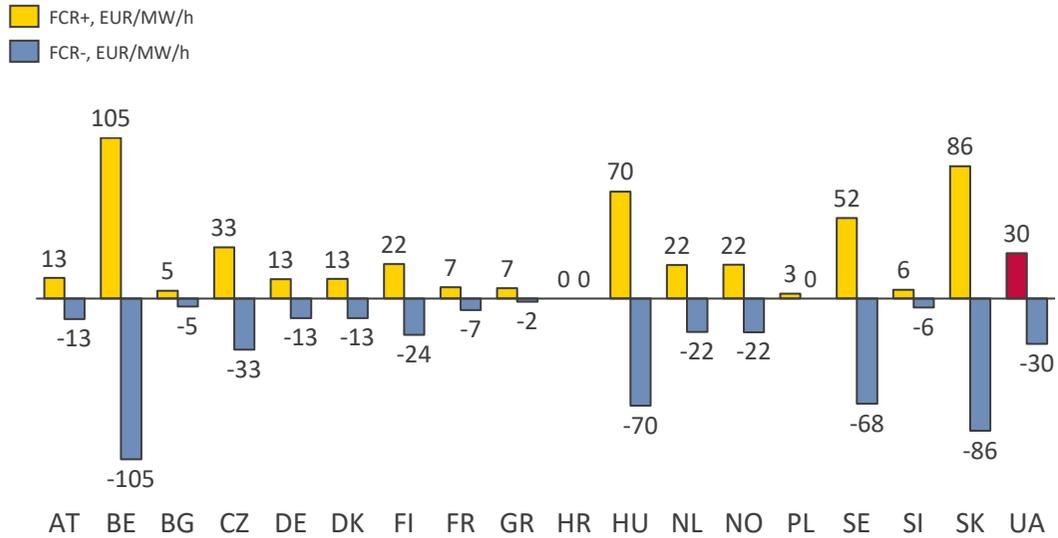


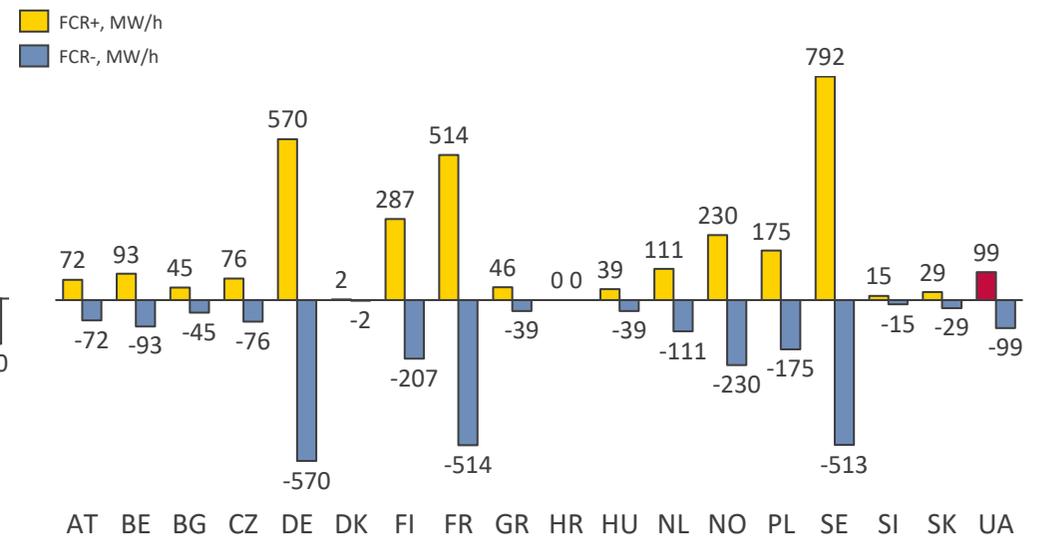
# 2023 FCR RESERVED CAPACITY, PRICES AND MARKET VOLUME



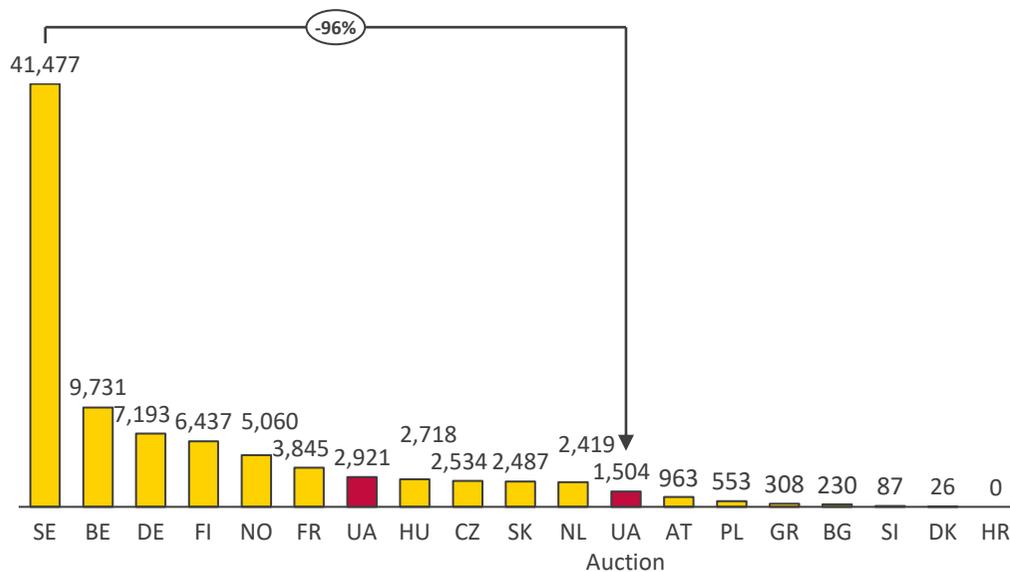
Average prices for contracted reserve capacity in 2023, EUR/MW/h



Annual average of contract reserve capacity in 2023, MW/h



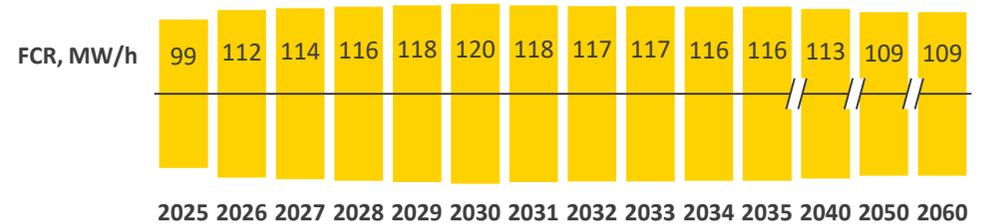
FCR volume EUR/h



Ukraine ranks as the 7th largest market by EUR volume, assuming FCR clears at the price cap of €29.5/MW/h

If the weighted average FCR auction price of €15.19/MW/h is applied, Ukraine drops to 12th position

FCR volume is expected to remain at 99 MW/h in 2025 and increase to 120 MW/h by 2030

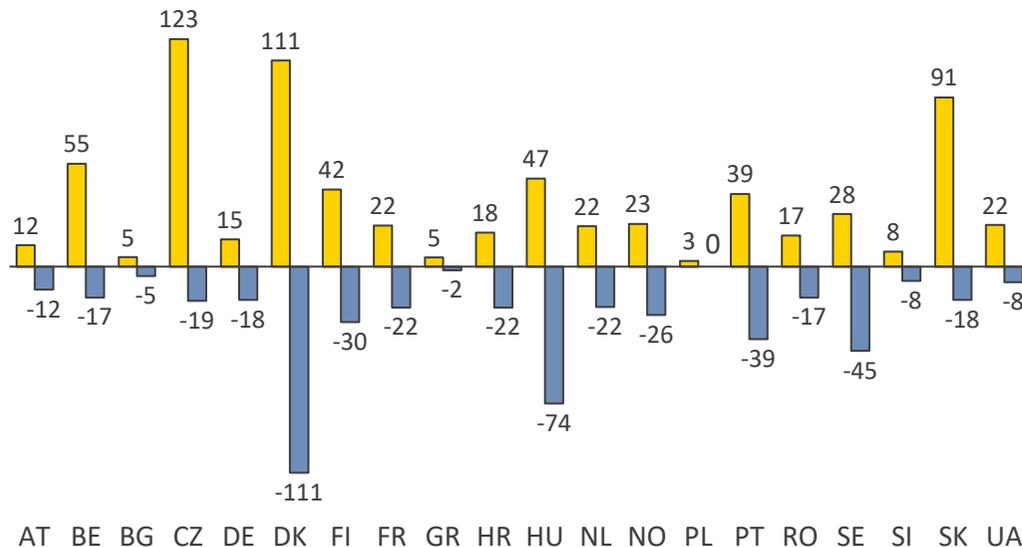


# 2023 aFRR RESERVED CAPACITY, PRICES AND MARKET VOLUME



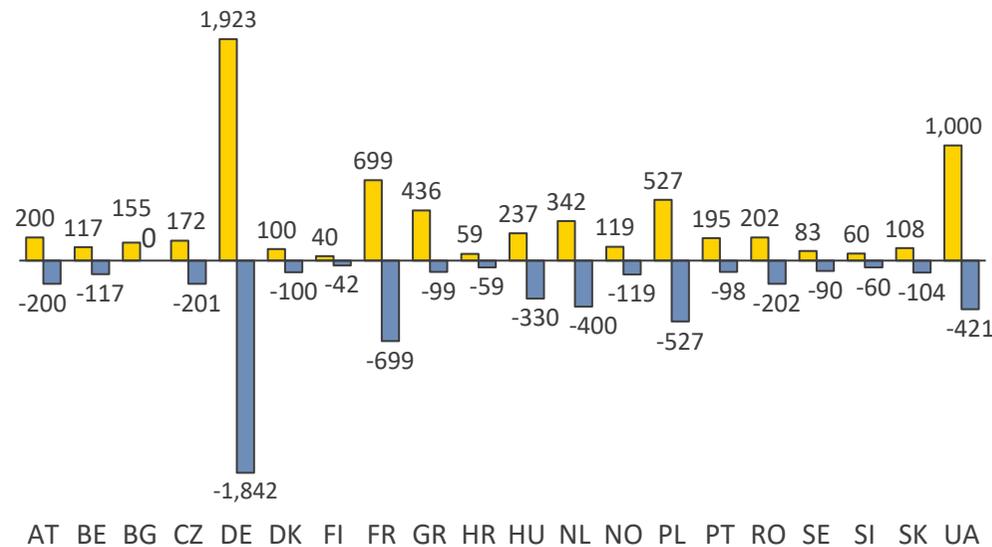
Average prices for contracted reserve capacity in 2023, EUR/MW/h

aFRR+, EUR/MW/h  
aFRR-, EUR/MW/h



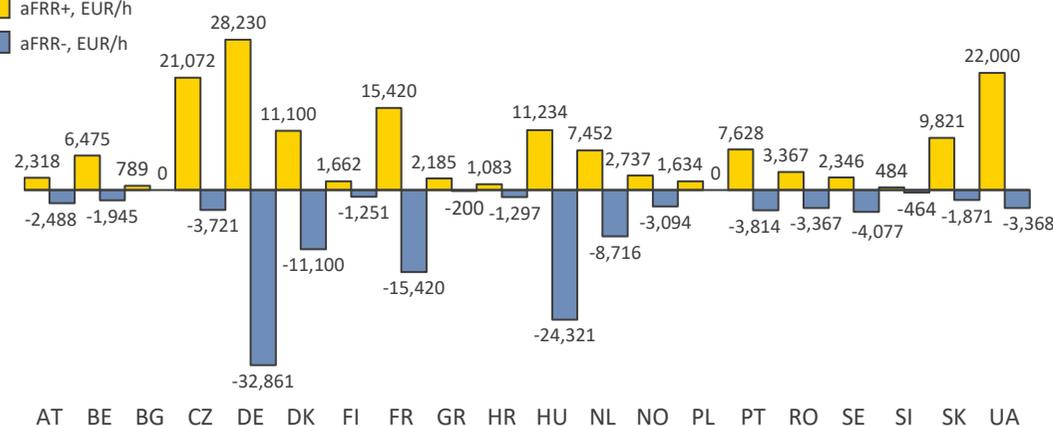
Annual average of contract reserve capacity in 2023, MW/h

aFRR+, MW/h  
aFRR-, MW/h



aFRR+/- BSP volume in 2023, EUR/h

aFRR+, EUR/h  
aFRR-, EUR/h



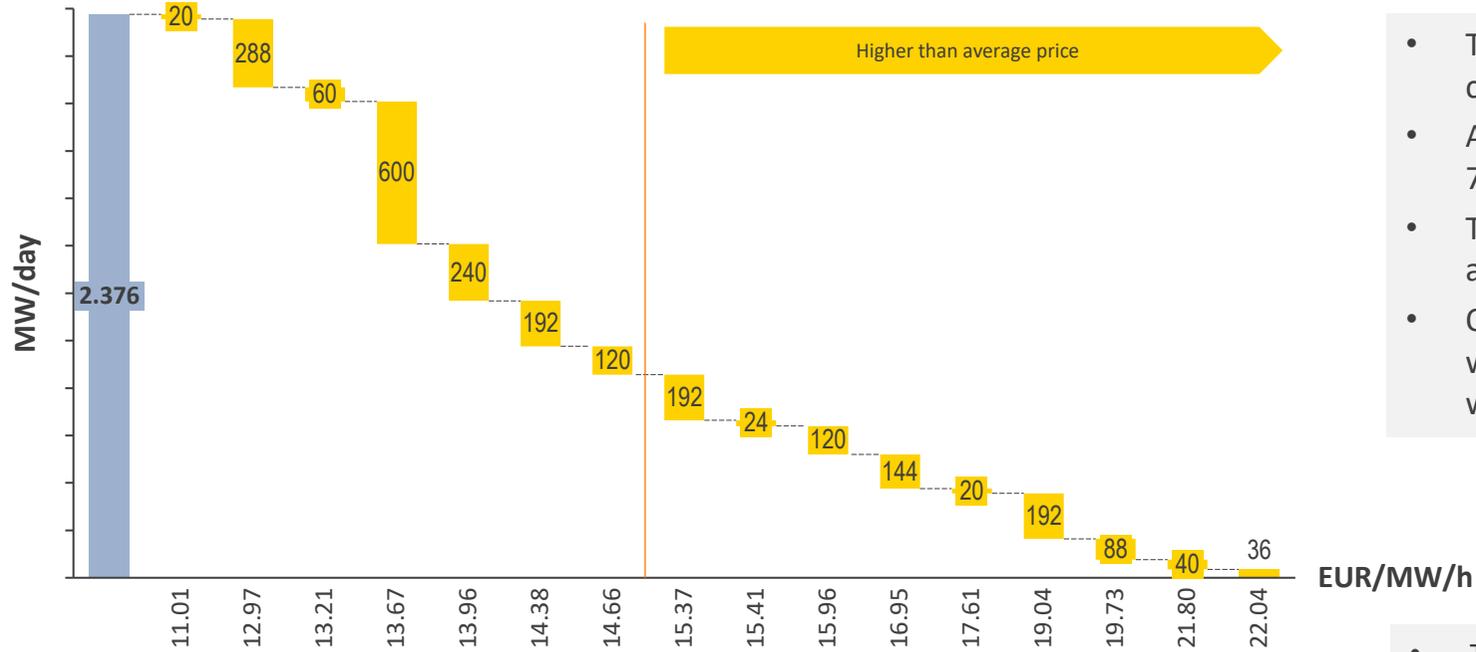
Ukraine's aFRR+ volume is comparable to Germany, Czech Republic, and France while aFRR- volume is significantly lower

No major changes in aFRR MW volume anticipated until 2033

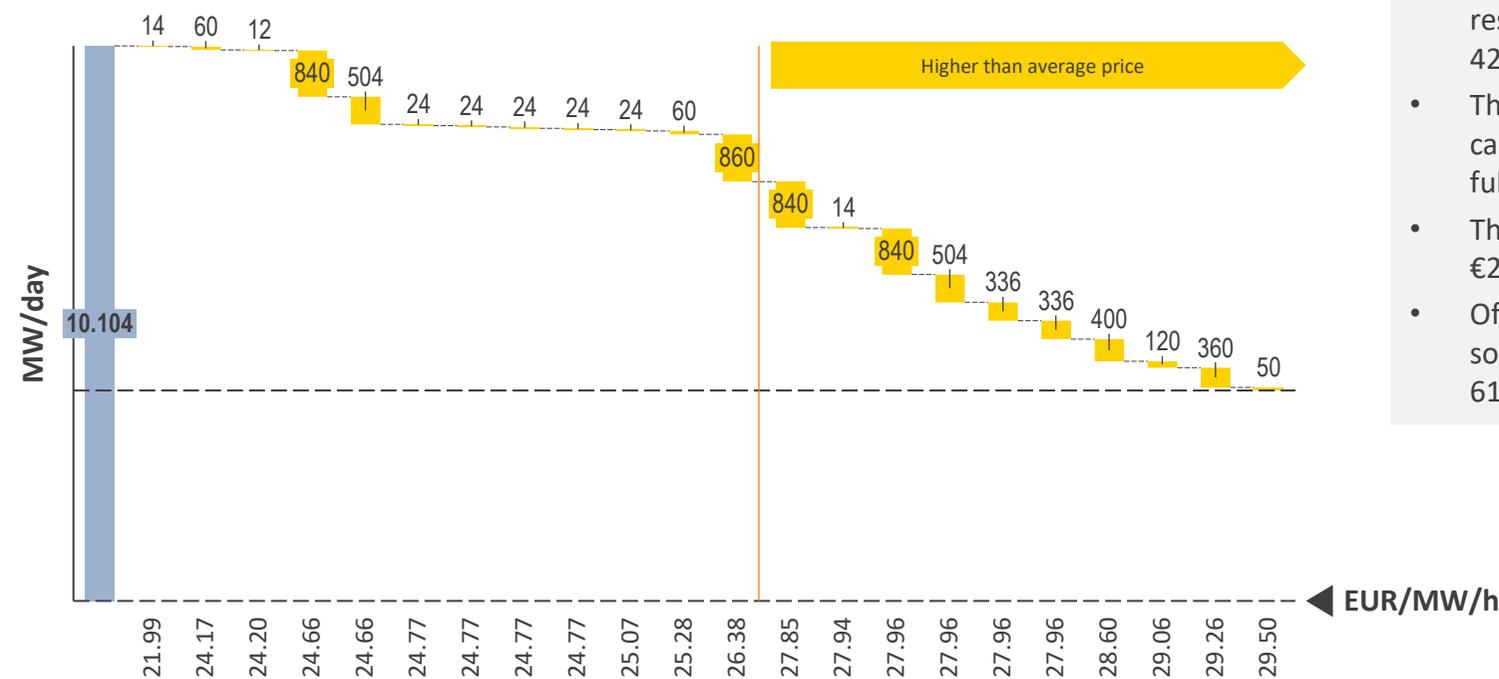
Ukraine is expected to join PICASSO by late 2030

Year	aFRR+, MW/h	aFRR ±, MW/h
2025	579	421
2026	579	421
2027	579	421
2028	579	421
2029	579	421
2030	579	421
2031	579	421
2032	579	421
2033	579	421
2034	779	421
2035	779	421
2040	779	421
2050	779	421
2060	779	421

# LONG TERM A/S SUPPLY RESULTS: FCR SOLD OUT AT €15.13/MW/H, aFRR ± AT €27.24/MW/H



- The daily FCR volume totals 2,376 MW, calculated as 99 MW per hour over 24 hours
- Auction volume: 4 336 200 MW (99 MW x 8 760 h x 5 years)
- The weighted average cleared price stands at €15.13/MW/h
- Of the total capacity, 64% (1,520 MW/day) was sold below the weighted average price, while 36% (856 MW) was sold above it

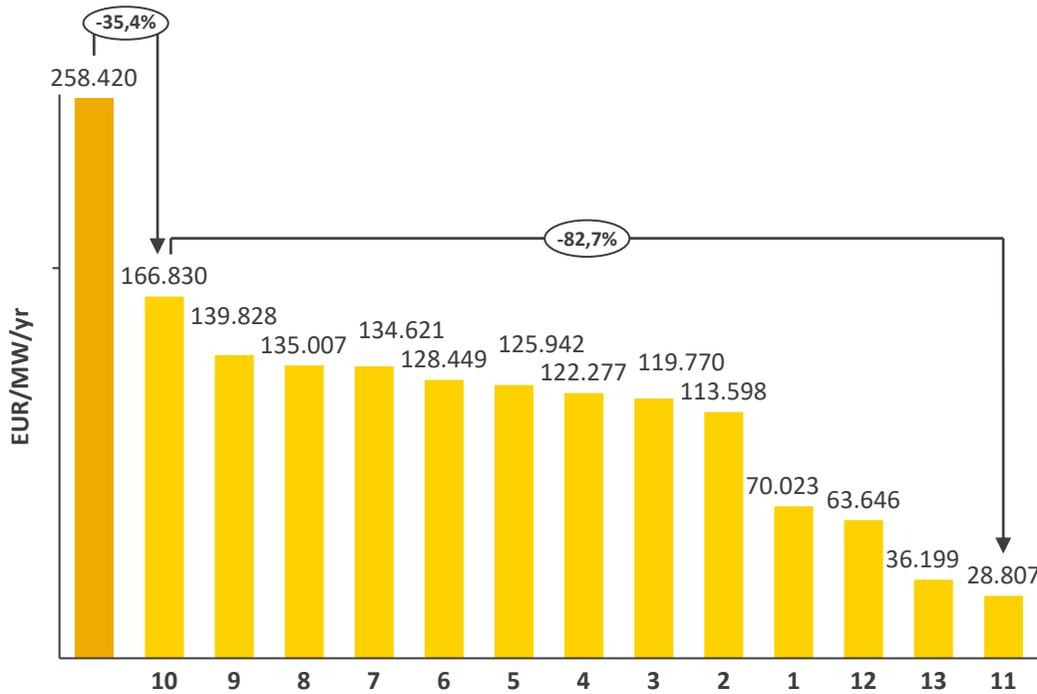


- The daily aFRR± volume for capacity reservation amounts to 10,104 MW, based on 421 MW per hour over 24 hours
- The TSO procured 6,270 MW/day of aFRR± capacity reservation, representing a 62% fulfilment rate
- The weighted average auction cleared price is €27.24/MW/h, reaching 92% of the price cap
- Of the total capacity, 39% (2,470 MW/day) was sold below the weighted average price, while 61% (3,800 MW/day) was sold above it

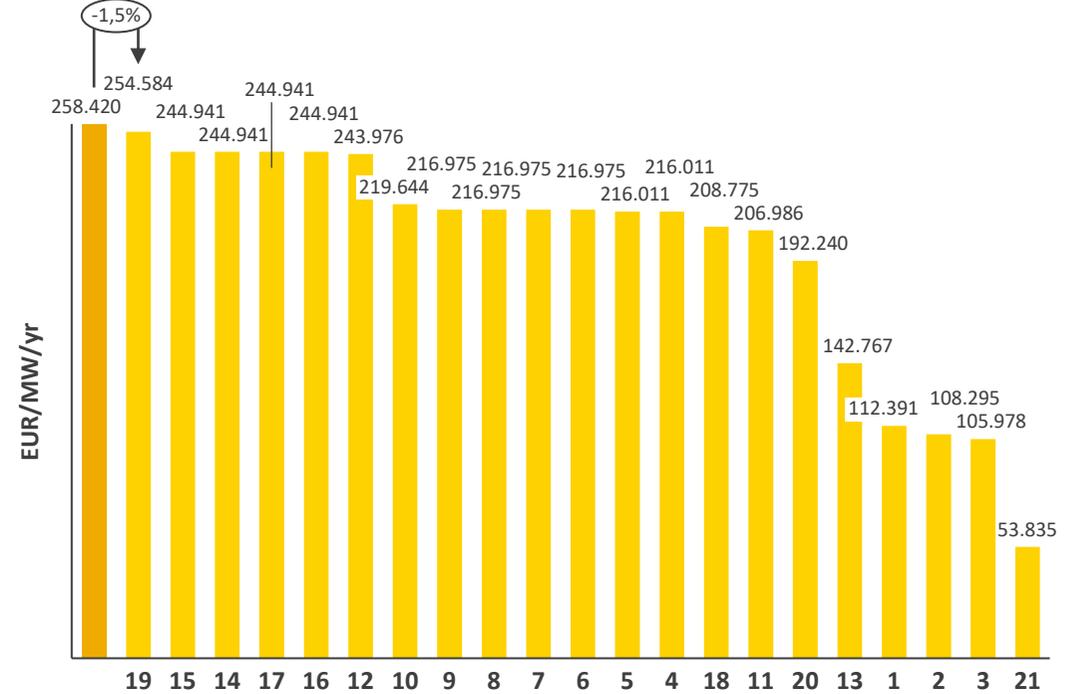
# BEST AND WORST PERFORMER ON FCR AND aFRR AUCTIONS



FCR Capacity Reservation Revenue Analysis, EUR/MW/year



aFRR ± Capacity Reservation Revenue Analysis, EUR/MW/year



- The revenue calculation: (numbers of hours per day sold × nominated price × 24 × 365 × 5 years) / MW sold = EUR/MW/year
- The most successful bidder is #10 with 166.8k EUR/MW/yr
- The second best strategy earned a 139.8k EUR/MW/yr
- The maximum revenue theoretically achieved is 258.4k EUR/MW/yr: 29.50 EUR x 8,760 hrs

- The theoretical maximum revenue for aFRR ± capacity reservation is 258.4k EUR/MW/yr: 29.50 EUR x 8,760 hrs.
- The most successful bidder is #19 254.6k EUR/MW/yr - 98.5% of the maximum possible revenue per MW sold.
- Worst performer is bidder # 21 with 53.8k EUR/MW/yr
- All revenues are for capacity reservation only, no activation of balancing energy upside included
- The Germany 2023 BESS revenue per MW/yr is 177k EUR, UK earned 163k EUR and Texas 151k EUR based on Gore Street Energy Storage Fund (LON:GSF) report

# HOW MUCH BATTERY NEED TO MAKE TO BE AN ATTRACTIVE ASSET? 174 kEUR!



Using Ukraine's bond yield to maturity of 14.45% as the return's benchmark, the target battery revenue in Ukraine is 174 kEUR/MW/yr

Key takeaway
Given the current Ukrainian debt yields <b>14.45%</b> , the required revenue for a BESS project in Ukraine is of 174k EUR/MW/yr

Model Inputs			
Capacity	1	MW	kEUR/MW/year
CapEx	800	kEUR/MW	OpEx as % of CapEx
Lifetime	15	years	CIT
			<b>174</b>
			<b>2%</b>
			<b>18%</b>

Assumptions <sup>1</sup>	Value
Rated power, MW	1.00
Energy @ EOL, MWh	2.00
Augmentation strategy	Overbuild
Technology	LFP
CAPEX, kEUR/kW <sup>2</sup>	800
Useful life, years <sup>3</sup>	15
Opex, % of Capex <sup>4</sup>	2.0
Depreciation	SL, no TV
Revenue stack <sup>5</sup>	A/S: FCR
Senior debt	No
Time to reach COD, years	1

Item	Unit		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<b>CapEx Schedule</b>	%	100%	30%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>CapEx</b>	kEUR	(800)	(240)	(560)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>D&amp;A</b>	kEUR	(800)			(53)	(53)	(53)	(53)	(53)	(53)	(53)	(53)	(53)	(53)	(53)	(53)	(53)	(53)	(53)
<b>Revenue</b>	kEUR	2,603			174	174	174	174	174	174	174	174	174	174	174	174	174	174	174
<b>OpEx (excl D&amp;A)</b>	kEUR	(240)			(16)	(16)	(16)	(16)	(16)	(16)	(16)	(16)	(16)	(16)	(16)	(16)	(16)	(16)	(16)
<b>EBITDA</b>	kEUR	2,363	-	-	158	158	158	158	158	158	158	158	158	158	158	158	158	158	158
<b>EBIT</b>	kEUR	1,563	-	-	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104
<b>CIT</b>	kEUR	(281)	-	-	(19)	(19)	(19)	(19)	(19)	(19)	(19)	(19)	(19)	(19)	(19)	(19)	(19)	(19)	(19)
<b>Net Income</b>	kEUR	1,282	-	-	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
<b>FCFF</b>	kEUR	1,282	(240)	(560)	139	139	139	139	139	139	139	139	139	139	139	139	139	139	139

**IRR(f) 14.43%**

Ukraine's Bonds	Currency	Days	Issue date	Maturity	Ticker
	USD	4172	2024-08-30	2036-02-01	XS2895056526
	End of Month		<b>Feb-36</b>		
	Yield to maturity (%)		<b>14.45</b>		

Ukraine's bond yield is used as the benchmark for the required hurdle rate

Note: 1) All given by design, with the noted exceptions; 2) Aurora / DTEK CAPEX estimation; 3) Max 1 full cycle/day; 4) Benchmark; 5) Frequency and power regulation  
Source: National Bank of Ukraine