Summer Outlooks 2023

Public Webinar – 31 May 2023

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Agenda

1. Introduction
2. Summer Supply Outlook (ENTSOG)
3. Summer Outlook (ENTSO-E)
4. Questions
5. Summary and coming events

Purpose of Seasonal Outlooks

ENTSO-E Summer Outlook and ENTSOG Summer Supply Outlook:

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

Summer Supply Outlook 23 & Winter Overview 23/24

Assumptions

Demand

Summer season (APR 2023 – SEP 2023)

- Forecast demand provided by TSOs

Winter season (OCT 2023 – MAR 2024)

- Reference winter (5-year average*)
- Reference winter with 15% reduction (5-year average -15%)
- Cold winter (considered in SoS simulations report)
- Cold winter with 15% reduction (considered in SoS simulations report -15%)

Storage

Country	Gas in storage, TWh	WGV, TWh	Full, %
Austria	62.620	96.039	65%
Belgium	2.679	9.007	30%
Bulgaria	4.499	5.803	78%
Czech Republic	24.743	43.810	56%
German (H)	145.306	223.640	65%
German (L)	11.605	22.918	51%
Denmark	7.392	9.940	74%
Spain	27.627	35.250	78%
France	37.297	133.603	28%
Croatia	3.615	4.773	76%
Hungary	30.408	67.703	45%
Italy	113.006	193.443	58%
Latvia	8.069	24.074	34%
Netherlands	82.131	138.991	59%
Poland	19.953	36.410	55%
Portugal	3.789	3.967	96%
Romania	13.794	32.794	42%
Serbia	1.360	4.532	30%
Sweden	0.097	0.101	95%
Slovakia	22.631	38.848	58%
United Kingdom	5.945	17.470	34%
TOTAL	628.565	1143.114	55%

Capacities

Capacities collected from TSOs (+ enhanced capacities for full RU disruption)

Some countries have provided their estimates for the winter season demand forecast, and these values are taken into account in the 5-year average.

Main findings for summer 2023

- **General observations**
  - Non-Russian supply sources are used to a very high extent
  - Unusually high initial Underground Storage (UGS) filling level helps to achieve targets
  - 90% UGS filling level by end-September is achievable in all UGS facilities
  - Prolonged filling in October and additional Liquefied Natural Gas (LNG) supply potential can further improve the situation which is tighter in South East Europe compared to Western Europe
- **Case 1: Minimisation of RU pipeline supply**
  - Minimal dependency on RU gas persists to satisfy demand and reach 90% UGS filling
- **Case 2: Disrupted Russian pipeline supply but enhanced capacities**
  - Enhanced capacities eliminate RU pipeline gas dependency

Summer analysis is based on data provided by TSOs

Main findings for winter 2023/24

- All analyses start on 1 October 2023 with 90% UGS filling level and target a 30% UGS filling level on 31 March 2024
- For cases with full RU pipeline supply disruption, enhanced capacities were used
- Cold winter means once in 20 years demand

Winter demand	RU pipeline supply	Demand sensitivity	Unlimited LNG	Demand curtailment	Final UGS filling level
5 year average	Minimised	No	No	No	30%
	Disrupted	No	No	No	11%
		Minus 15%	No	No	30%
Cold winter	Minimised	No	No	No	14%
		Minus 15%	No	No	30%
		No	Yes	No	30%
	Disrupted	No	No	6% to 13%	2%
		Minus 15%	No	No	14%
		Minus 15%	Yes	No	30%

TSOs could correct the winter demand data

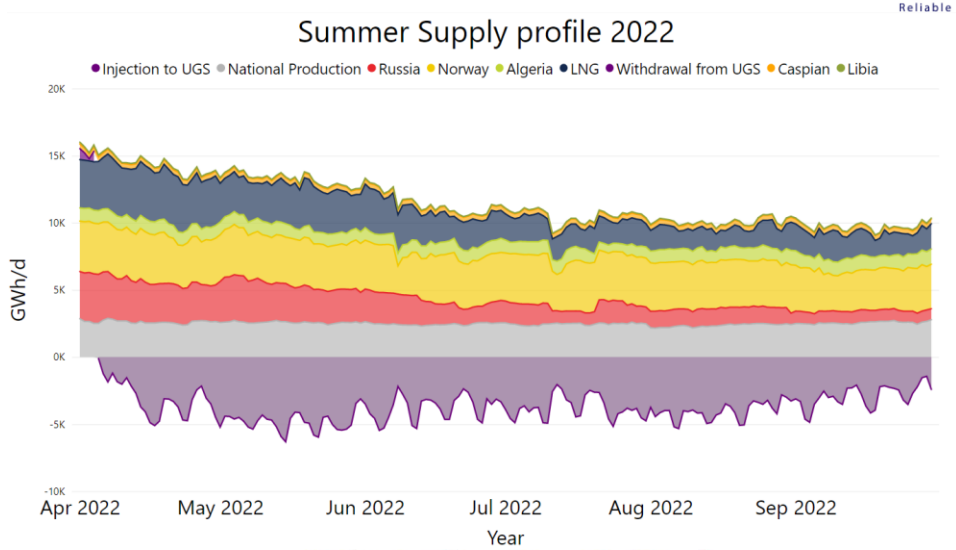
Conclusions

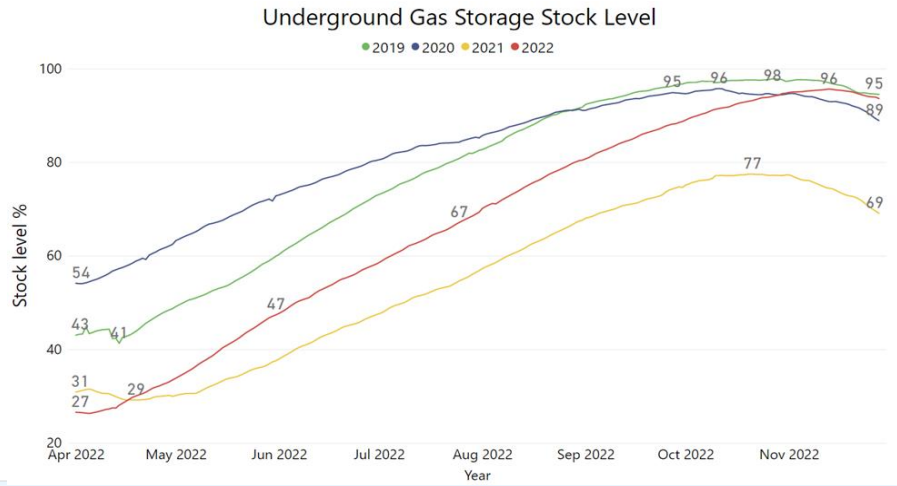
- Gas infrastructure including newly commissioned projects can reduce dependence on RU
- UGS filling targets for end-summer can be reached without RU gas
- UGSs are essential for security of supply by providing seasonal flexibility
- Adequate UGS levels until the end of winter are important to allow for flexible usage of gas infrastructure
- RU pipeline supply disruptions in winter would require additional measures to mitigate demand curtailments and ensure flexibility for the high-demand months in certain demand situations
  - Possible mitigation measures: enhanced capacities, additional supplies, decrease in gas demand by 15%

A disclaimer clarifies that the outlook is no forecast and cannot guarantee availability of gas quantities

Summer Review 2022

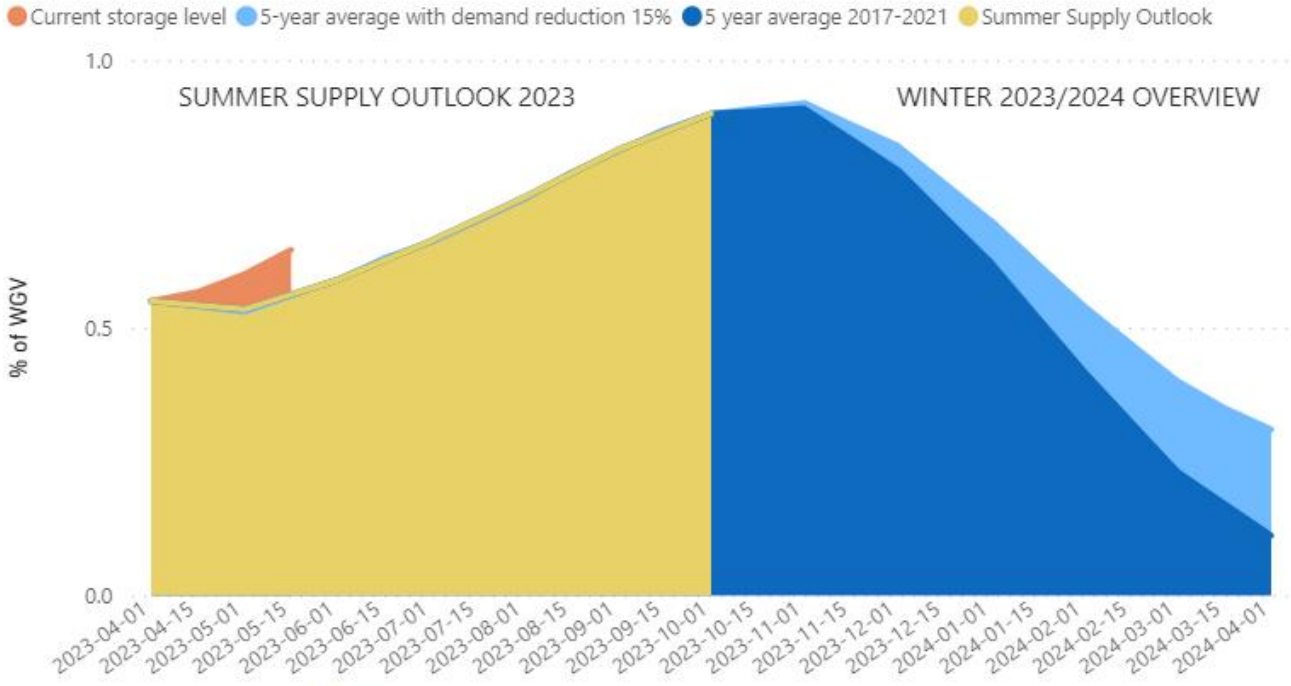
- A significant number of new gas infrastructure projects have been commissioned in 2022*.
- Total gas demand values dropped in the EU by 15.5%.
- The European gas hubs reached the highest gas prices compared to all historical data registered at ENTSOG, reaching 234 €/MWh on the TTF (Dutch gas market) in August 2022.
- Pipeline gas supplied by Russia dropped by around 50% in comparison with the summer 2021.
- LNG and National Production experienced the most notable increase from all supply sources to Europe and accounted for 75% and 26% of increase, respectively.
- The storage level at the beginning of the summer 2022 (1 April) was 27%, the lowest storage level of the last 4 summers. The storage facilities were well-filled and reached a peak of 95% on the 13 November 2022.



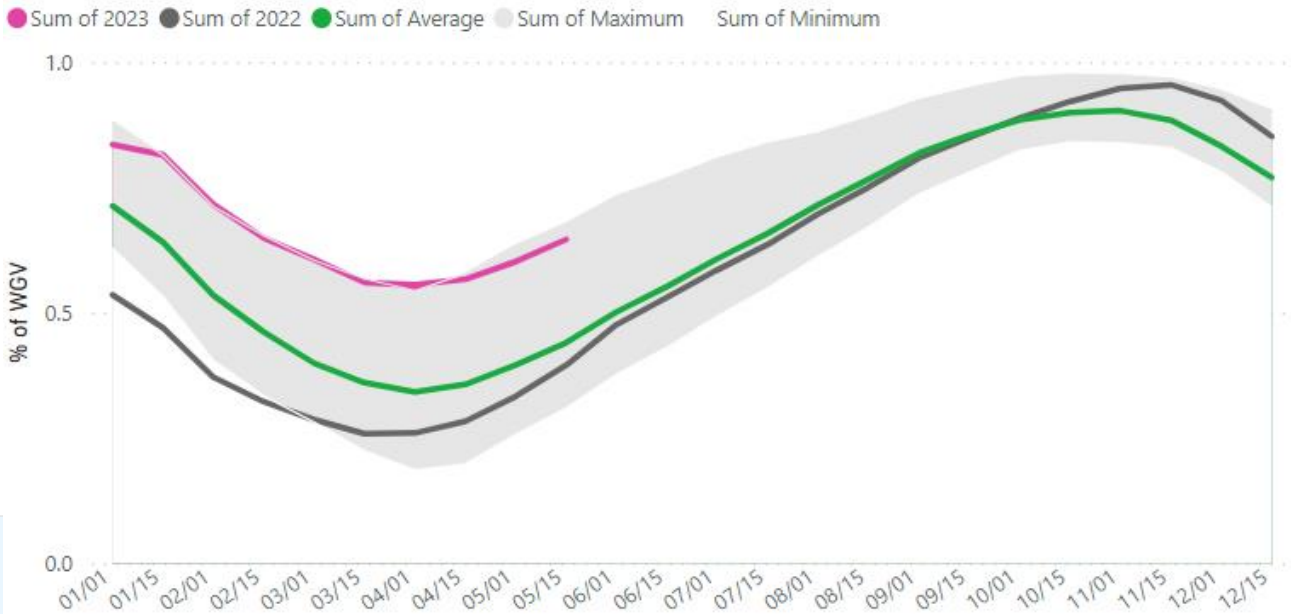


*The new infrastructures have been commissioned - new interconnectors between PL and LT, PL and SK, GR and BG, as well as NO to DK and from DK to PL. The new LNG and FSRU terminals in DE, FI and NL were also commissioned in the second half of 2022.

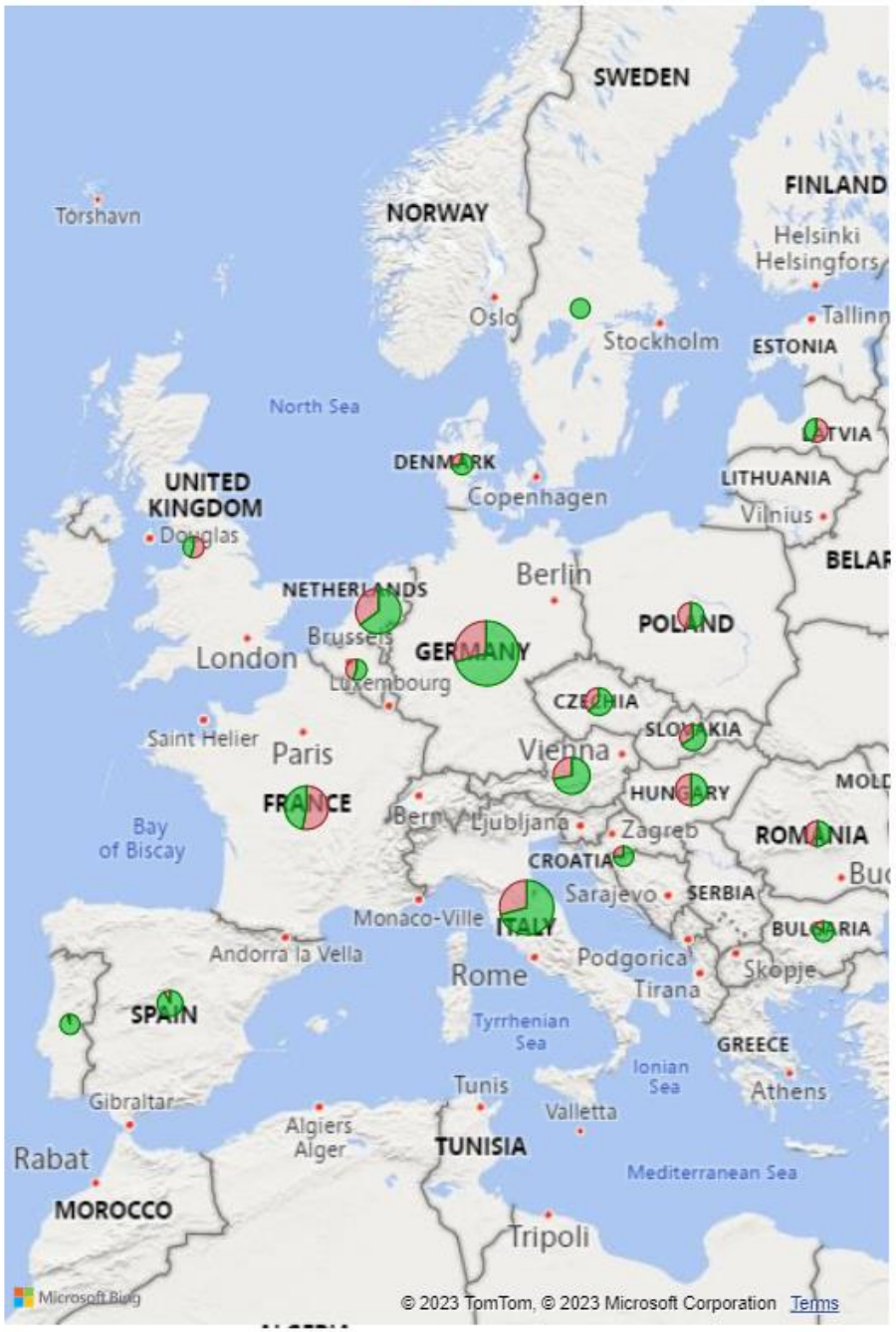
Storage evolution vs SSO scenarios



Storage evolution vs 2015-2020



Storage levels



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GIE AGSI

Data source
ENTSOG Seasonal outlooks
and
https://agsi.gie.eu/#/

Working Gas Volume

Country	Value [TWh]	Value [bcm*]
Austria	96.74	8.8
Belgium	7.61	0.7
Bulgaria	5.80	0.5
Croatia	4.77	0.4
Czechia	44.30	4.0
Denmark	9.85	0.9
France	133.60	12.1
Germany	250.65	22.8
Hungary	69.70	6.3
Italy	193.44	17.6
Latvia	22.60	2.1
Netherlands	142.44	12.9
Poland	37.54	3.4
Portugal	3.97	0.4
Romania	33.86	3.1
Slovakia	37.14	3.4
Spain	34.09	3.1
Sweden	0.10	0.0

*unit in bcm is indicative: value in TWh / 11

Thank you for your attention

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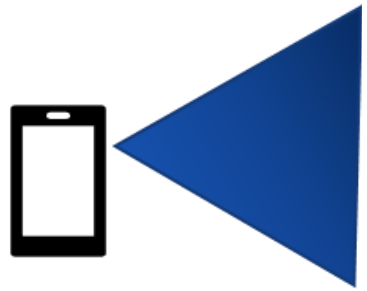
Don’t forget to post your questions on Sli.do:

Go to www.sli.do and enter **#4278233**
or scan the following QR with your phone to login



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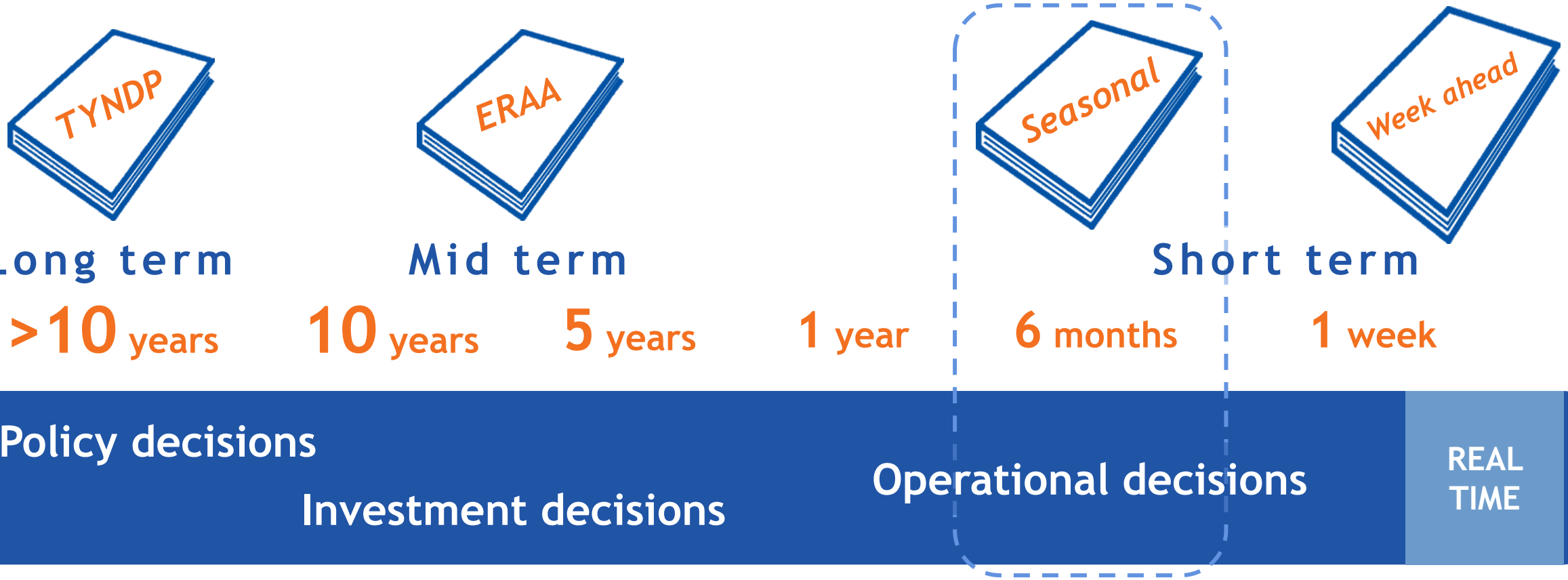
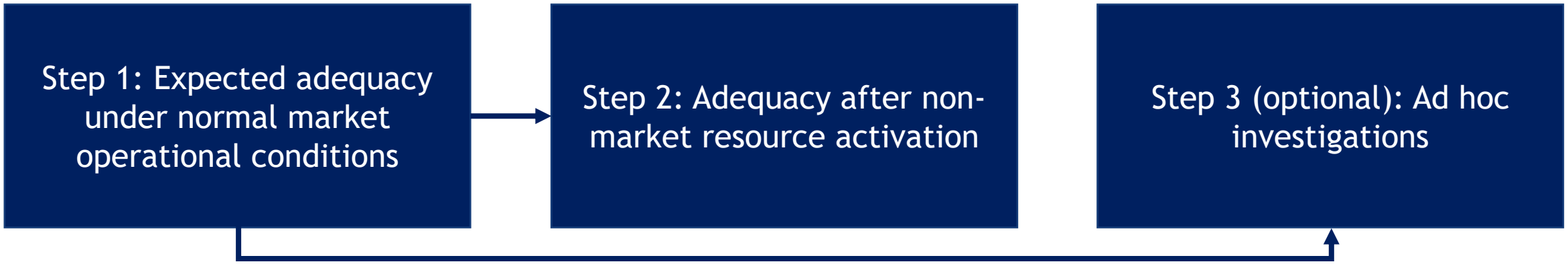
ENTSO-E Summer 2023 Outlook

Different risks are addressed within different timeframes



Seasonal outlook approach



Information available in March

Expected resources available in the market (generation and exchange capacities)

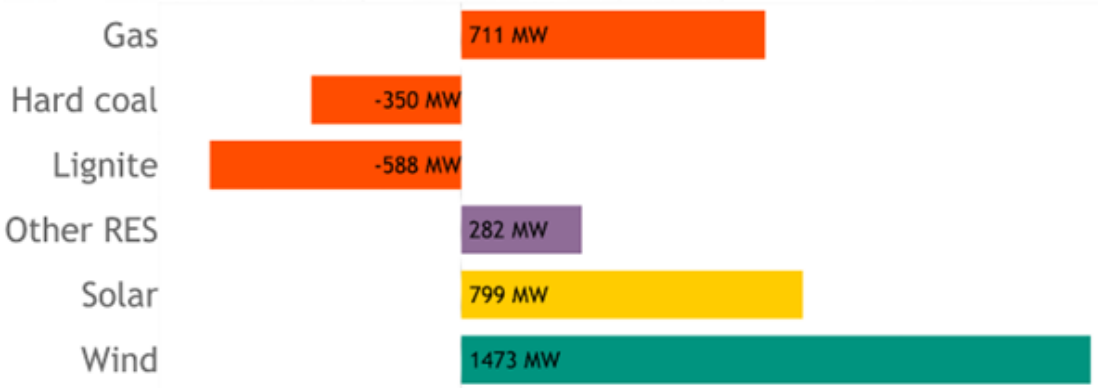
Activation of non-market resources

European cooperation

Result investigation

Summer trends in available thermal generation

Net generation capacity change

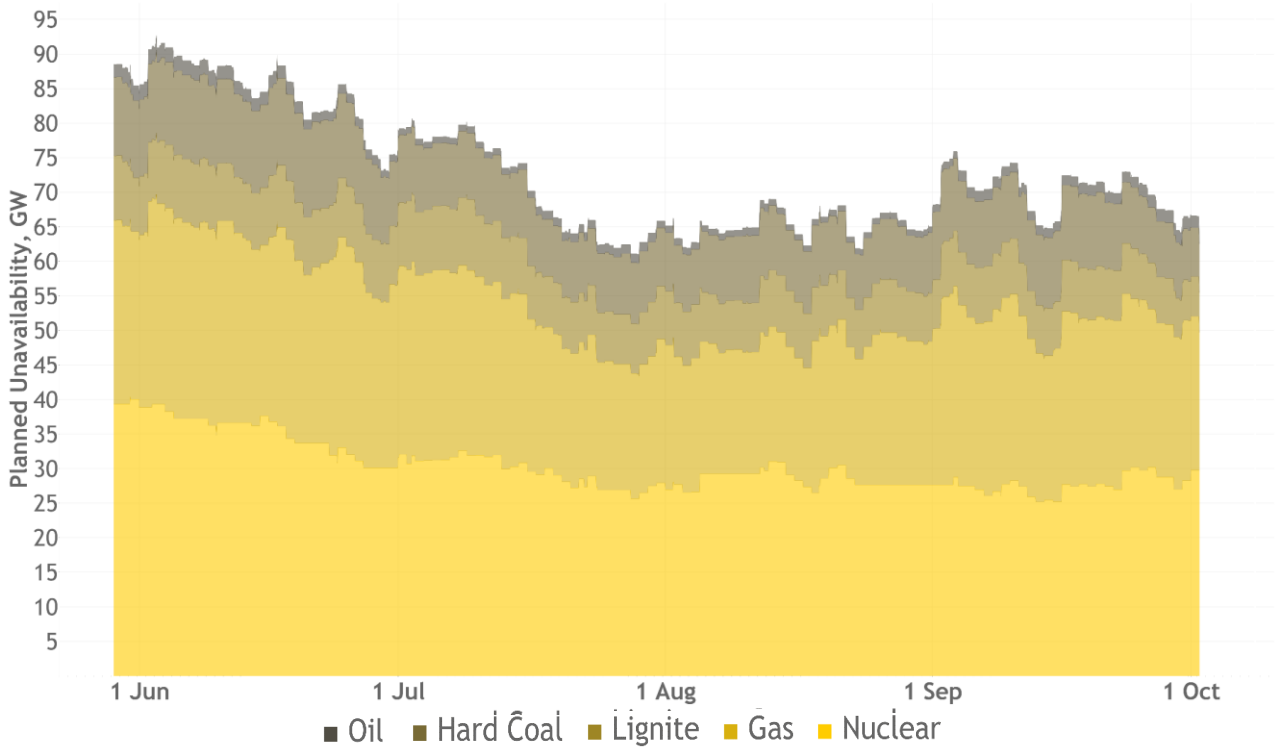


Total increase RES:
2554 MW

Total decrease Thermal:
-227 MW

Overall thermal generation remains the same

Planned unavailability of thermal units (as of March)



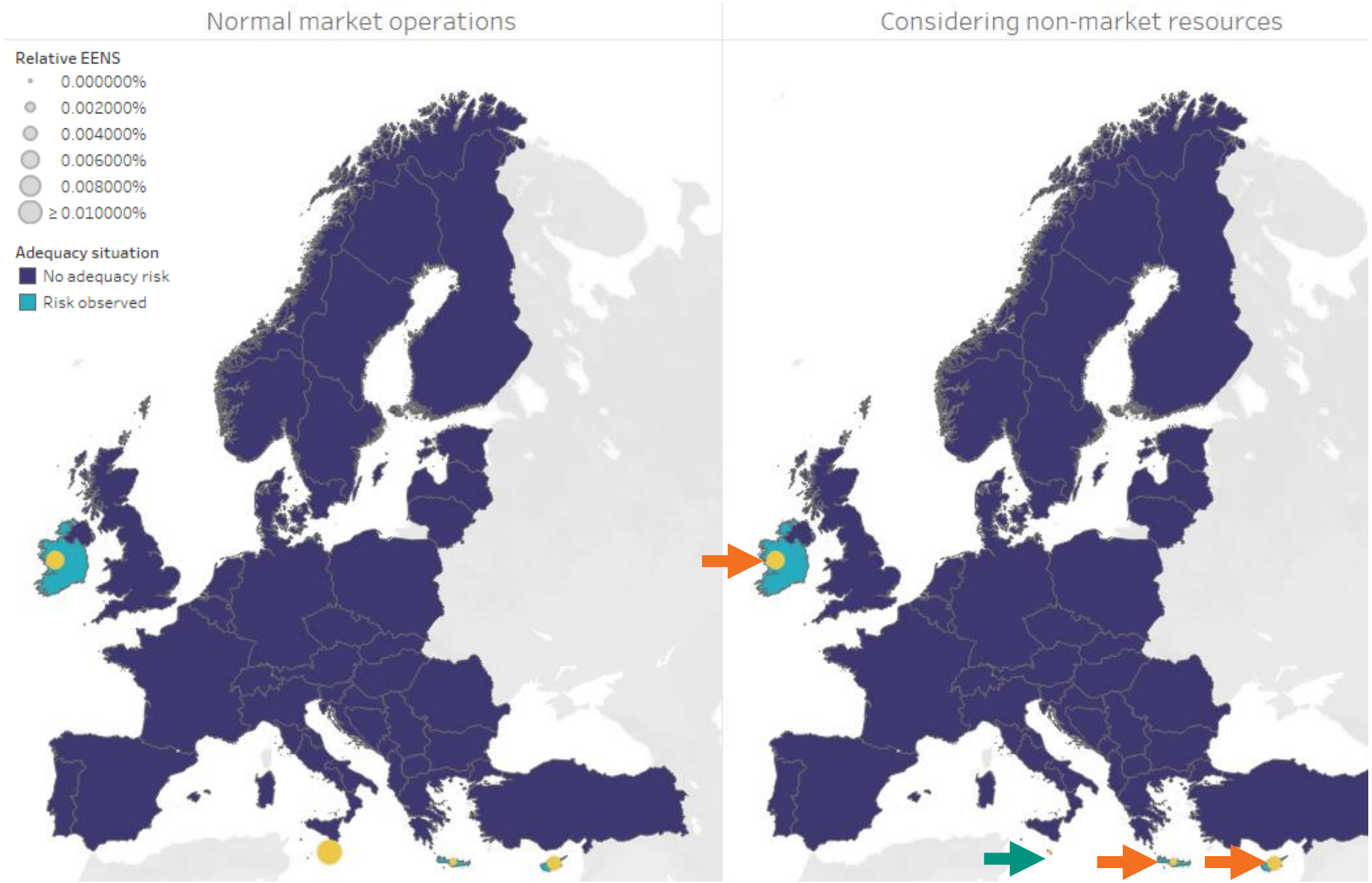
Decrease towards mid-summer

Minor increase end of summer

Nuclear shows highest levels of unavailability

Adequacy overview

- Risks in islands
- Dedicated non-market resources can help addressing risks
- Continuous monitoring by TSOs and RCCs



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 overview – insights in areas showing risk

Adequacy risks in Creta, Cyprus, Ireland, and Malta in summer 2023.
Situation is continuously evolving and requires close monitoring.

High unplanned outages

Unfavourable weather conditions: high load and low RES

Aging thermal units and wind reliance

Reliance on non-market resources

Detailed adequacy overview - weekly LOLP and seasonal EENS

LOLP = Loss of Load Probability (probabiliy that at least 1 consumer could loose electricity supply)

Scenario
- Normal market operations
- Considering non-market resources

ENTSO-E: Winter 2023 – 2024 Prospects

Preparing for winter 2023-2024

Similar but no exceptional new risks could be anticipated for winter 2023-2024.
ENTSO-E and TSOs remain vigilant and will monitor energy sector evolution.
Early updates from EC and Member States on anticipated measures can be input to the next Winter Outlook assessment.

Most prominent factors requiring close follow-up and assessment are hydro reservoir levels and nuclear availability in Europe.

Sensitivity on demand reduction considered again.
Critical Gas Volume (CGV) analysis maintained.

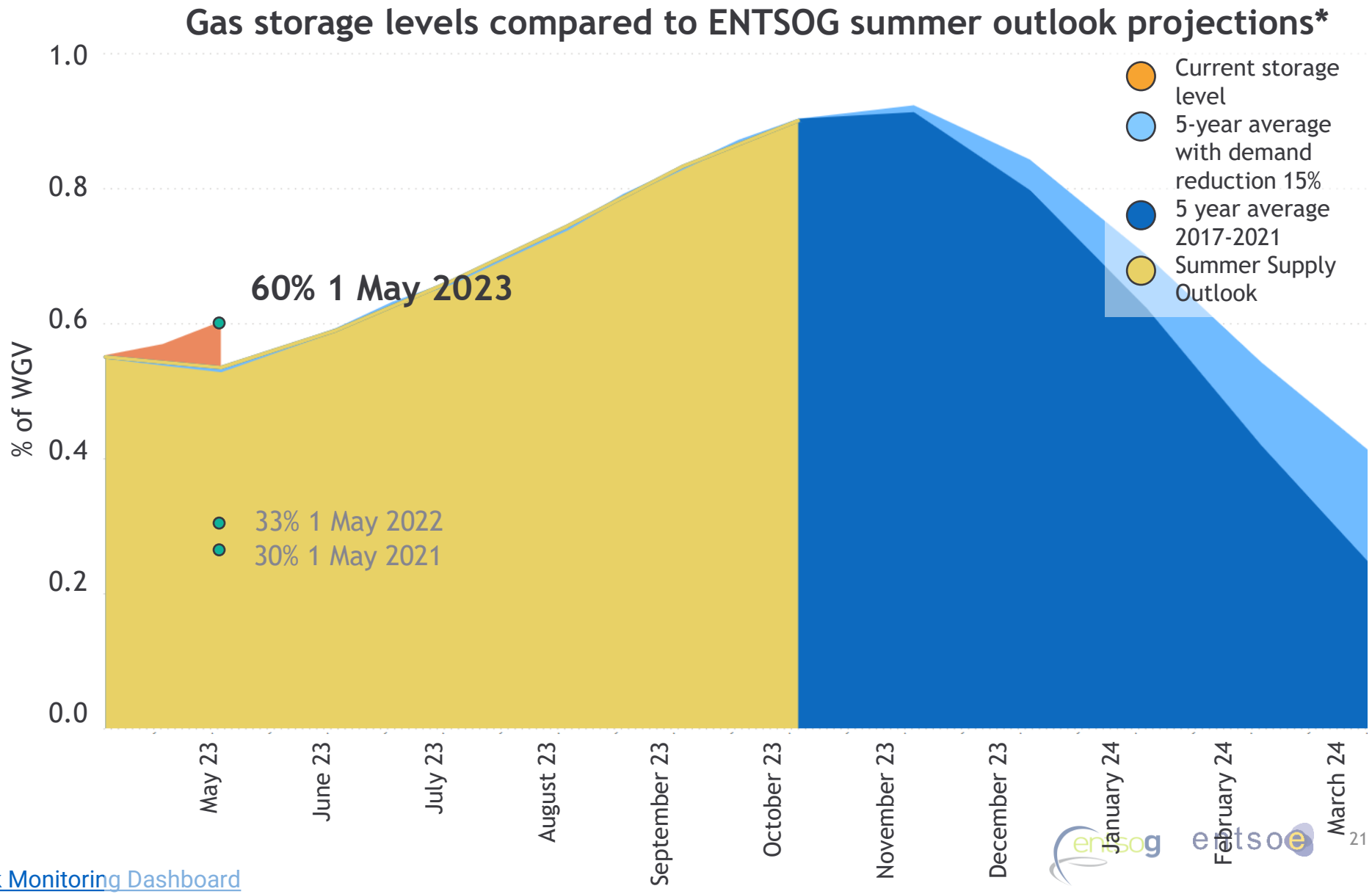
ENTSO-E is striving to release Winter Outlook 2023-2024 early November.

Gas supply remains key for electricity adequacy

Preparatory work building on the experience of winter 2022-2023.

Gas storage prospects (ENTSOG) appear more positive than last year

Critical Gas Volumes will be assessed



* ENTSOG Seasonal Supply Outlook Monitoring Dashboard

Thank you 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

Summary

- ENTSOs seasonal outlooks are unique pan-European & system wide analysis of security of supply

- Adequacy assessed in:
  - Electricity system under various typical conditions
  - Gas system under extreme events or in case of supply disruptions

- Situation in gas and electricity system during the winter 2023-2024 will depend on whether risks would materialize. European TSOs and ENTSOs are anticipating and closely working on next winter preparation.

Upcoming events

13
Jun
2023

WEBINAR

Workshop ERAA 2023 - Methodological Insights

Online ENTSO-E

Thank you for your attention!