



Winter preparedness

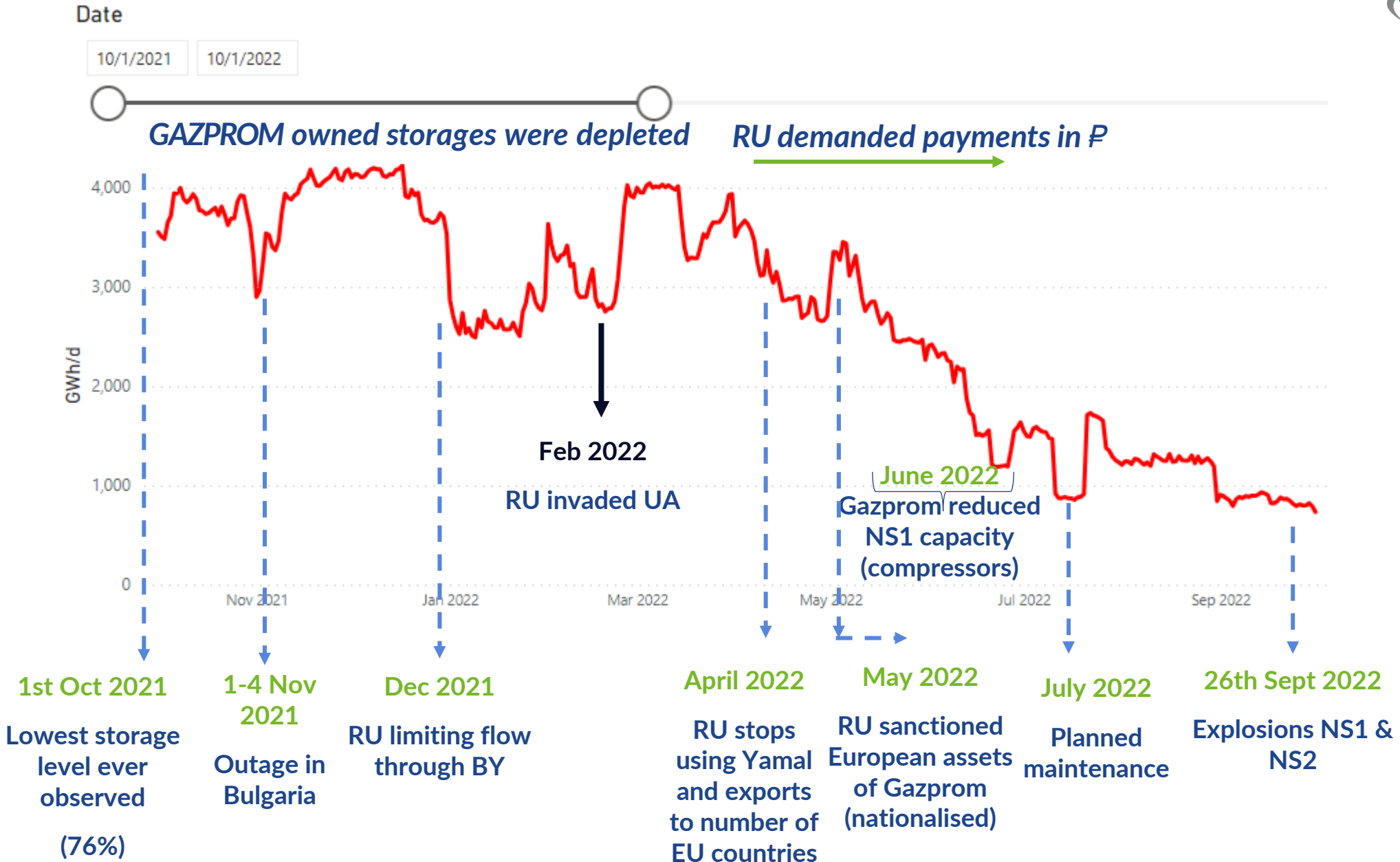
How Europe performed this summer and what Winter may bring

Kacper Żeromski, Deputy Director, System Development

How Europe reduced its dependency on Russian gas?

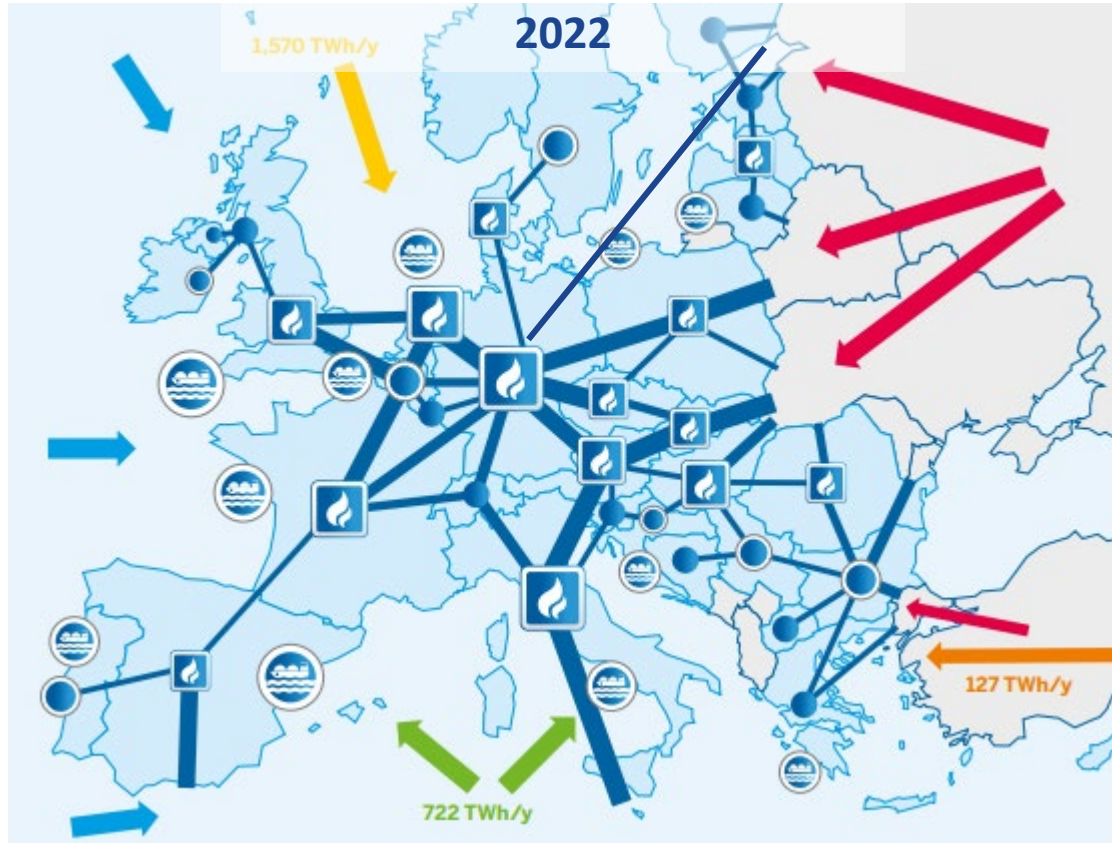
Retrospective & lessons learned for this winter

How RU supplied gas to Europe - gas year 2021/22



EU dependency on the RU - SOS context – before Feb 2022

EU Infrastructure before Feb



Findings from Summer Outlook 2022, Yearly Outlook 2022



1

COOPERATION IS KEY

All countries need to be able to cooperate to:

1. **Avoid the risk of demand curtailment**
2. **Share the risk of demand curtailment if infrastructure allows for it**
3. **Inject to storages and withdraw in optimal way**
4. **Use their import infrastructure in coordinated way**



2

ENHANCED CAPACITIES + INVESTMENTS

Short term and mid term infrastructure developments are needed



3

ALTERNATIVE SUPPLY

Additional LNG and other than Russia supply pipeline supply



4

DEMAND RESPONSE

As a result of organic reduction due to prices or policy-based demand measures would be needed to ensure security of supply and preparedness



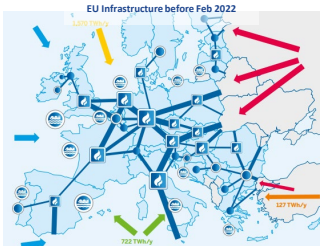
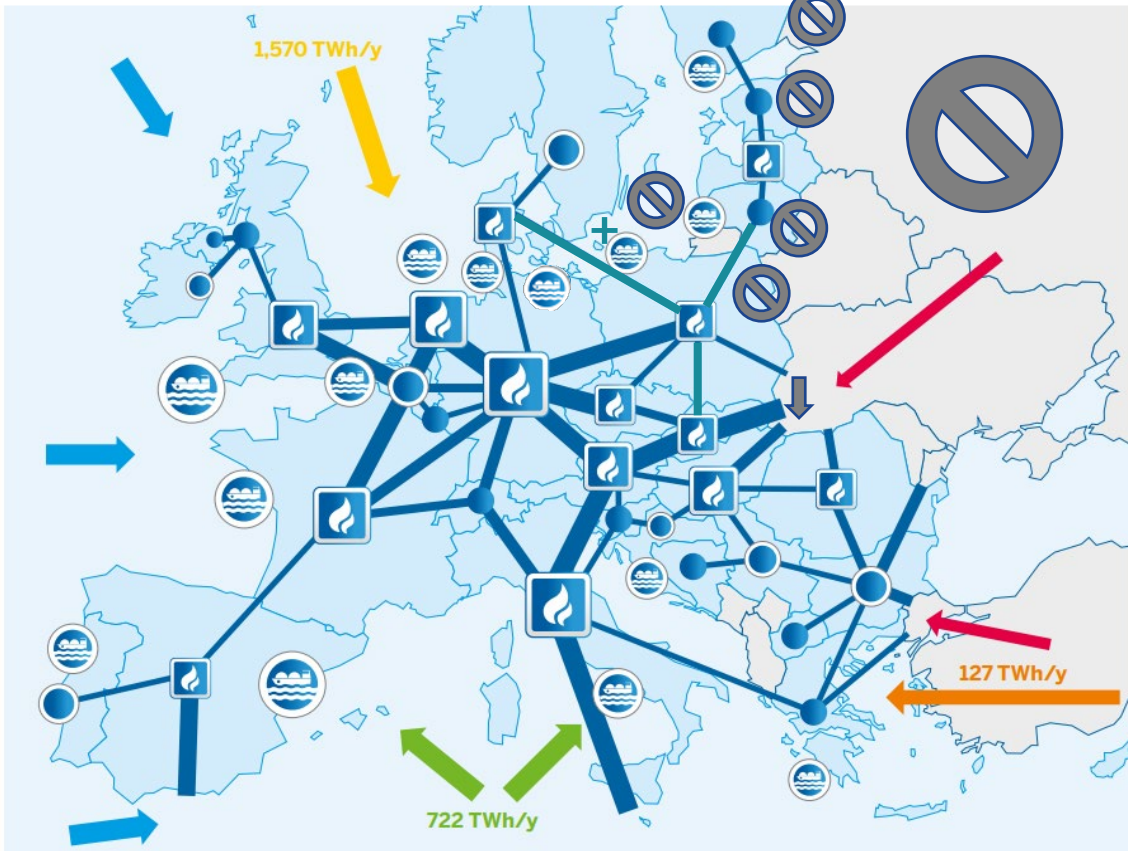
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PREPAREDNESS

Storages are key for peak demand situation

Change of the landscape - measures

EU Infrastructure after Jan 2023



COOPERATION IS KEY



Multiple new interconnections **allow to efficiently avoid the risk of demand curtailment**, cooperate in high demand situations, including solidarity scenarios



ENHANCED CAPACITIES + INVESTMENTS

Finalisation of the ambitious investment program contributes to **increased market integration** and enabled



ALTERNATIVE SUPPLY

Baltic Pipe opened access to the new supply source in the CEE region. More LNG capacity bypassing bottlenecks from West to East



DEMAND RESPONSE

Significant number of investments contributed to market integration, allowing better response to the pan-European supply challenges



PREPAREDNESS

New gas source, more capacities available allows to increase security of supply and seasonal preparedness in the region

Summer 2023 and Winter Overview 23/24

How readiness was ensured

Assumptions

Demand

Summer season (APR 2023 – SEP 2023)

- Forecast demand provided by TSOs

Winter season (OCT 2023 – MAR 2024)

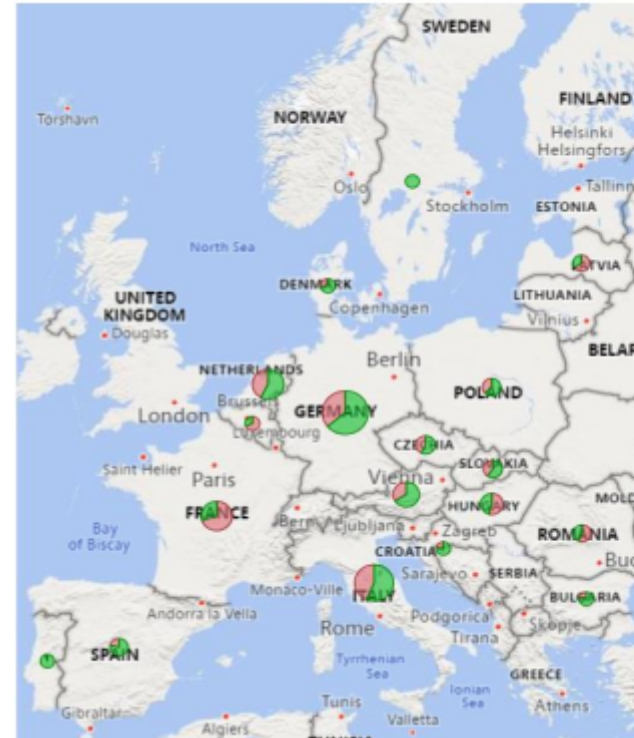
- Reference winter (5-year average*)
- Reference winter with 15% reduction (5-year average -15%)
- Cold winter (considered in SoS simulations report)
- Cold winter with 15% reduction (considered in SoS simulations report -15%)

Capacities

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

Storage

● Available storage capacity [TWh] ● Energy stored [TWh]



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%

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 - 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 historical highest demand observed in Europe since 2009/10

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	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	No	14%
		Minus 15%	Yes	No	No	30%

Winter Supply Outlook 23/24 & Summer Overview 24

What to expect

New Winter Supply Outlook!



Different simulation periods

- Winter Season, Yearly, Summer Season, Peak day and 2-Week

System assessment under different demand scenarios:



- Reference Winter (forecasted) and Cold Winter (highest demand since 2009/10)
- Peak day (1-in-20 years), 2-Week Cold Spell (1-in-20 years) and Cold Winter Peak day, 2-Week Cold Spell



Different storage level target:

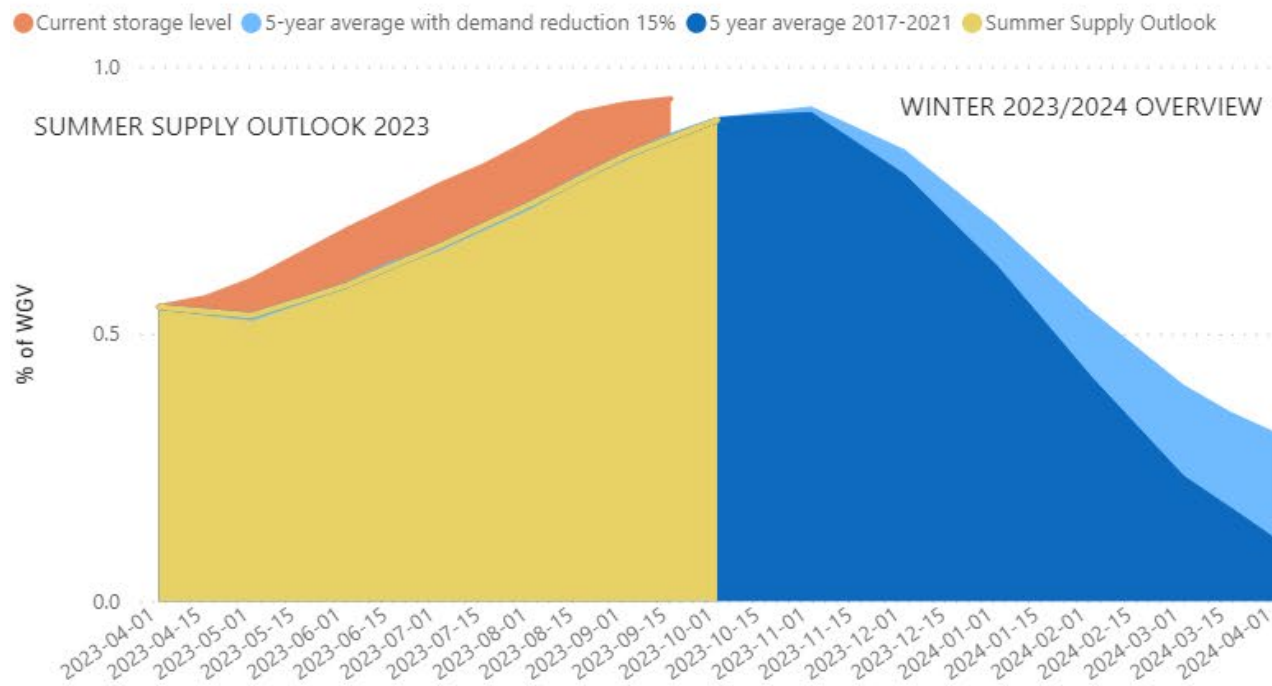
- 30% on 1 APR 2024 (Mandatory/non-Mandatory target)
- 90% on 1 OCT 2024 (Mandatory/non-Mandatory target)



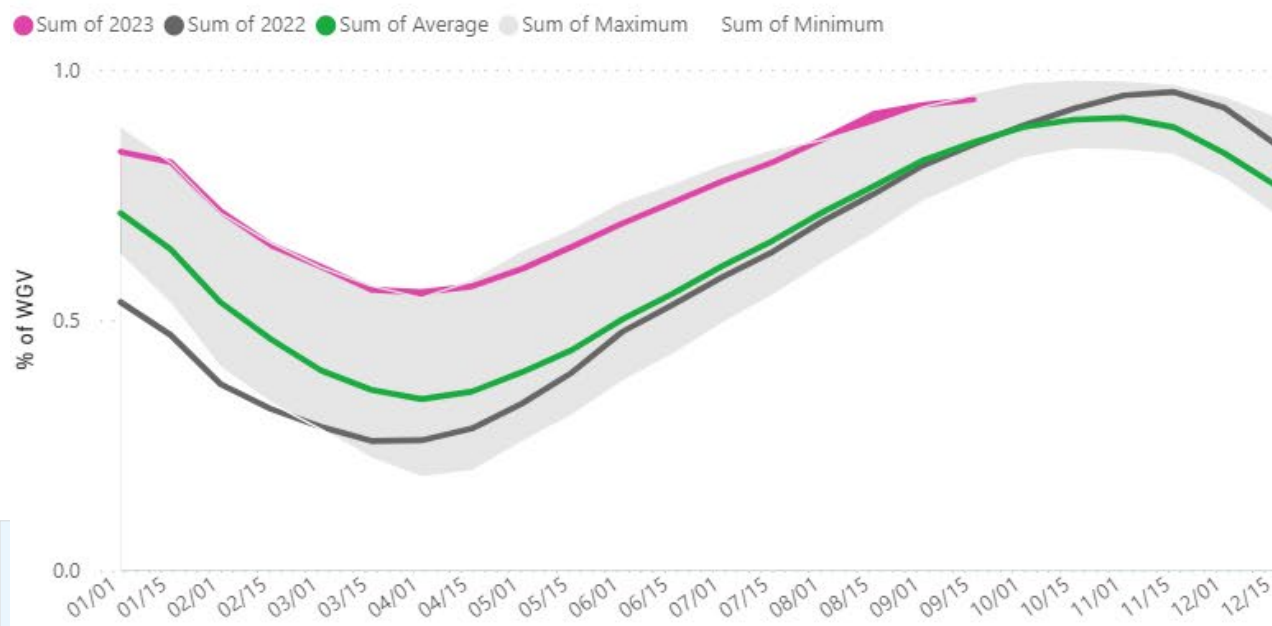
Different supply scenarios

- LNG – high, reference and low supply potential
- Russian supplies minimized and fully disrupted

Storage evolution vs SSO scenarios

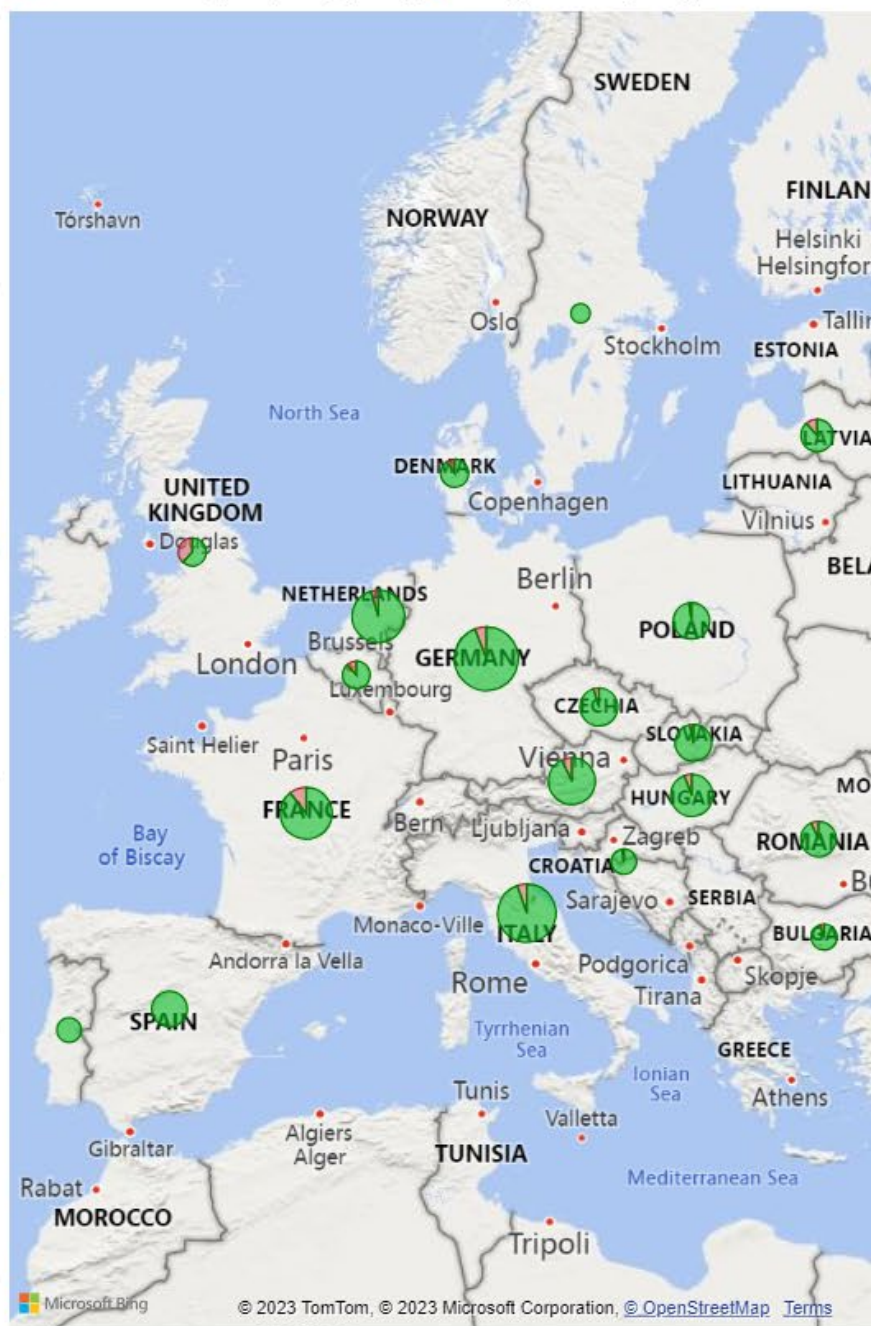


Storage evolution vs 2015-2020



Storage levels

Available storage capacity [TWh] (red dot), Energy stored [TWh] (green dot)



Data source
[ENTSOG Seasonal outlooks](#)
 and
<https://agsi.gie.eu/#/>

Working Gas Volume

Country	Value [TWh]	Value [bcm*]
Austria	97.64	8.90
Belgium	9.13	0.80
Bulgaria	5.89	0.50
Croatia	4.77	0.40
Czechia	44.67	4.10
Denmark	9.85	0.90
France	136.35	12.40
Germany	253.37	23.00
Hungary	67.70	6.20
Italy	195.20	17.70
Latvia	22.60	2.10
Netherlands	142.41	12.90
Poland	37.54	3.40
Portugal	3.57	0.30
Romania	33.86	3.10
Slovakia	38.90	3.50
Spain	34.09	3.10
Sweden	0.10	0.00
UK	9.86	0.90

* indicative: value in TWh / 11



Thank you for your attention

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