

Winter Outlook 2021/2022

Web conference – 1 December 2021



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Purpose of Seasonal Outlooks

ENTSO-E Winter Outlook and ENTSG Winter Supply Outlook:

- Assess adequacy situation to prevent and mitigate risks to security of supply during the winter period
- Inform all interested parties about the adequacy situation for gas and electricity at a pan-European level
- Allow ENTSO-E & ENTSG to exchange information about the situation in their respective systems

ENTSOG Winter Outlook

Objective

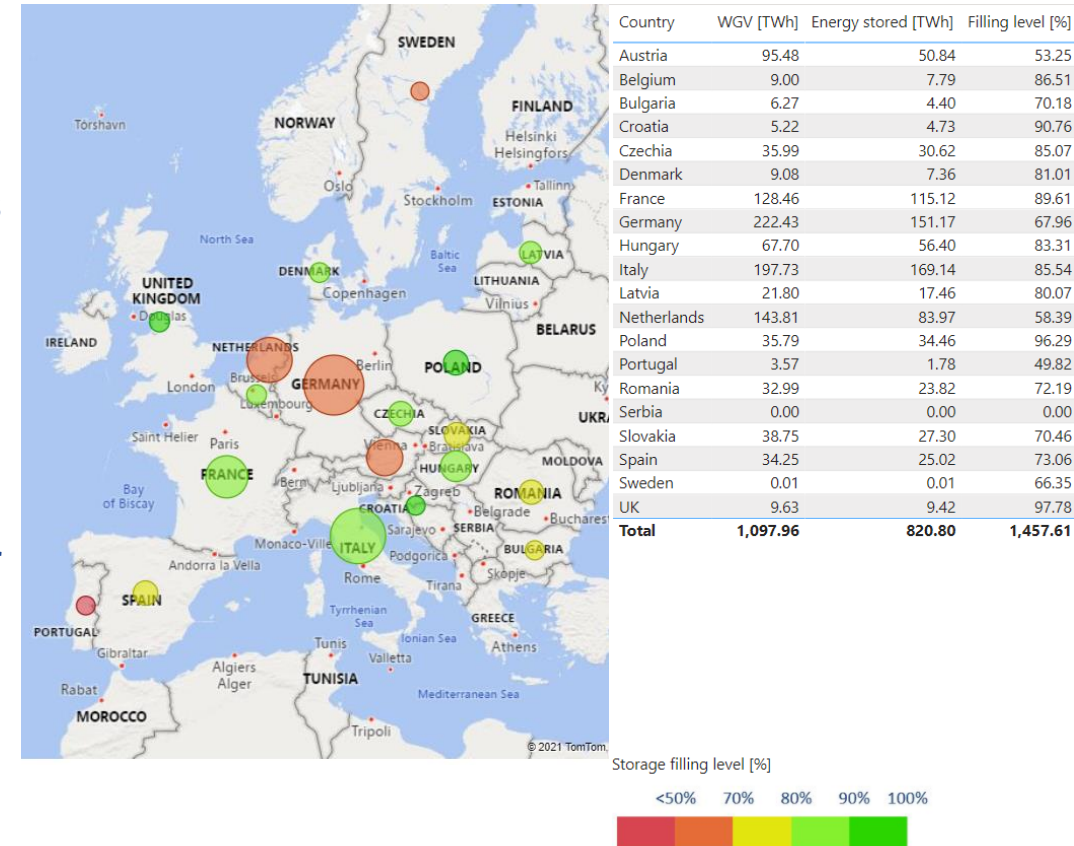
The analysis investigates the possible evolution of the supplies and the UGS inventory along the season (1 October 2021 to 31 March 2022) as well as the ability of the gas infrastructure to ensure supply and demand adequacy, especially in high demand situations.

Assumptions

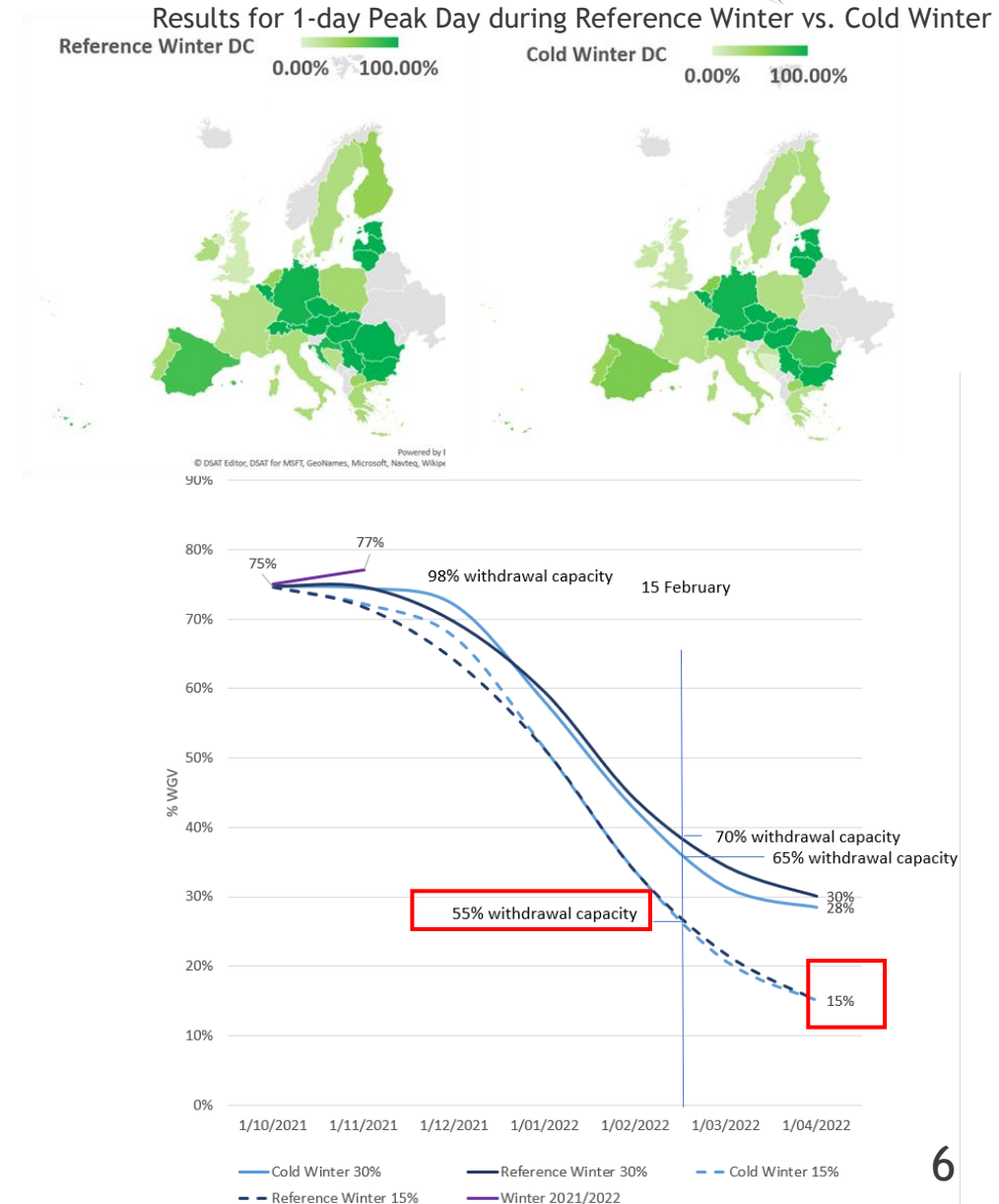
- Sensitivity analysis under different demand conditions: Reference Winter and Cold Winter (highest demand since 2009/10),
- Peak day (1-in-20 years) and 2-Week Cold Spell (1-in-20 years),
- Import Potentials based on 10-year history,

Supply situation

The storage inventory level on 1 October 2021 (830 TWh) is one of the the lowest of recent 9 years, due to a low storage level (336 TWh) at the end of winter and limited injection during the summer period.



- No country is exposed to demand curtailment in case of a normal or cold winter, incl. on a peak day
- Indigenous production keeps on decreasing
- UGS can provide flexibility for the winter
- 30% UGS level can be achieved in case of an average and cold winter in all demand situations (whole season, Peak Day and 2-week cold spell)
- Imports have sufficient potential to provide additional volumes over the winter. However, in case of cold winter, the need for such volumes could be higher than observed in recent history
- A low storage level at end of winter reduces storage withdrawal capacities and can expose CEE countries to demand curtailment in case of UA disruption
- Trans Adriatic Pipeline commissioned in January 2021 introduce Caspian gas as a new source



– Ukrainian transit disruption

New infrastructure significantly improves the situation in SEE, almost fully mitigating the exposure to demand curtailment in case of UA disruption

In a peak day with storage level higher than 39% in February: Countries in the risk group are exposed to 2% demand curtailment, which could be mitigated by demand response.

All exports to Ukraine can be maintained

In a peak day with 30% storage level in February, the CEE countries could be exposed to 14% demand curtailment

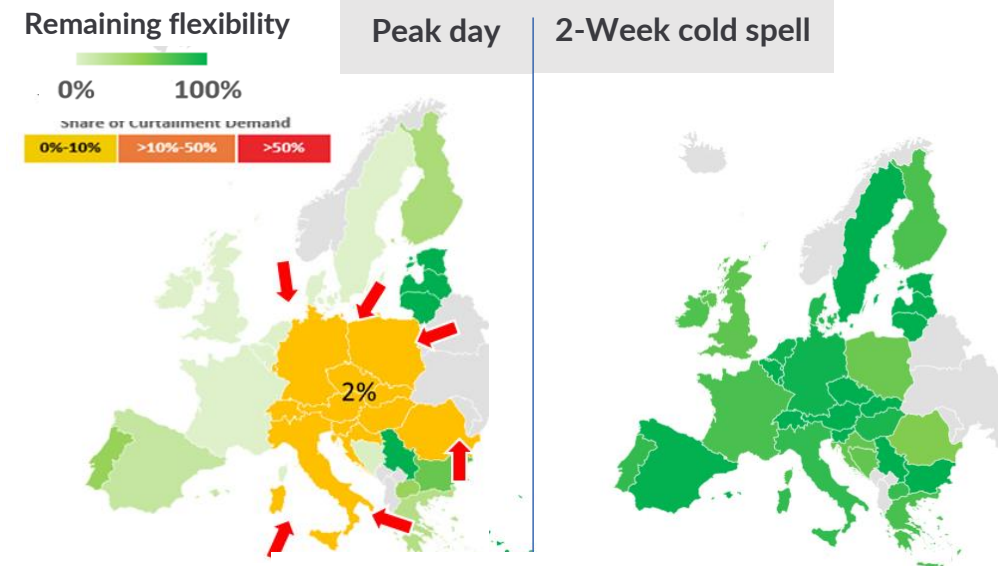
– Disruption of imports to Baltic States and Finland

Slightly improved since WSO 2020/2021

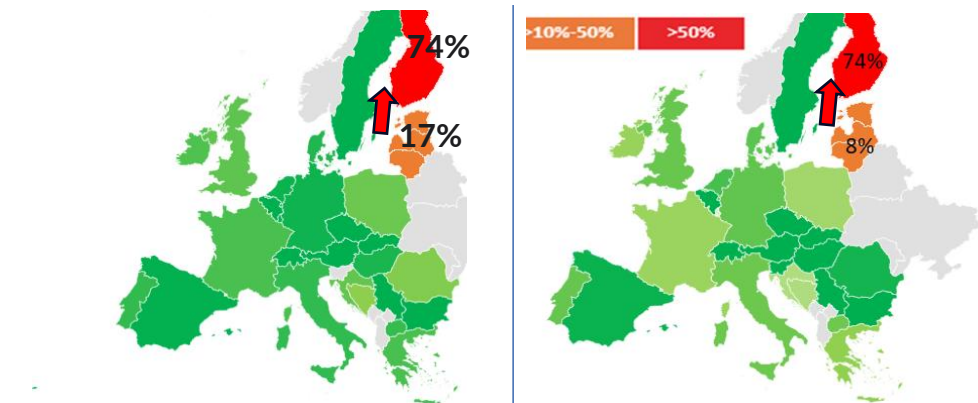
In a Peak Day or 2-week Cold Spell, Baltics States and Finland are exposed to a significant level of demand curtailment (8% to 74%)

Those countries are facing infrastructure limitations since alternative LNG import capacities are fully used and they are not connected to other European countries

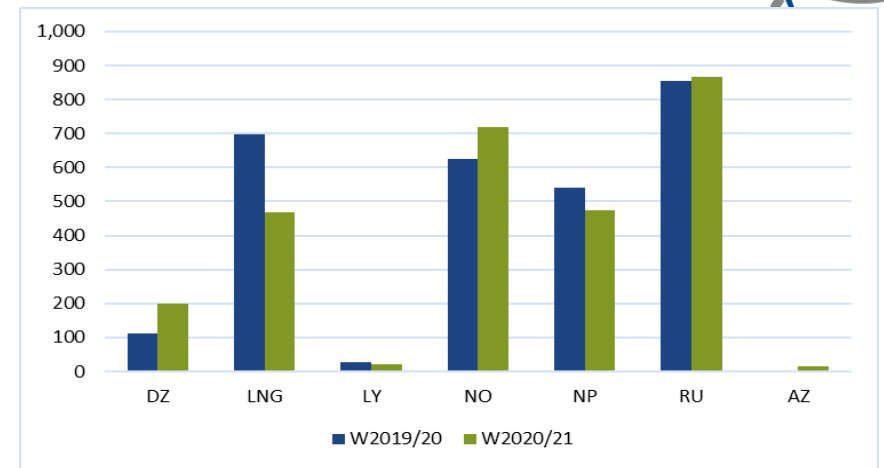
Ukrainian Disruption



Baltic States and Finland



- During winter 2020/2021, LNG supply has decreased from 697 TWh to 467 TWh in a context of high Asian demand and delayed deliveries due to the blockage of the Suez Canal.
- Other supply sources remained at similar levels compared to 2019/2020 with slight increase in Algeria, Norway and Russia.
- With Trans Adriatic Pipeline (TAP) commissioned in November 2020, Caspian gas is new source of gas for Europe.
- Storage levels at end of winter season reached 336.5 TWh, the lowest seen in recent four winters, due to record high UGS utilization (717 TWh withdrawn) during the rather cold winter 2020/2021.



Total supply by source

	1-Oct (TWh)	31- Mar (TWh)	UGS Utilisation (TWh)
W11-12	601.7	331.3	270.5
W12-13	716.2	222.8	493.5
W13-14	724.1	433.4	290.7
W14-15	867.4	274.6	592.9
W15-16	838.6	364.1	474.5
W16-17	972.9	278.1	694.8
W17-18	903.8	191.1	712.7
W18-19	886.1	437.5	448.6
W19-20	1063.4	601.4	462.0
W20-21	1053.2	336.5	716.8

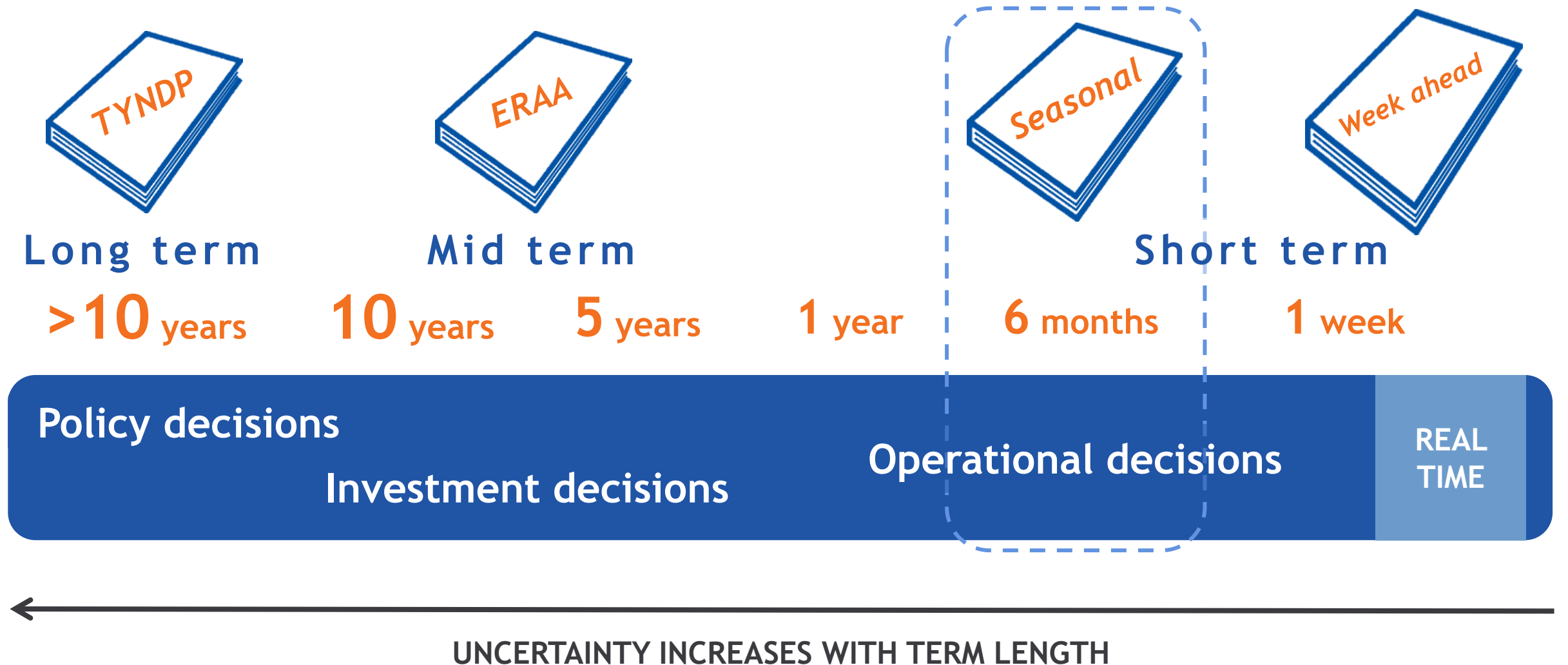
UGS Utilisation (TWh) Winter 2011/2012 – 2020/2021. (Source: AGSI)

Conclusions

- > European **indigenous production** keeps on following a decreasing trend,
- > EU gas **infrastructure** has been **fully operational and functioning** during Summer and this status is expected to be maintained for Winter season 2021/22.
- > On **1 October 2021, the EU storage level (75%) is one of the lowest in recent 9 years (831 TWh)** - with different geographical situations - for 2 main reasons:
 - Record **high use of storage flexibility during winter 2020/2021**, resulting in a low level of storage (336 TWh) at beginning of injection season,
 - **Low injection during summer** while observing unusual high gas prices,
- > European gas system offers **sufficient flexibility to ensure security of gas supplies in Europe**, provided gas can be imported on a similar level as in recent history,
- > However, in case of a cold winter, **the import needs for the EU could be 5% to 10% higher** than in the recent years,
- > A **low storage level at end of winter season could expose some countries to demand curtailment** in case of extreme temperatures and supply disruptions,
- > **LNG plays an important role as a flexible supply source** and could be imported in volumes comparable to recent years.

ENTSO-E Winter Outlook

Different risks are addressed within different timeframes



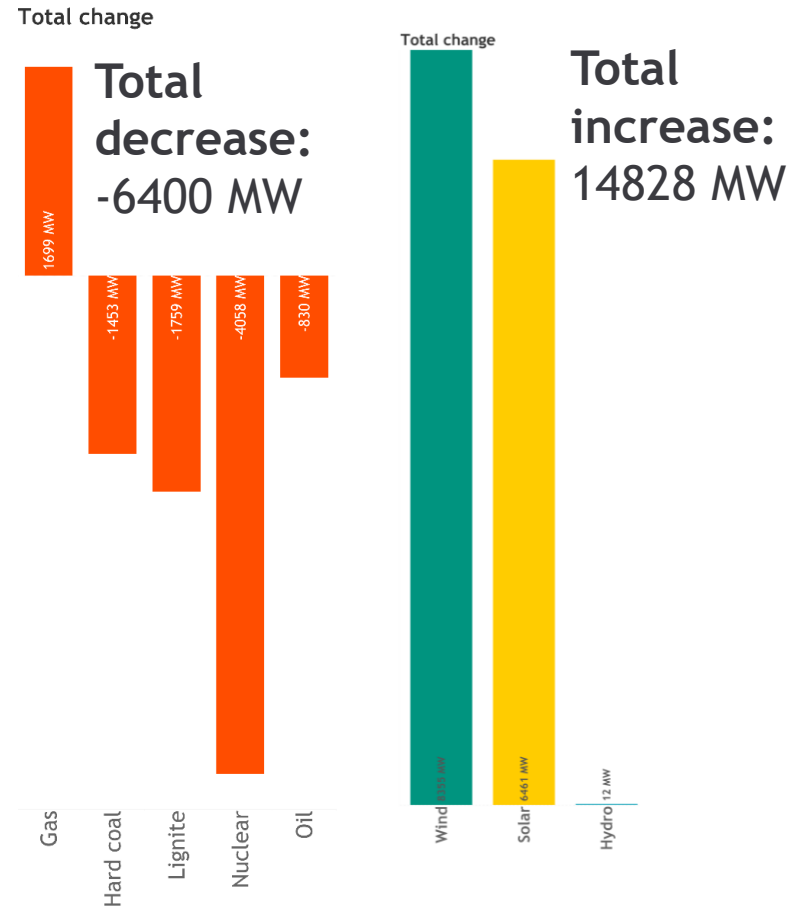
Summer outlook approach



Winter trends in available thermal generation

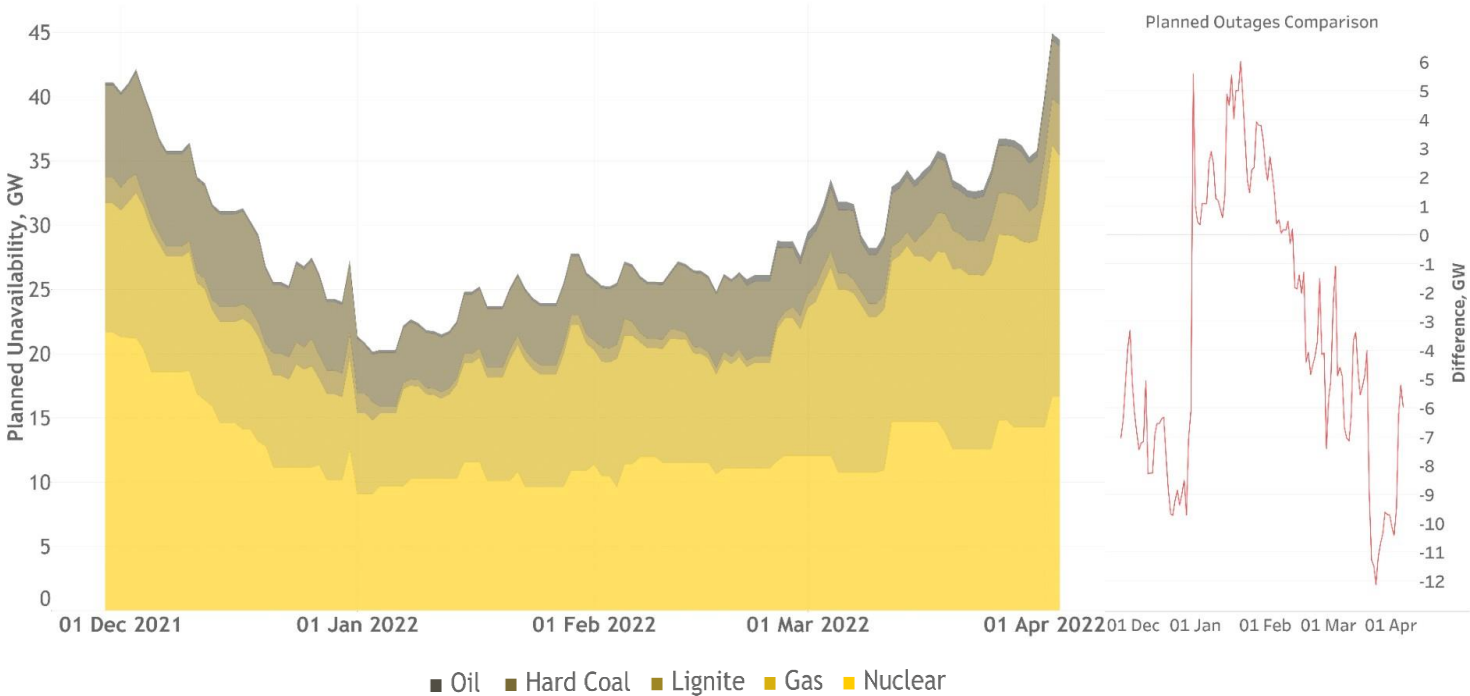
Thermal capacity during winter decreases by ~6400 MW, which represents ~1.3% of the European thermal fleet.

Net thermal capacity change

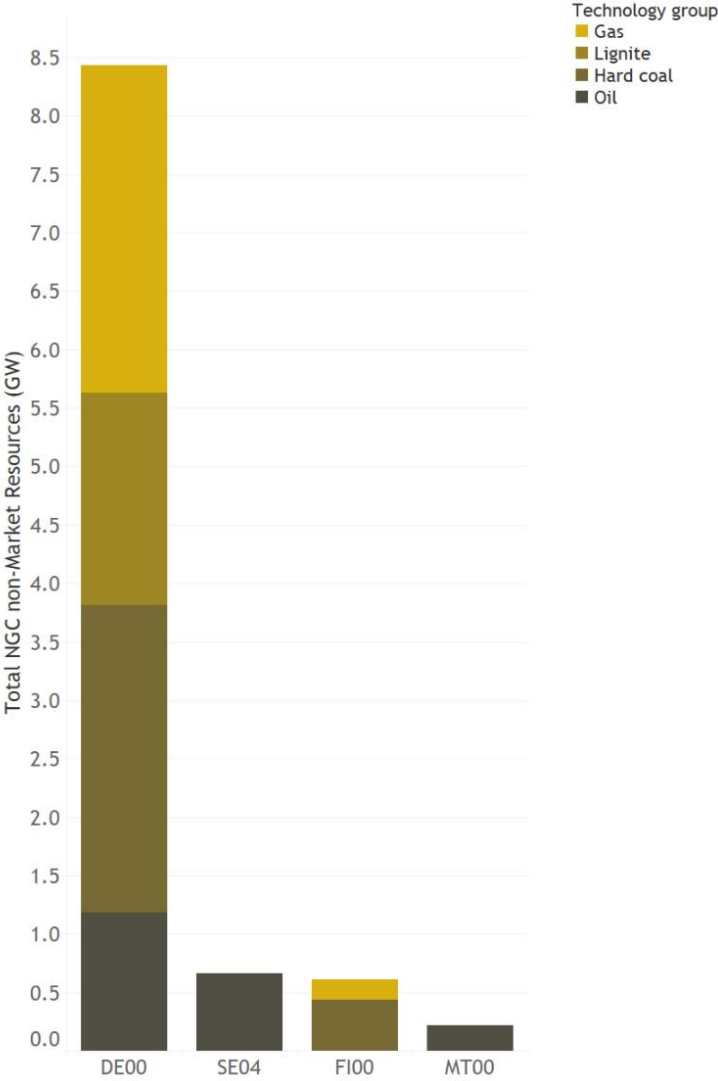
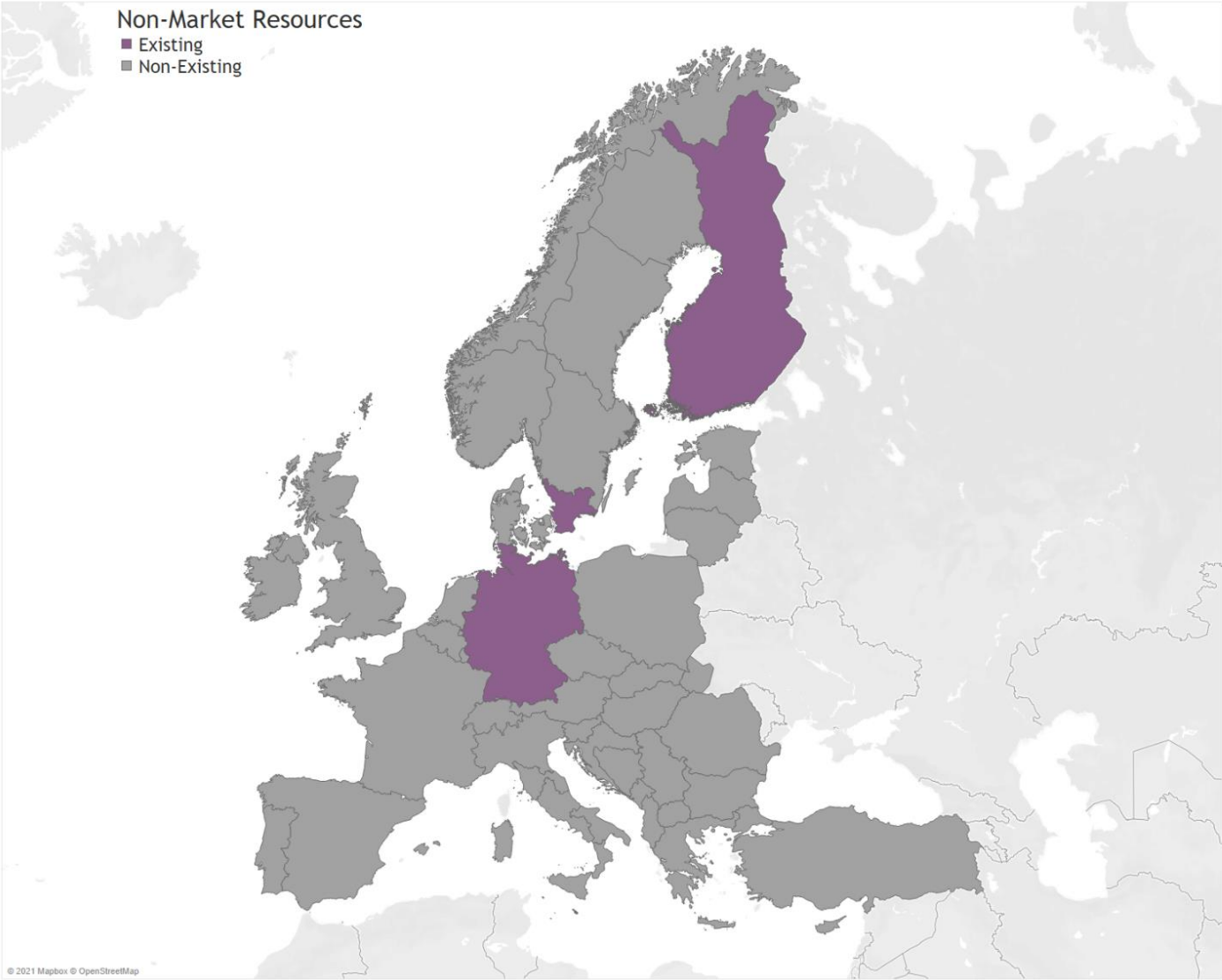


Total planned unavailability of thermal power plants decreases towards mid-winter. Nuclear units show the highest level of unavailability at the beginning of winter 2021-2022, which flattens approaching January 2022.

Planned unavailability of thermal units (as of September)



Non-market resources

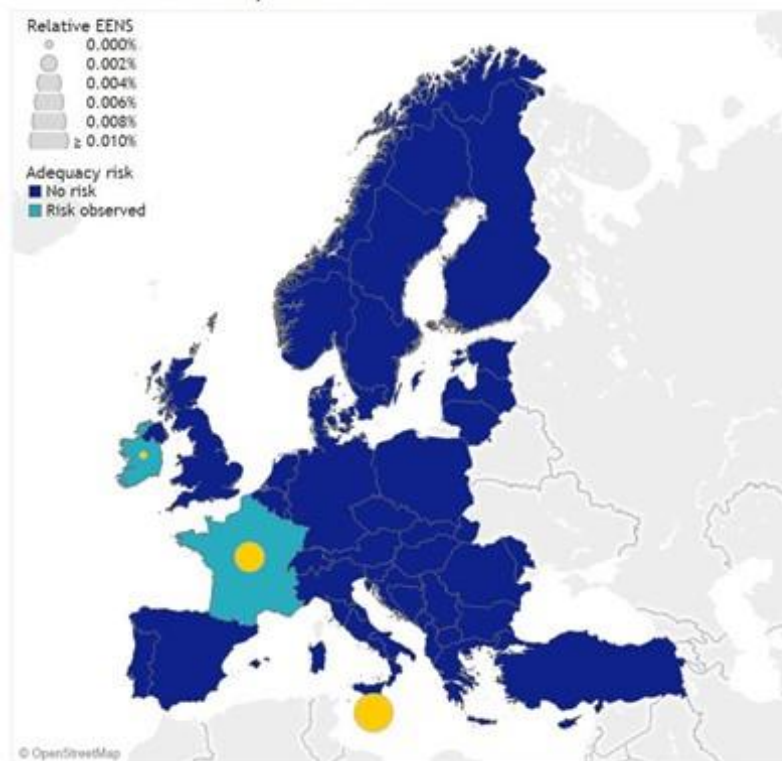


Adequacy overview

Notable adequacy risks are identified in France and Malta, while some adequacy risks are identified in Ireland. Adequacy risks are expected to be addressed by out-of-market resources in Malta. All TSOs are closely monitoring adequacy concerns together with RSCs.

Adequacy overview (considering September information)

Normal market operations



Considering non-market resources



- Risks do not change significantly
- Risks decrease

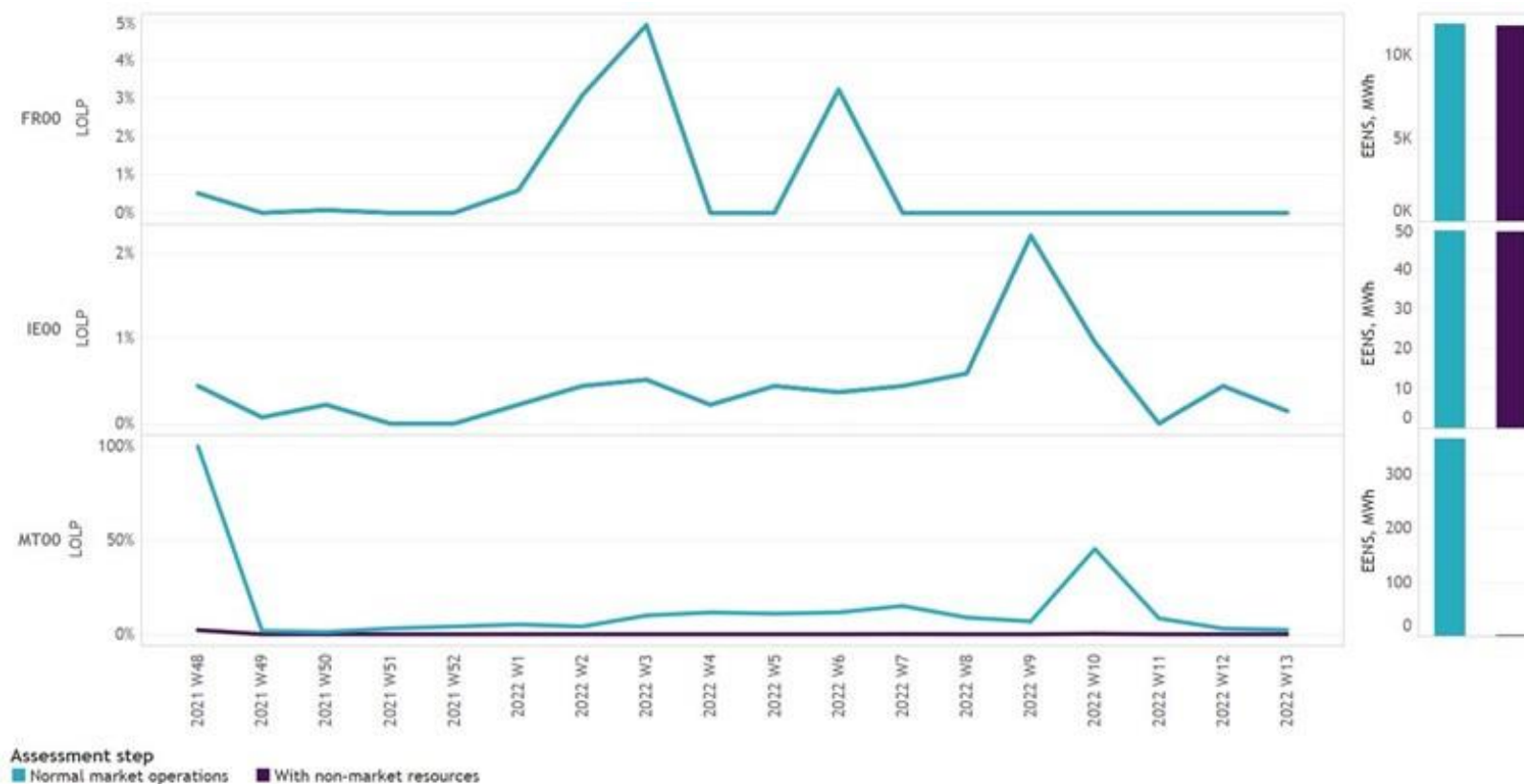
EENS = Expected Energy Not Served, RSC = Regional Security Coordinator

Relative EENS - EENS representation considering power system seasonal consumption (reliability metric designed to compare EENS on pan-European scale)

Adequacy details

The contribution of non-market measures significantly reduces Loss of Load Probability (LOLP) in Malta, with the highest weekly LOLP dropping from 100% to 2.21%. EENS is reduced by 99.996%.

Detailed adequacy overview - weekly LOLP and EENS



EENS = Expected Energy Not Served, LOLP = Loss of Load Probability (probability that at least 1 consumer could lose electricity supply)

5 minute break

Q&A

Summary

- ENTSOs seasonal outlooks are unique pan-European & system wide analysis of security of supply
- Adequacy assessed in:
 - Electricity system under various conditions
 - Gas system under extreme cold events or in case of supply route disruptions
- Adequacy situation needs to be closely and continuously monitored, especially in case of long-lasting cold spell and other exceptional circumstances.

Upcoming events

Tuesday 7 December at 10 am CET

RGI, ICUN and ENTSO-E Conference “Optimising Energy and Empowering Nature”



Register on energyandnatureconference.eu

Thank you for your attention