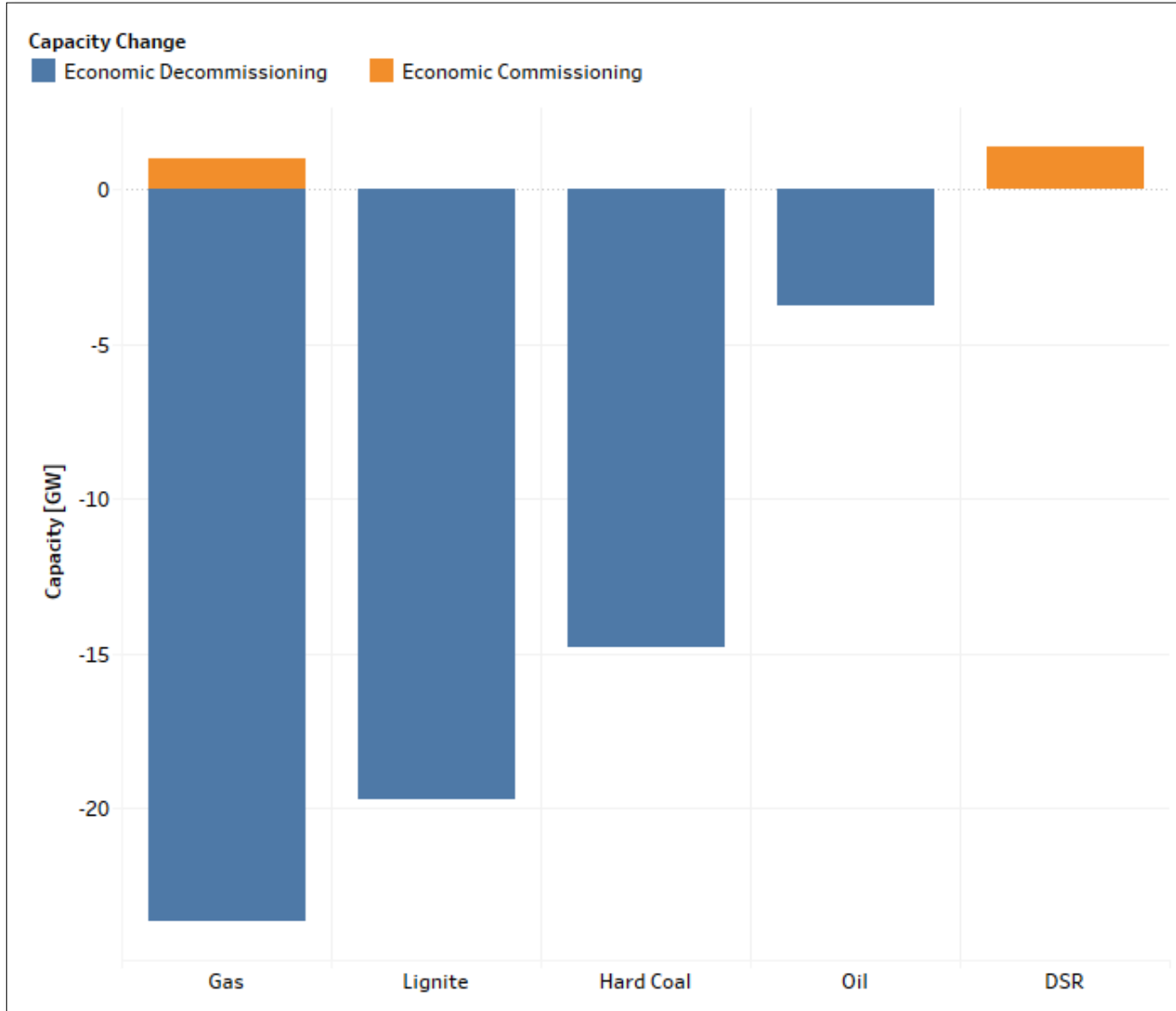


# ERA 2021 results



# Results – Economic Viability Assessment Step in Central Scenarios

# Central scenario without capacity mechanisms – Target Year 2025



**62GW economic decommissioning & 3.5GW economic commissioning in Europe:**

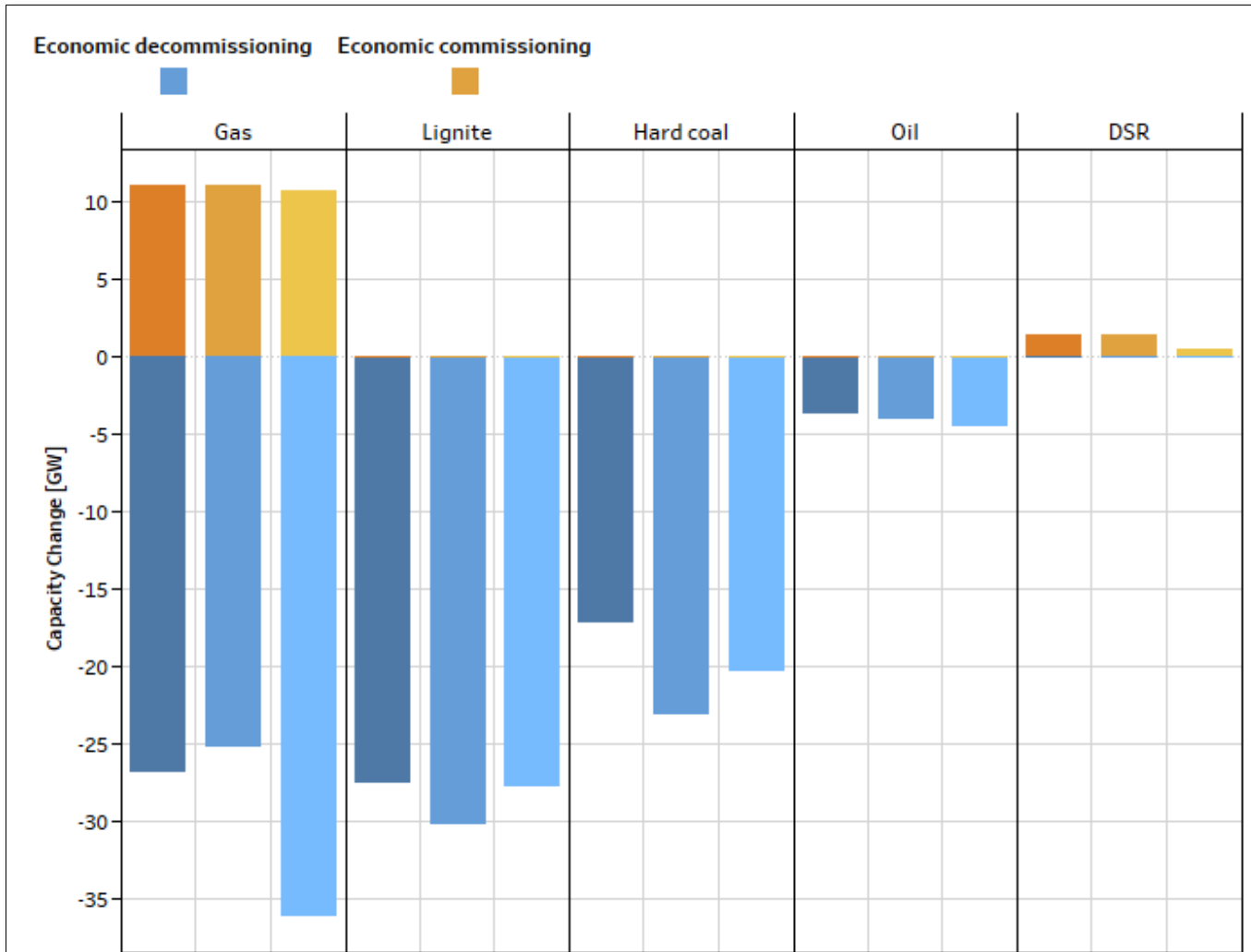
- **Large capacity decommissioned** in Spain, continental-western Europe and Great Britain;
- **Gas and DSR the only candidates for economic commissioning** in ERAA 2021;
- **Economic commissioning evenly split between gas & DSR - distributed in multiple regions;**

Results of (de-)commissioned capacity should be seen on a regional level rather than per bidding zone.








# Scenario sensitivities without capacity mechanisms - Target Year 2025

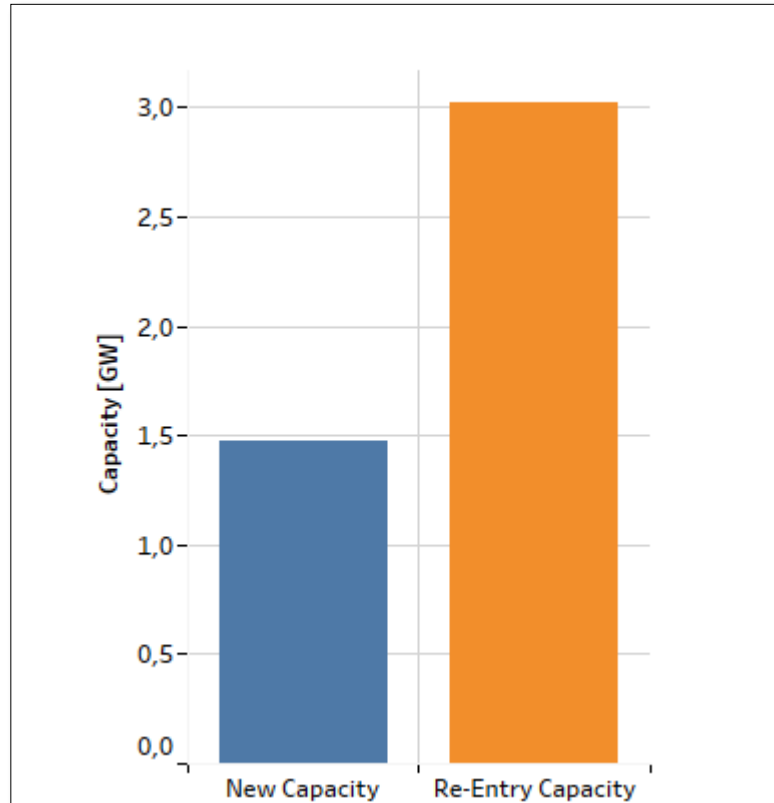


- **Higher CO2 prices** increase coal decommissioning & decrease gas decommissioning;
- **Lower price cap** considerably affects the economic viability of Gas and Hard Coal units.

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**Reference:**  
 price cap 15k€/MWh and CO2 price 40€/ton
- 
**Sensitivity #1**  
 price cap 15k€/MWh and CO2 price 60€/ton
- 
**Sensitivity #2**  
 price cap 3k€/MWh and CO2 price 40€/ton



# Central scenario with capacity mechanisms – Target Year 2025



Adding capacity **post-EVA** in order to meet Reliability Standards\*:

- **3 GW of capacity, removed in Scenario without CM, re-enters;**
- **1.5 GW of new capacity** is additionally needed to meet Reliability Standard;
- **~57 GW of capacity in Europe removed** in the Scenario without CM, still remain out of the market.

Additional capacity in any country impacts the wider region.

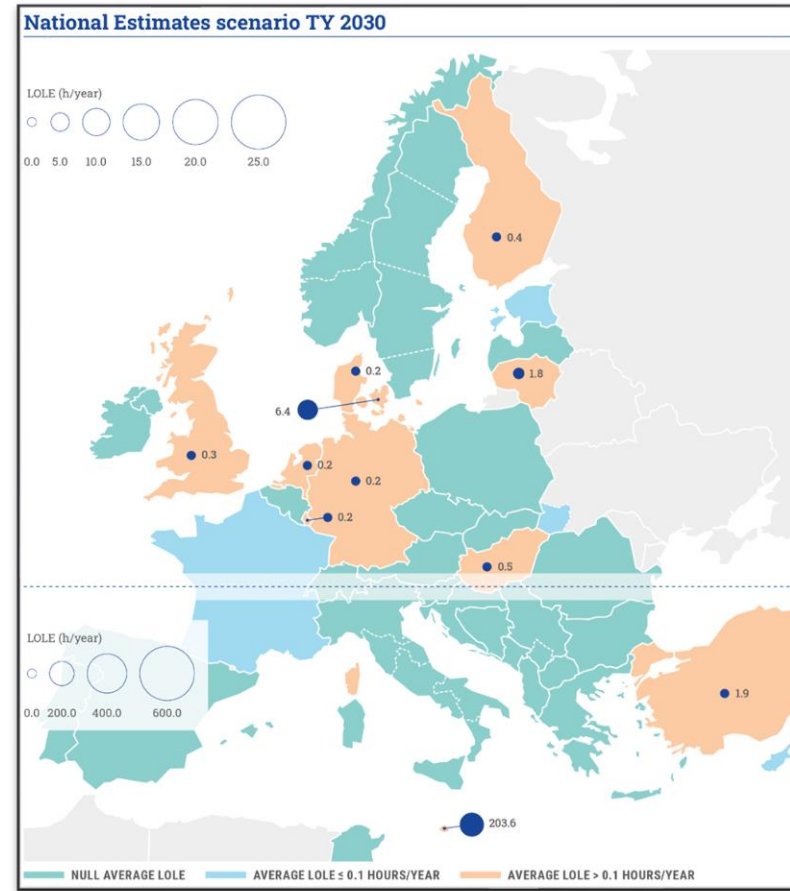
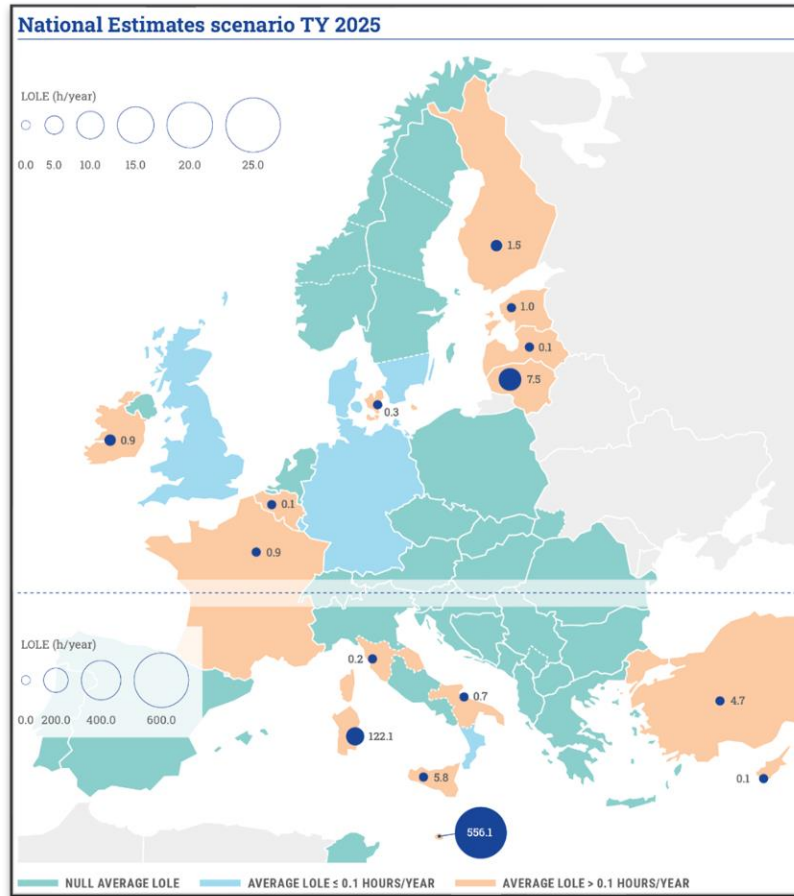
\***Countries / Single Price Areas with a Reliability Standard:**

Belgium, Bulgaria, Germany, Spain, France, Greece, ISEM, Italy, Lithuania, the Netherlands, Portugal, Poland, Great Britain



## Results – Adequacy assessment

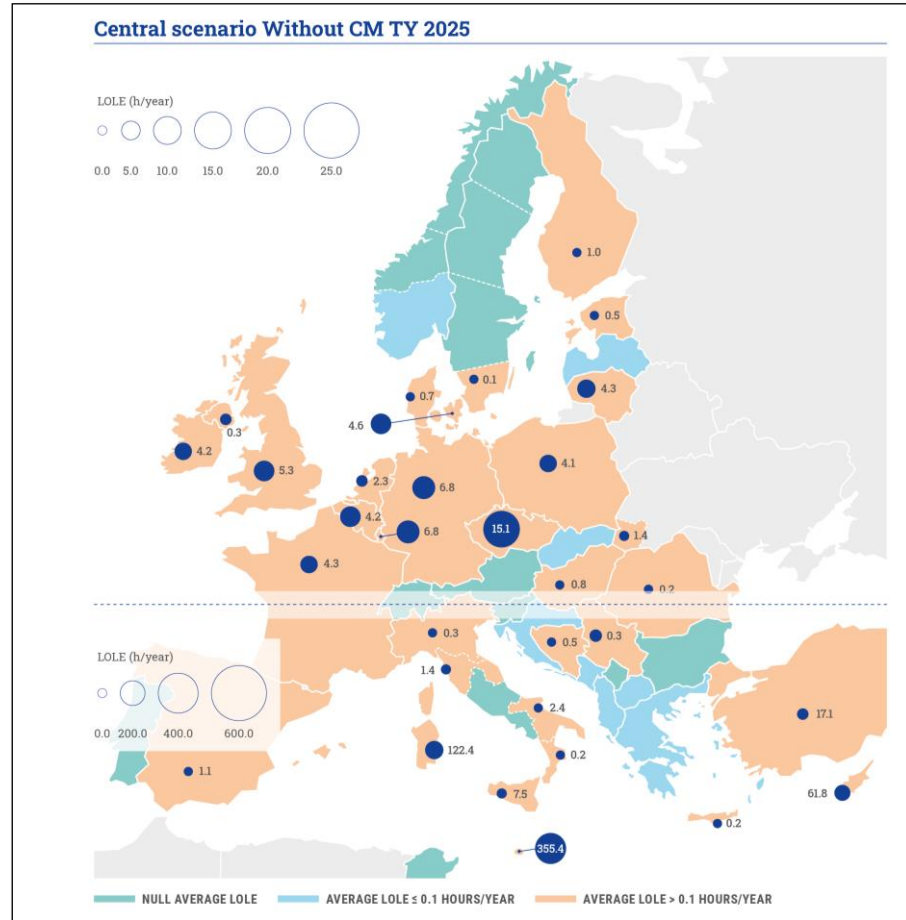
# National Estimates - Target Years 2025 & 2030



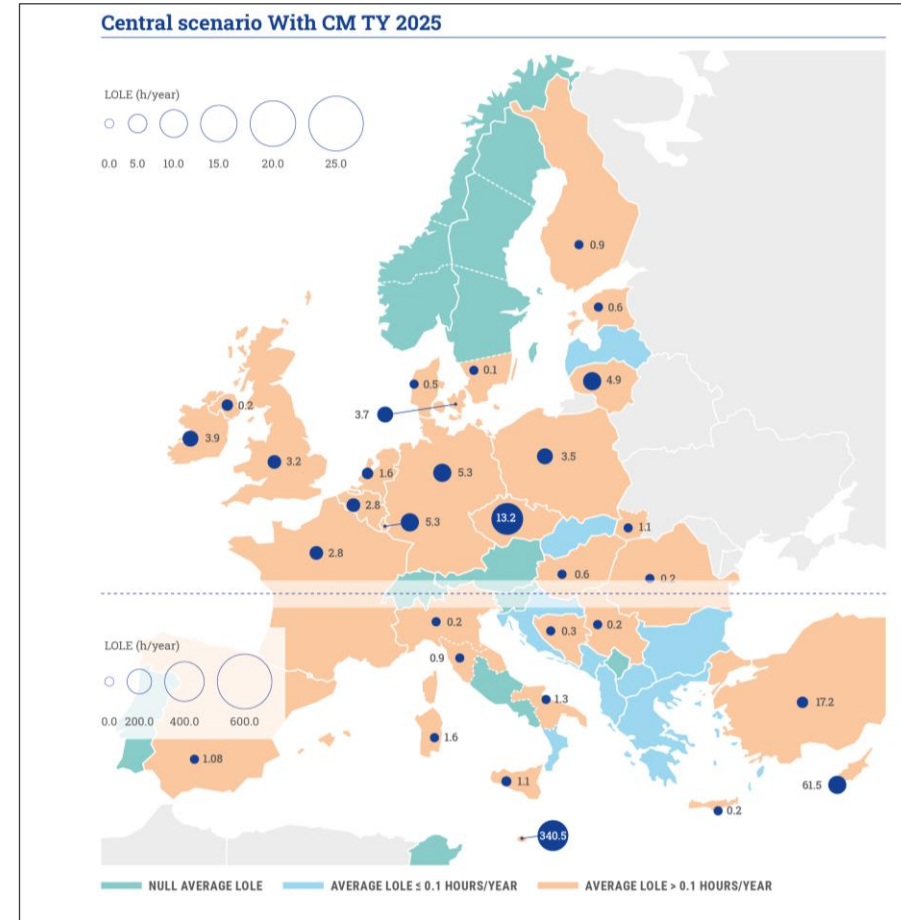
- Low adequacy risks in both National Estimates scenarios 2025 and 2030
- Impact of 'Fit for 55 Package' not yet considered in ERAA 2021 as Member States need to further specify. This could be significant especially for TY 2030.



# Central scenarios without/with capacity mechanisms – Target Year 2025



- Significant adequacy risks, especially in central-west Europe



- 4.5 GW additional capacity compared to scenario without capacity mechanisms needed to bring countries closer to their Reliability Standard



# Key takeaways



# Key takeaways

## Cooperation

Planning, cooperation and targeted measures are key for a secure electricity system.



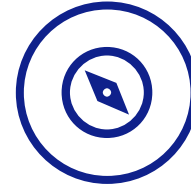
## Risks

In the absence of targeted measures, adequacy risks rise towards 2025.



## Coordination

Adequacy issues deeply interlinked; regional coordination is crucial.



## Future of ERAA

ERAA 2021 delivers significant learnings for the development of future ERAAs.

# ERAA Implementation Roadmap



## Stakeholder interaction

- *ERAA2021 views feeding into next ERAA*
- *Consultation on input data*
- *International benchmarking*



## Expanded methodology

- *Scenarios heading towards Fit for 55*
- *Enhanced EVA with four target years*
- *Flow-based in central reference scenarios*
- *Role of demand response and electrolyzers*



## Further proof of concepts

- *EVA for other sources incl. storage and renewables*
- *Improved climate change modelling*



*Target years*



*Economic Viability Assessment*



*Flow-based market coupling*



*Demand response and sector integration*



*Causal analysis*



*Climate change impact*





# Next steps

- ERAA 2021 is the first step towards a full target methodology.
- Regional interlinkages have strong impact on assumptions/insights/outcomes.

| End Nov. 2021 | Until Jan 2022 | Early 2022 | May 2022 | Nov 2022





**Have your say on the ERAA 2021 public consultation by 7 January 2022!**



# Thank you very much for your attention!

Our values define who we are, what we stand for and how we behave.  
We all play a part in bringing them to life.



## EXCELLENCE

We deliver to the highest standards.  
We provide an environment in which people can develop to their full potential.



## TRUST

We trust each other, we are transparent and we empower people.  
We respect diversity.



## INTEGRITY

We act in the interest of  
ENTSO-E



## TEAM

We care about people. We work transversal and we support each other.  
We celebrate success.



## FUTURE THINKING

We are a learning organisation.  
We explore new paths and solutions.

# We are ENTSO-E