

CreditSights European Outlook Conference

8 December 2022

Euro Utilities: Next Winter Is Coming

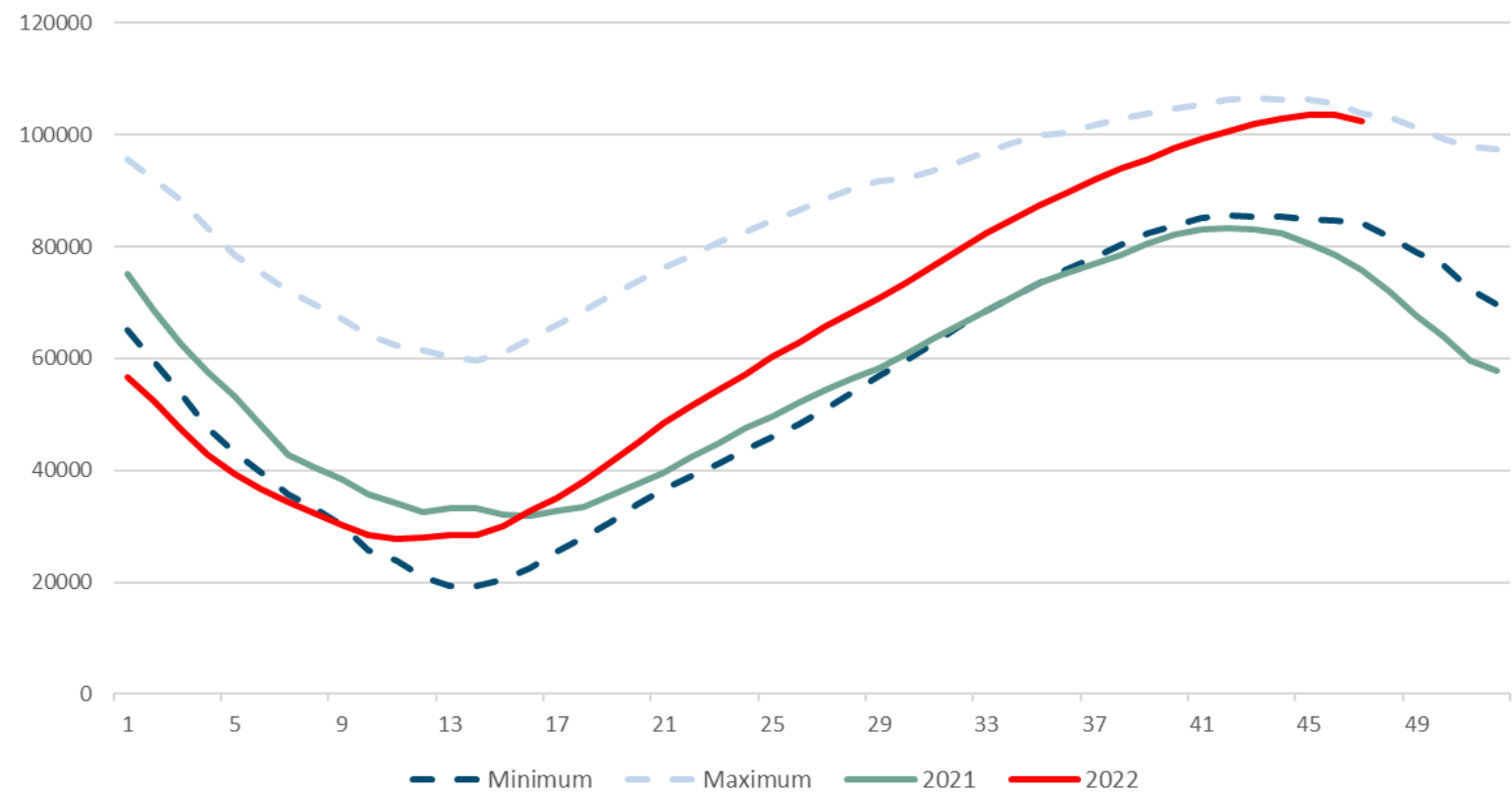
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European Gas Supply

Gas Storage Levels Are At, Or Near, Record Highs

Gas Storage Levels for Europe (mcm)



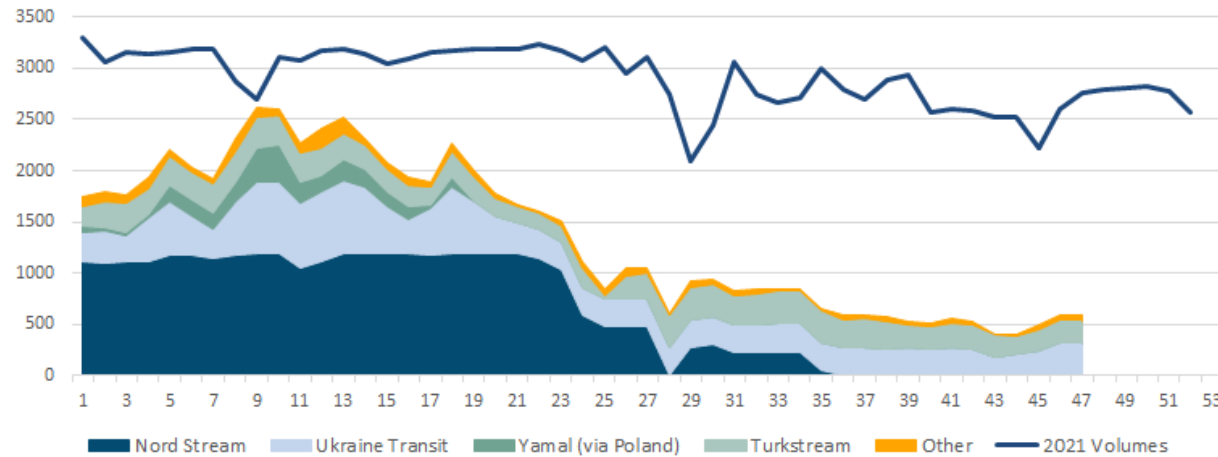
Country Percentages

Europe	: 94%
Germany	: 99%
Italy	: 93%
France	: 98%

See appendix for more details

The Current State Of Gas Imports From Russia

Gas Import Volumes from Russia in 2022 (mcm)



- ~170 bcm of gas comes from Russia into Europe in a normal year
- Russia is currently exporting about 2-3 bcm per month to Europe, or about ~27 bcm per year
- Without demand reduction that potentially leaves a shortfall of about 140 bcm to be filled, mostly by new LNG deliveries
- LNG import volumes have historically been ~100 bcm pa but have reached ~140 bcm to date this year

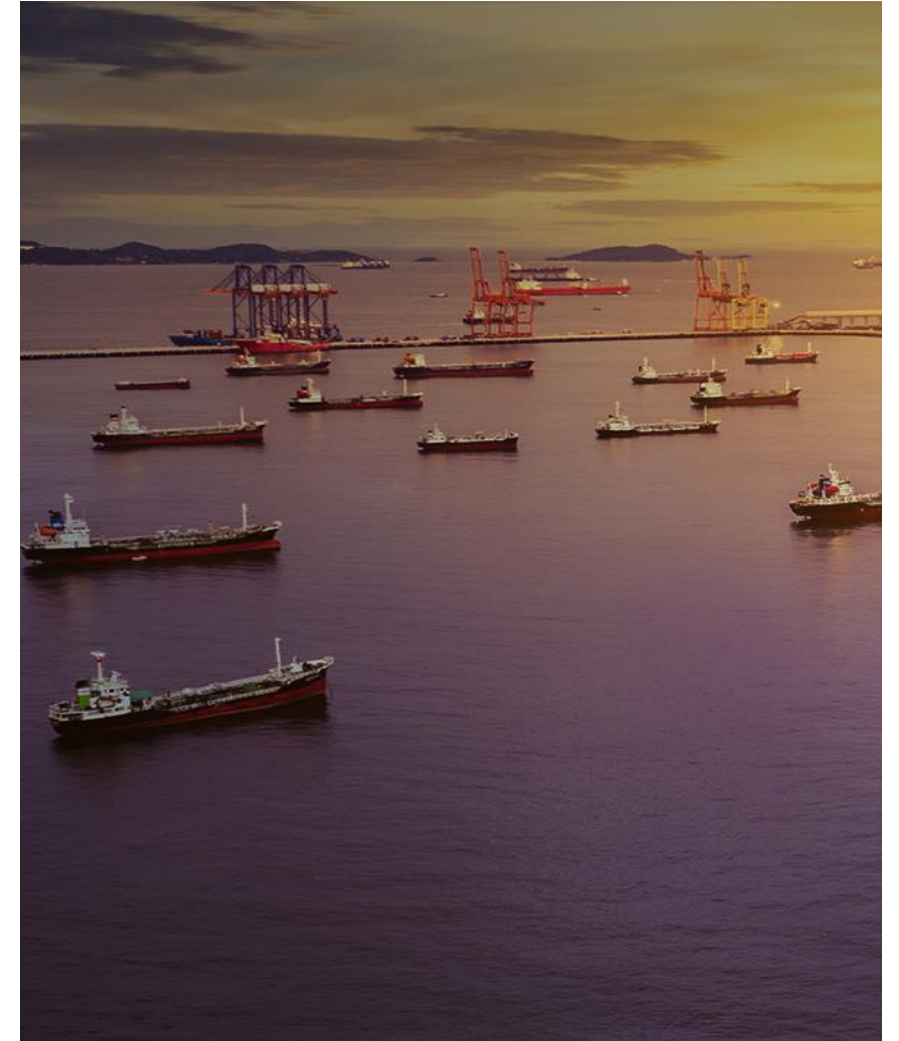
Gas import volumes by source in 2022 (bcm)

bcm	Russia		Norway		LNG		Algeria		Other		Total volumes	
	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021	2022
To week 47	142.9	64.2	120.7	125.1	88.7	141.1	34.9	30.3	11.2	13.3	398.4	374.0
YoY change		-55%		4%		59%		-13%		19%		-6%
For full year	153.4	NA	132.3	NA	98.1	NA	37.4	NA	11.9	NA	433.2	NA

Storage Levels Coming Out Of Winter Could Be In The 30-40% Range

- So far this year other suppliers have increased volumes to Europe by 20%, with LNG imports growing by 60%
- If this 20% increase is maintained over the winter to April 2023 we estimate storage levels will fall to about 40%, assuming Russia continues supplying at about 0.5 bcm per week, and that weather is normal
- If Russian volumes fall to zero we estimate storage levels coming out of winter will be about 30%

So, what does this mean for next winter?



European Power Supply



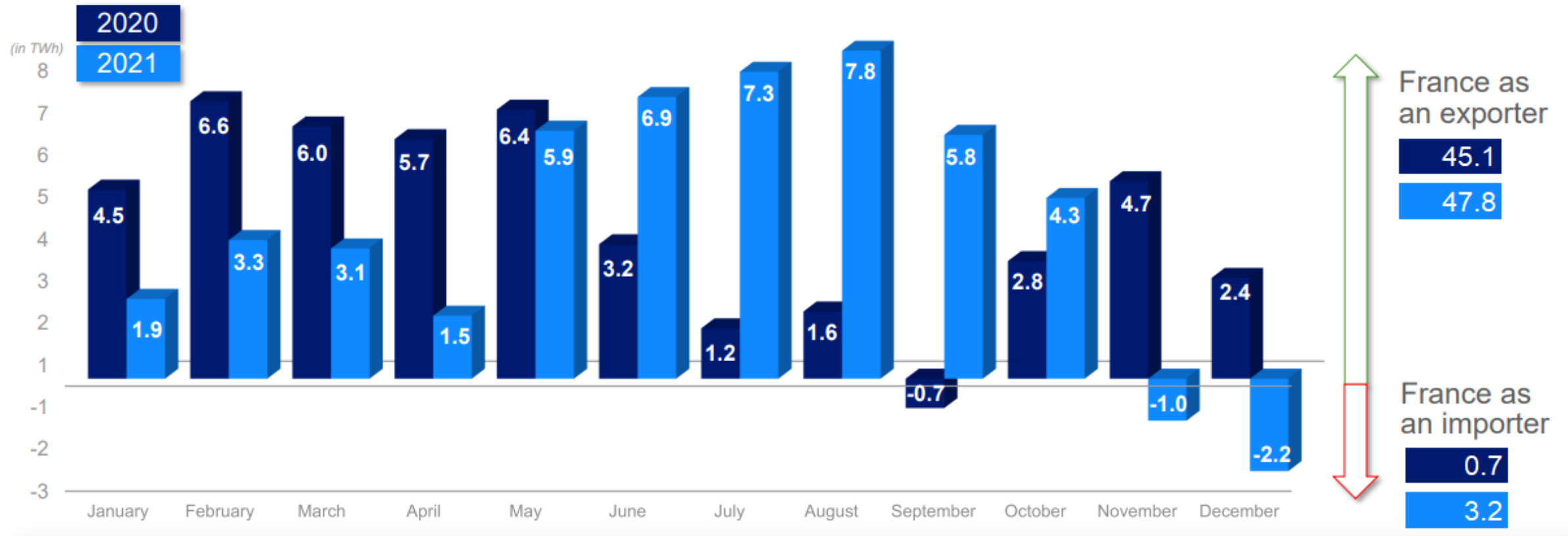
2022 Has Been A Difficult Year For The European Power Market

- EDF has suffered major outages because of concerns over corrosion in some of its nuclear plants
- Hydro conditions have been some of the worst for decades, with hydro volumes down 45% in Spain, almost 40% in Italy and 25% in France (EDF volumes)
- The war in Ukraine and Putin's weaponization of gas have lead to excessively volatile and high power and gas prices
- Governments have generally been supportive of utilities but are imposing windfall taxes and capping prices to protect consumers and finance aid for vulnerable customers



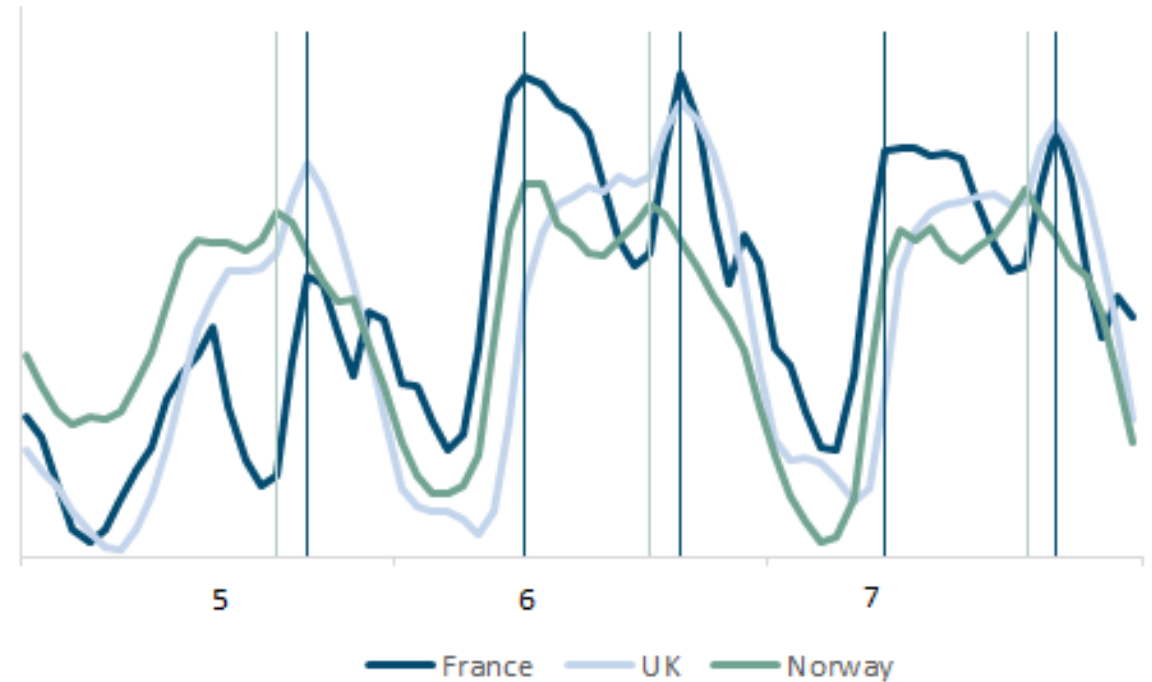
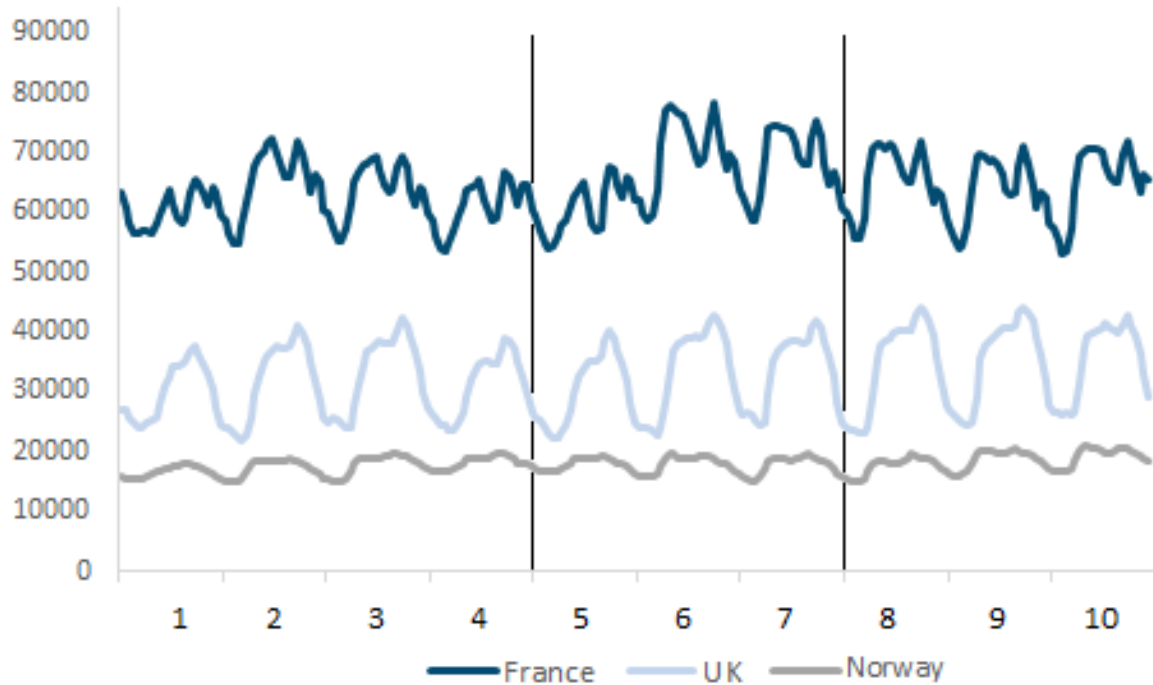
French Exports To Europe And The UK Will Likely Be Reduced

French Power Exports for 2020 and 2021



But Peak Power Does Not Always Coincide

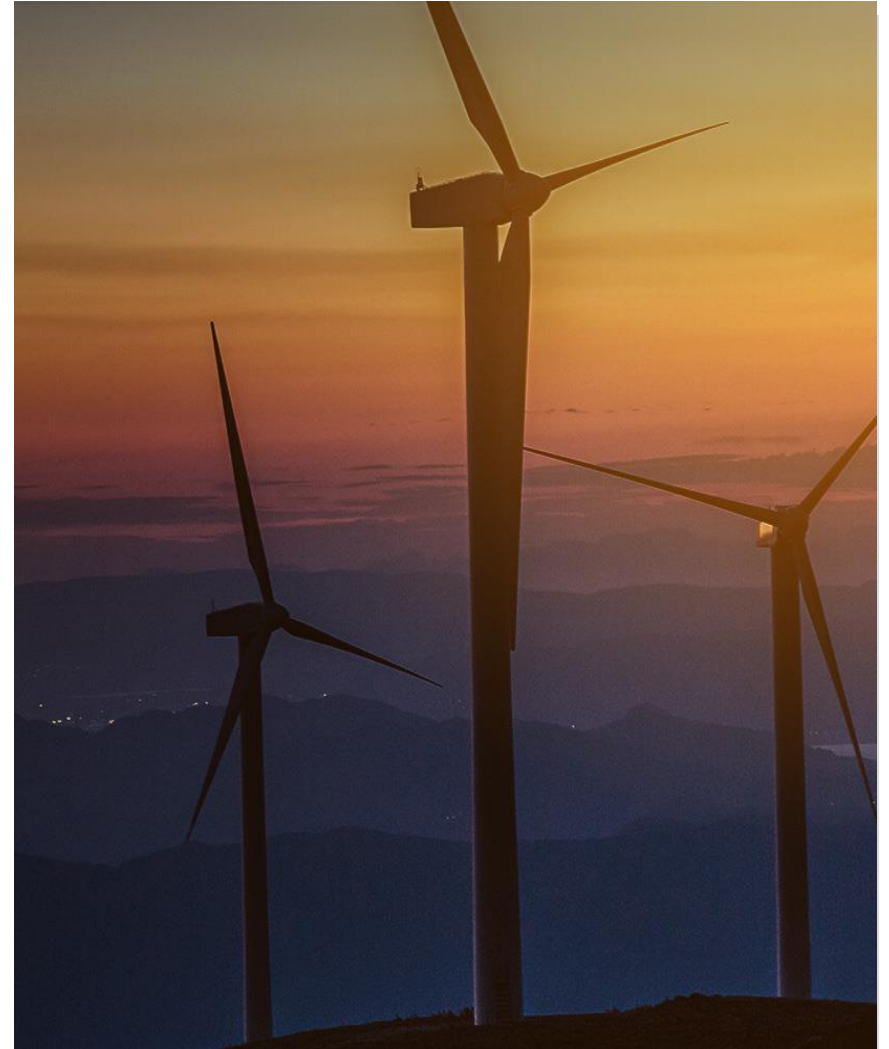
Peak Power Demand (MW) does not Coincide



Governments Have Responded To Fears Over Security Of Supply

- In Germany three nuclear plants that were due to close at the end of 2022 will continue to run over the winter. Lignite and coal plant that was mothballed or in the strategic reserve has been brought back to the market
- In the Netherlands a 35% limit on the capacity of coal plants has been removed until 2024
- In Denmark, the government has ordered Ørsted to keep three conventional plants ready for operation until 2024
- Italy has temporarily abandoned plans to close all coal plant by 2025, the UK has postponed the closure of some coal plants, as has France and Spain

So, what does this mean for next winter?



Winter 22/23 And 23/24

Winter 22/23

- Reasonably comfortable
- Gas rationing unlikely
- Possible power rationing

Winter 23/24

- Gas rationing cannot be ruled out
- Power rationing more unlikely

The big caveat here is the weather – a long cold period could raise demand and increase the need for energy conservation

The gas situation will also be impacted by prices, and demand from Asia



Power And Gas Expectations For Winter 23/24

Power 23/24

- Higher volumes from EDF
- More normal hydro year
- New renewable capacity
- Coal plants remain available

Gas 23/24

- A lot will depend on gas supplies from Russia, on storage levels coming out of winter 22/23 and on Asian demand
- European (EU + UK) production and pipeline imports in a normal year are around 400-420 bcm, of which ~170 bcm is from Russia. LNG imports are typically ~110 bcm pa
- In 2022 we estimate about 67 bcm from Russia and about 160 bcm from LNG
- If Russia continues to supply at current levels, of ~27 bcm pa then, with flat demand, we estimate LNG imports would need to reach ~190 bcm
- If Russia cuts to zero total LNG imports would need to reach ~215 bcm
- We doubt this gap can be filled by LNG or increased pipeline imports – countries will have to actively reduce demand to safeguard supplies



Other Issues For 2023



Other Issues For 2023

Liquidity

- Margin calls and seasonal working capital variation

Increasing Costs of New Projects

- Inflation, higher interest rates and supply chain issues are delaying and forcing up costs, while reducing returns of new projects

Price Caps and Windfall Taxes

- We see these as more an equity than credit issue



Hybrid Extension Risk

Market conditions mean hybrid resets are currently, in many cases, lower than the cost of refinancing, although refinancing costs have reduced recently

Euro utility hybrids with first calls in 2023										
Company	Issue Date	Amount	Maturity	Next Call	Cpn	YTC	YTM	Price	Reset Cpn	Est. Refi Yield
ELECTRICITE DE FRANCE SA	29/01/13	USD 2098	Perpetual	29/01/23	5.250	6.50	7.21	99.80	7.218	7.500
ENGIE SA	16/01/18	EUR 30	Perpetual	16/04/23	1.375	2.15	3.66	99.91	3.679	N/M
IBERDROLA INTL BV	22/11/17	EUR 1000	Perpetual	22/05/23	1.875	4.26	4.12	99.48	4.126	6.0-6.5
ORSTED A/S	26/06/13	EUR 350	26/06/3013	26/06/23	6.250	2.72	7.12	101.89	7.534	5.250
ENEL SPA	24/05/18	EUR 750	Perpetual	24/11/23	2.500	4.94	4.63	98.31	4.630	6.5-7.0
ELIA GROUP SA/NV	05/09/18	EUR 700	Perpetual	05/12/23	2.750	5.63	4.96	97.92	4.954	N/A
ENEL SPA	24/09/13	USD 1250	24/09/2073	24/09/23	8.750	8.10	9.50	100.48	9.860	6.5-7.0
VATTENFALL AB	19/11/15	USD 400	19/11/2078	19/11/23	6.100	8.35	7.83	97.97	7.794	5.75-6.25

Up until a week ago the big question was over the EDF USD hybrid with a call in January 2023, but now EDF has successfully refinanced that call

Companies highlighted in RED have already addressed the situation



The image features a series of high-voltage electrical pylons and power lines stretching across the frame. The pylons are silhouetted against a dramatic sky at sunset or sunrise, with warm orange and yellow light breaking through scattered clouds. The power lines curve gracefully between the towers, creating a sense of depth and perspective. The overall composition is a full-page background image.

Positioning For 2023

Sector View – Market Perform

Top Picks

Enel: New plan sees €21 bn of asset sales, a €10 bn debt reduction and stronger metrics. At forefront of the energy transition

Fortum: Company has benefitted from a resolution of a difficult situation with Uniper and is concentrating on its low-cost Nordic generation.

Top Pans

EDF: Beset by fundamental issues with its nuclear plants and hampered by French regulatory measures and, while we see the renationalization as supportive, the credit is likely to remain volatile.

Naturgy: No strategy, poor communication. Naturgy had planned to split the business but that has been delayed and may be abandoned due to market uncertainty.



Appendices

1. Gas storage levels across Europe (27 Nov 2022)
2. Estimated storage levels 1 April 2023
3. Gas import volumes in 2022 (data to 29 Nov 2022)
4. Possible gas deficit in 2023 under different scenarios



1. Gas Storage Levels Are At, Or Near, Record Highs

Gas Storage Levels Across Europe (billion cubic meters)

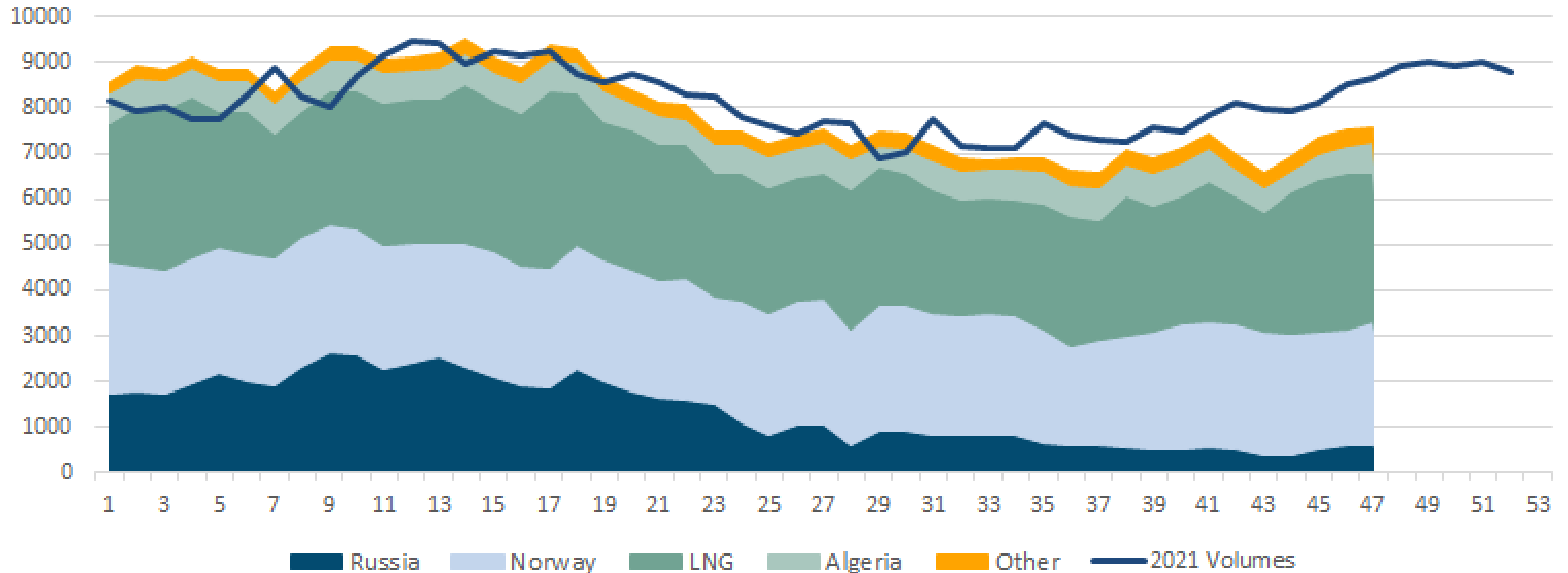
	Operational storage capacity (bcm)	Annual consumption 2020	Storage percentage	Current gas in storage (bcm)	Current percentage full
Austria	9.1	8.6	106%	8.7	95%
Belgium	0.7	16.2	4%	0.8	109%
Czech Republic	4.2	8.7	48%	4.0	96%
Denmark	0.9	2.2	43%	0.9	98%
France	12.8	41.1	31%	12.5	98%
Germany	23.5	86.5	27%	23.3	99%
Italy	18.5	69.3	27%	17.1	93%
Netherlands	13.3	33.5	40%	11.9	90%
Portugal	0.4	5.6	7%	0.4	98%
Spain	3.4	32.4	10%	3.3	97%
Sweden	0.0	1.2	1%	0.0	93%
Total EU	106.9	360.8	30%	100.4	94%
UK	0.9	73.5	1%	1.0	108%
Total with UK	107.8	434.3	25%	101.4	94%

2. Storage Levels In 2023 Will Depend On Russia And Other Measures

Estimated Storage Levels at 1st April 2023

			Storage	Total Imports		Total	% from	% from	% from	
			Storage	percent	Russia	Other	Usage	Storage	Russia	Other
A	EU storage levels at 1 December 2021 (bcm)	75.8	77.1%							
	EU storage levels at 1 April 2022 (bcm)	28.5	28.6%							
	Gas from source	47.3		44.9	124.5	216.7	22%	21%	57%	
	Estimated future scenario									
B	EU storage level at 22 Nov 2022 (bcm)	103.5	94.6%							
Loss of Russian volumes										
C	Assumed Russian volumes (% of 21/22)			100%	50%	20%	10%	0%		
	Assumed Russian volumes			44.9	22.4	9.0	4.5	0.0		
	D=A-C Lost Russian volumes			0.0	22.4	35.9	40.4	44.9		
E=A+D	Assumed withdrawal from storage			47.3	73.2	86.6	91.1	95.6		
F=B-E	EU storage level at 1 April 2023 (bcm)			56.1	30.3	16.8	12.3	7.8		
	Storage level as %			51%	28%	15%	11%	7%		
Increase in other volumes if Russia delivers at 20%										
G	Assumed increase in other deliveries (%)			5%	10%	15%	20%	25%		
	Assumed increase in other deliveries (bcm)			6.2	12.5	18.7	24.9	31.1		
	Assumed other volumes			130.7	137.0	143.2	149.4	155.6		
H=E-G	Assumed withdrawal from storage			80.4	74.2	68.0	61.7	55.5		
I=B-H	EU storage level at 1 April 2023 (bcm)			23.0	29.3	35.5	41.7	47.9		
	Storage level as %			21%	27%	32%	38%	44%		

3. Gas Import Volumes By Source (mcm) In 2022



4. Gas Deficit For 2023 Under Different Scenarios

	2022E	Change vs 2022E 2023E		Change vs 2022E 2023E		Change vs 2022E 2023E		Change vs 2022E 2023E		Change vs 2022E 2023E		Change vs 2022 2023E	
Production													
EU-27													
United Kingdom													
Total production (EU-27 plus UK)	72	0.0%	72	0.0%	72	0.0%	72	0.0%	72	0.0%	72	0.0%	72
Pipeline Imports													
o/w Russia	67	-67	0	-40	27	-67	0	-40	27	-67	0	-40	27
o/w Africa	37	0.0%	37	0.0%	37	0.0%	37	0.0%	37	0.0%	37	0.0%	37
o/w Other CIS	20	0.0%	20	0.0%	20	0.0%	20	0.0%	20	0.0%	20	0.0%	20
o/w Middle East	10	0.0%	10	0.0%	10	0.0%	10	0.0%	10	0.0%	10	0.0%	10
o/w Norway	120	0.0%	120	0.0%	120	0.0%	120	0.0%	120	0.0%	120	0.0%	120
Total pipeline	254	-26.4%	187	-15.7%	214	-26.4%	187	-15.7%	214	-26.4%	187	-15.7%	214
Total production and pipeline imports	326	-20.6%	259	-12.3%	286	-20.6%	259	-12.3%	286	-20.6%	259	-12.3%	286
Demand													
EU-27													
United Kingdom													
Total demand (EU-27 plus UK)	470	0.0%	470	0.0%	470	-2.5%	458	-2.5%	458	-5.0%	447	-5.0%	447
Deficit to be filled by LNG	144		211		184		199		172		188		161
LNG Imports	160												

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