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What drives the ETS prices in the post 2020 period?

Presentation by Espen Andreassen, Head of Long-term Reports at Volue Insight,
at REKK Regional Energy Policy Forum, 'The Future of Carbon Pricing'

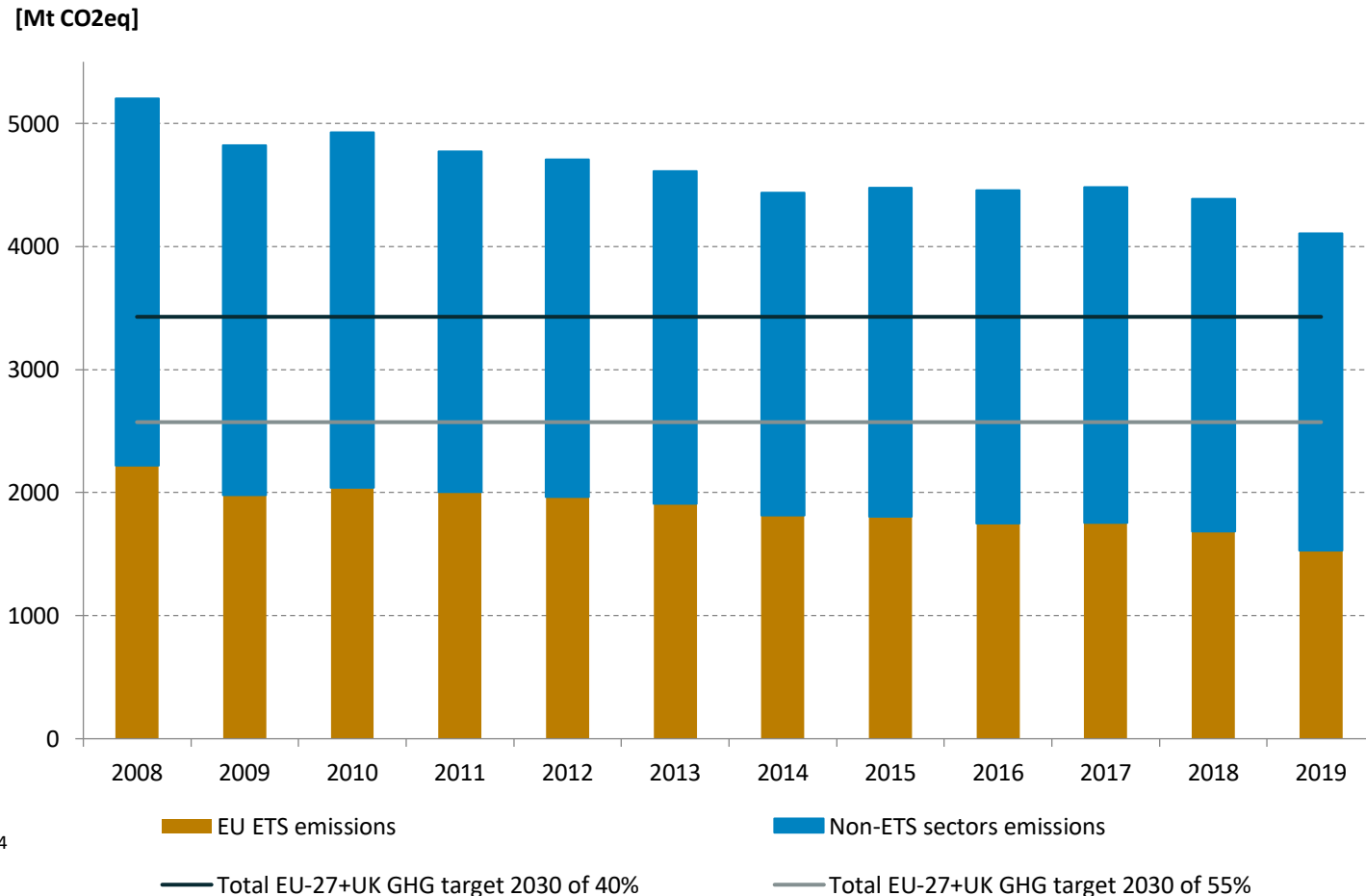
8th of June 2021

Four major price drivers pulling up carbon prices the last couple of quarters

- 55% GHG target agreed in EU divisions, preparations for a 'fit for 55' package in mid July
- Macroeconomic optimism looming
- Strong purchasing from speculators, and possibly compliance purchasing
- Rising hard coal/lignite to gas fuel switching prices

The 55% GHG emission reduction target sets the stage for high EUA prices

Historic GHG emissions EU-27+UK development vs target



- Actual 2019 GHG emission reduction development for EU-27+UK shows that only 26% has been obtained so far
- A 55% target could require 1800 Mt of additional emission reductions

Macroeconomic indicators have proved important the last months

EUA vs Oil Brent



- Oil has recovered from its low levels in May

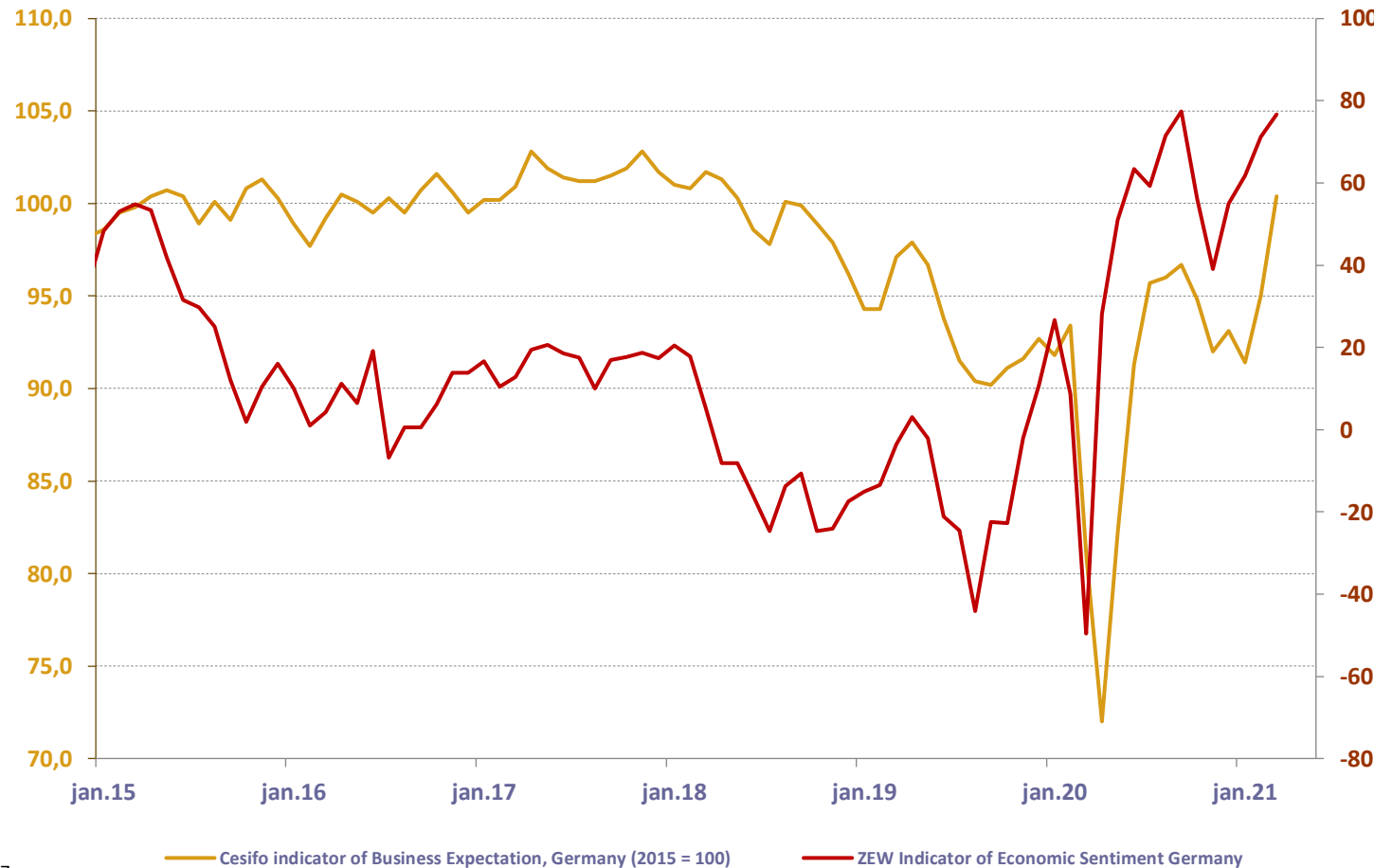
Macroeconomic indicators have proved important the last months



- Stock market indices have risen tremendously over the last quarters

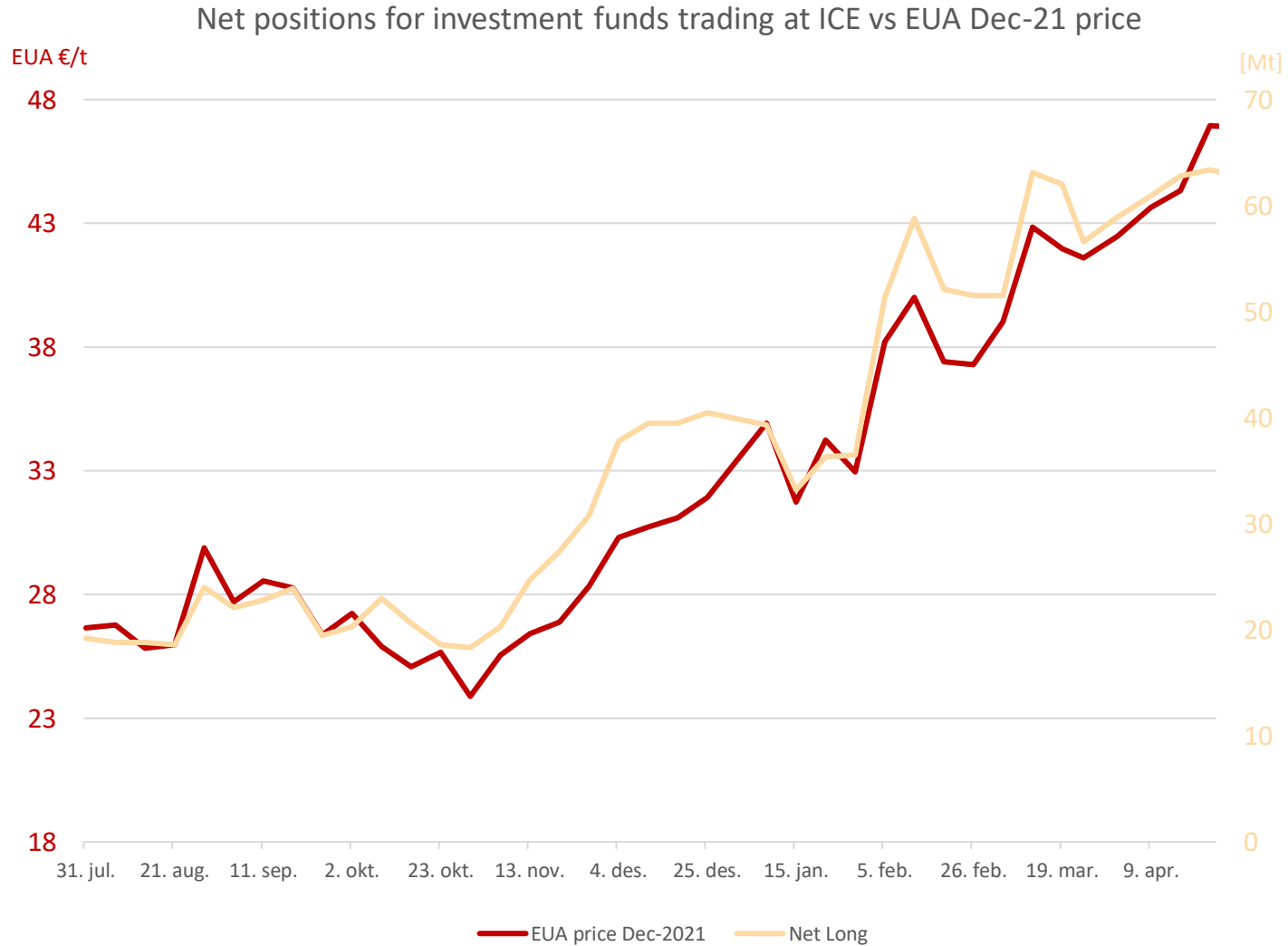
Macroeconomic optimism is dominating

Indicators of German business outlooks, six months ahead



- German business sentiment indicators are proving optimistic
- Indices of new orders are rising

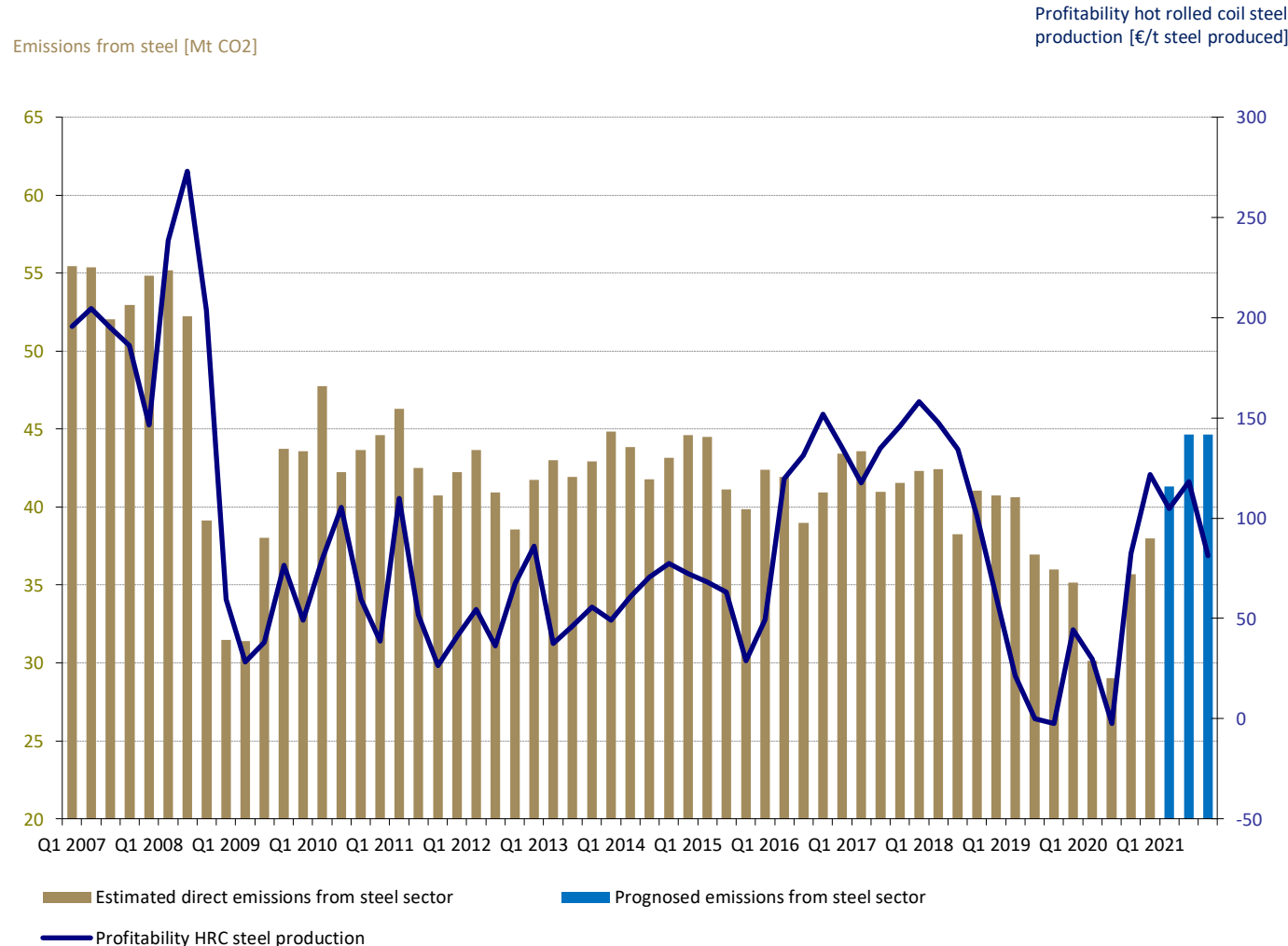
Speculator driven purchasing



- Net long position of EUA futures for investment funds, at exchange ICE, has risen strongly since June 2020

Industrial development is recovering, but at a modest pace

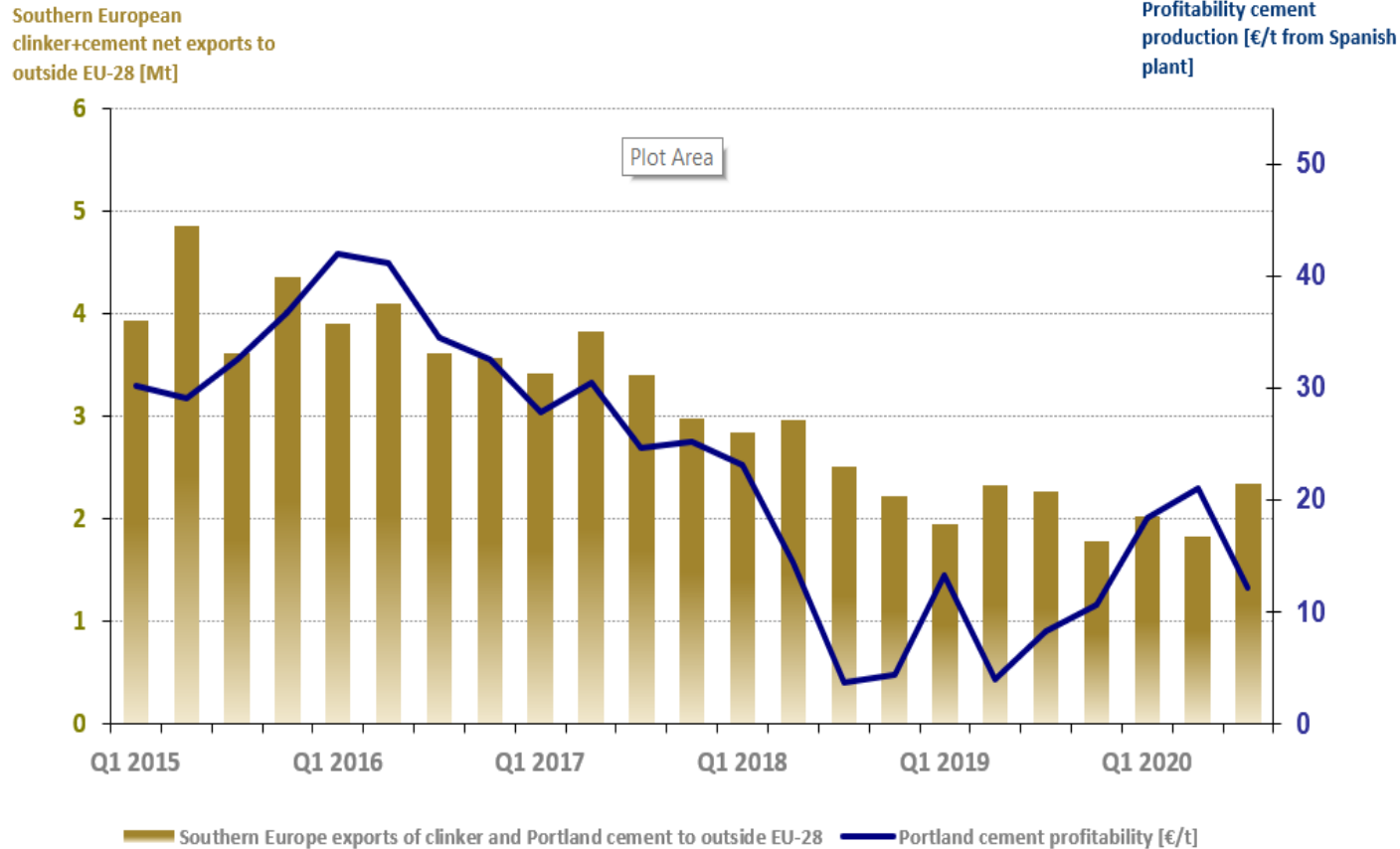
Calculated profitability for hot rolled coil refined steel product vs direct emissions from crude steel production



- Steel production has recovered, but is still below 2019 levels
- Profit margins are decent, but this is probably mostly determined by global steel market developments

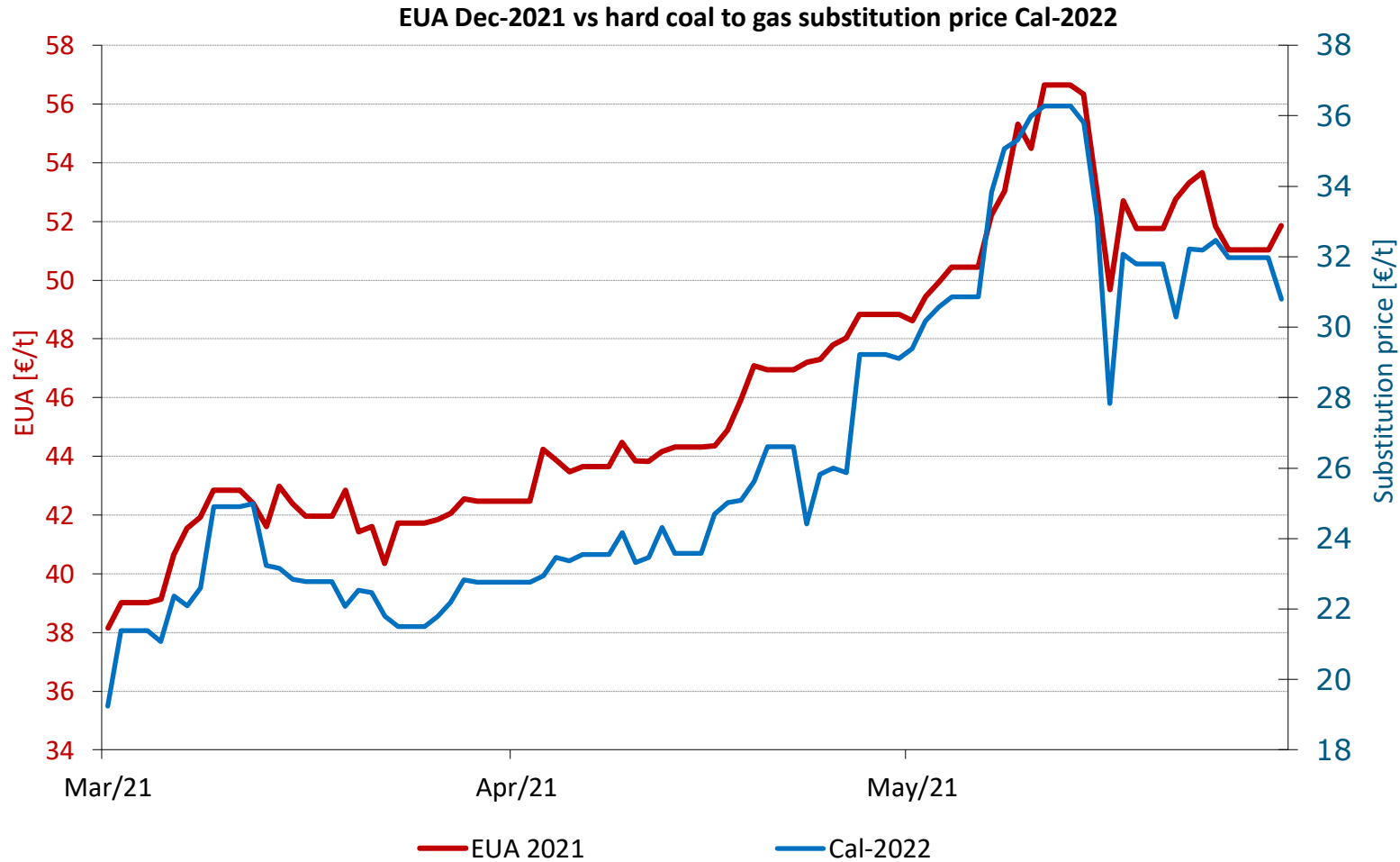
An example of industrial vulnerability to high carbon costs

Profitability of Portland cement manufacturing vs Southern European exports of Portland cement to outside EU-28, on a quarterly basis



- Southern Europe (ES+PT+IT+GR) had back in 2015 net exports of Portland Cement+Clinker of 17 Mt
- This fell down to only 8 Mt in 2019 (preliminary figures point at the same level for 2020)

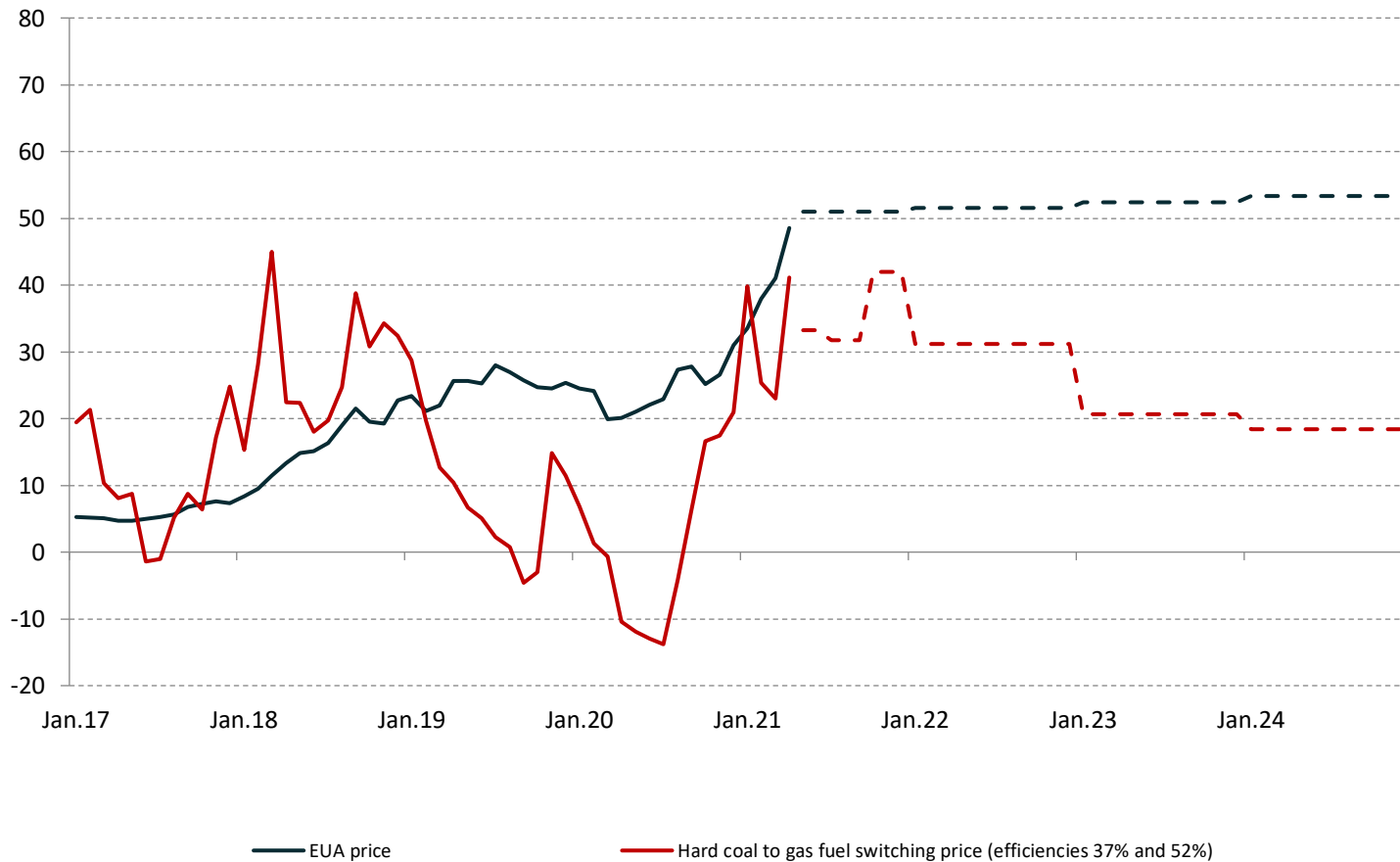
2022 hard coal to gas fuel switching prices have risen lately, possibly affecting carbon prices



- Hard coal to gas fuel switching prices may have contributed to pull up carbon prices

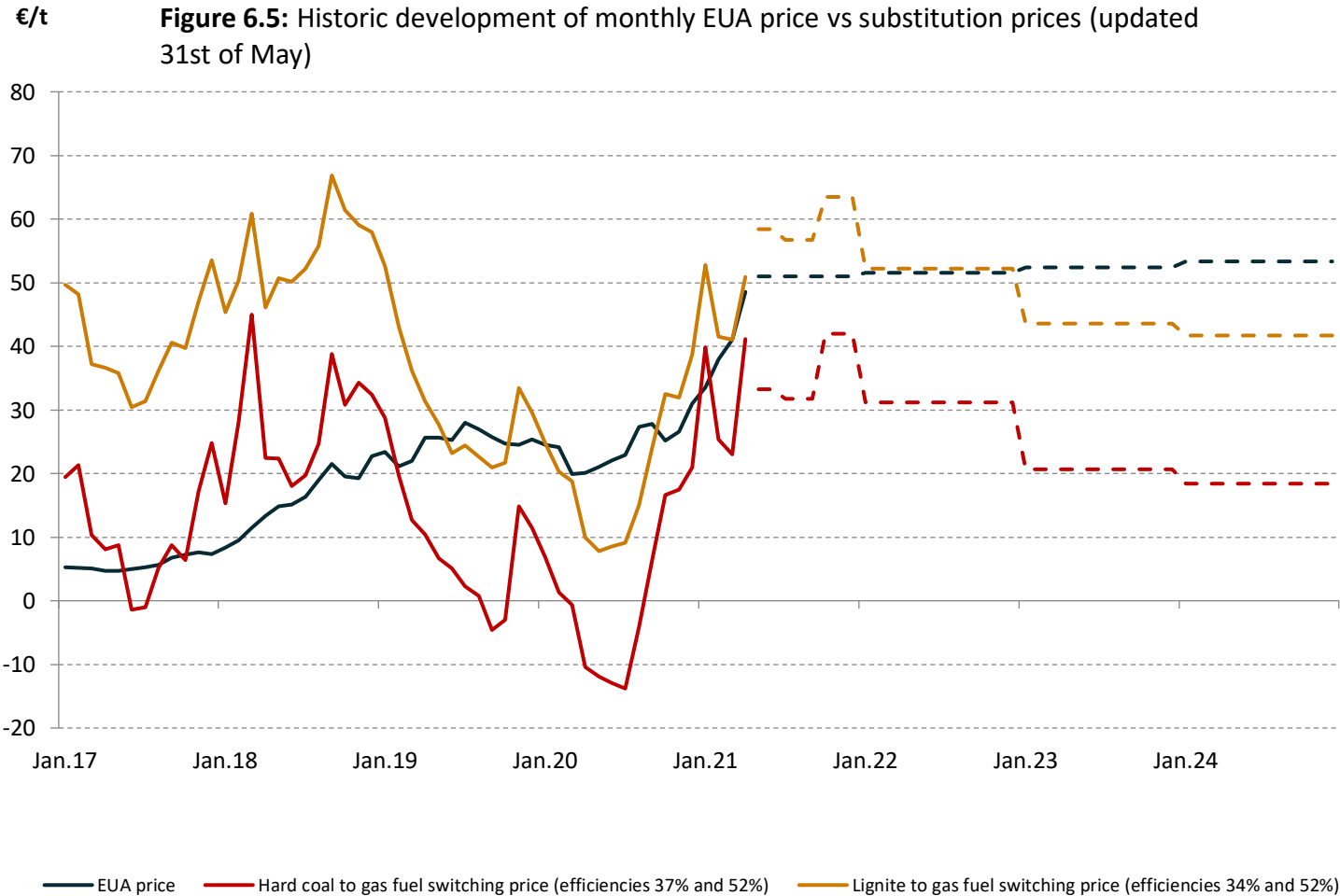
Hard coal and lignite fired power generation to fall strongly

€/t **Figure 6.5:** Historic development of monthly EUA price vs substitution prices (updated 31st of May)



- Weak profitability harms hard coal/lignite shares
- Hard coal and lignite use is becoming frequently less in power systems with flexibility

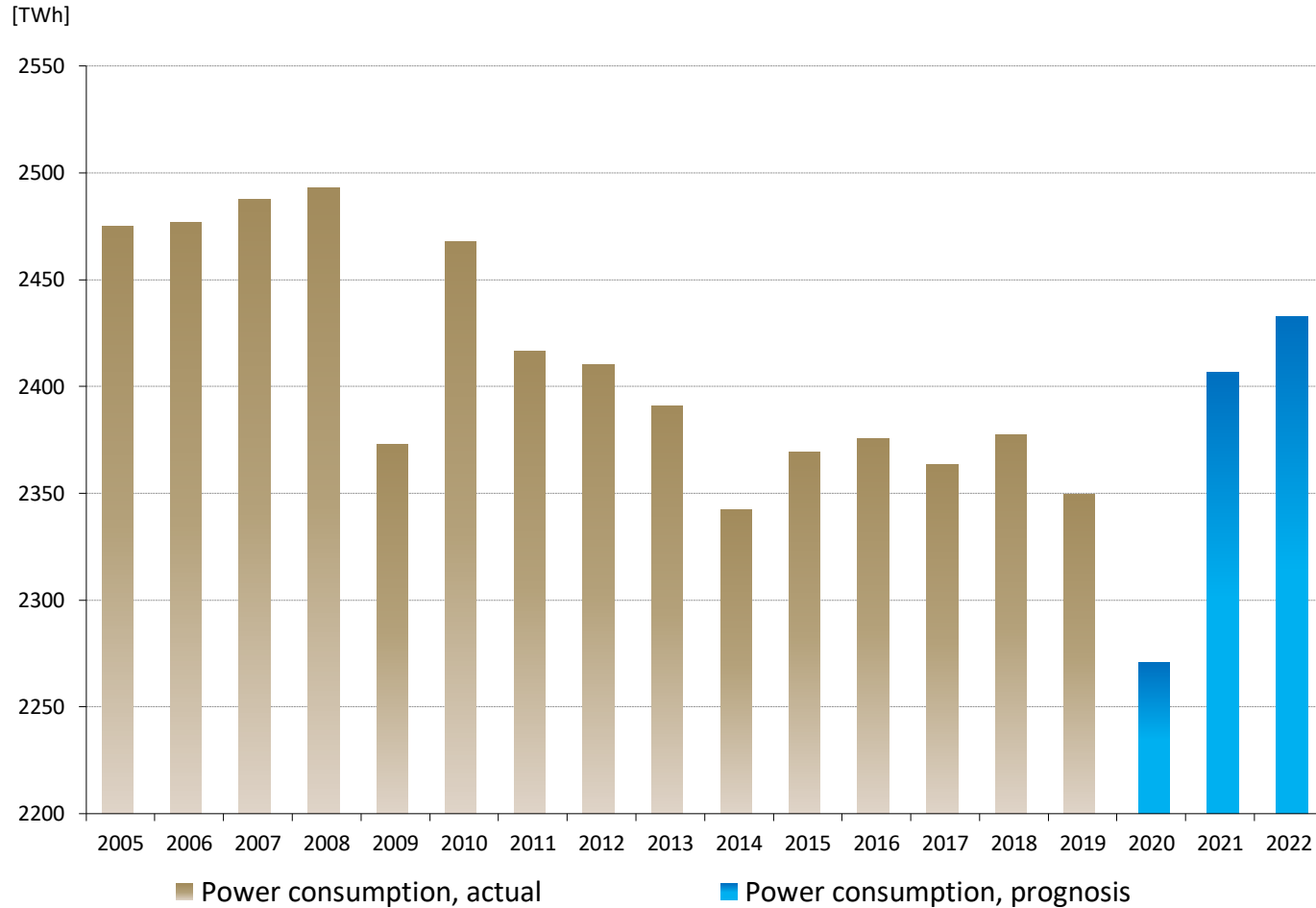
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Power consumption to recover

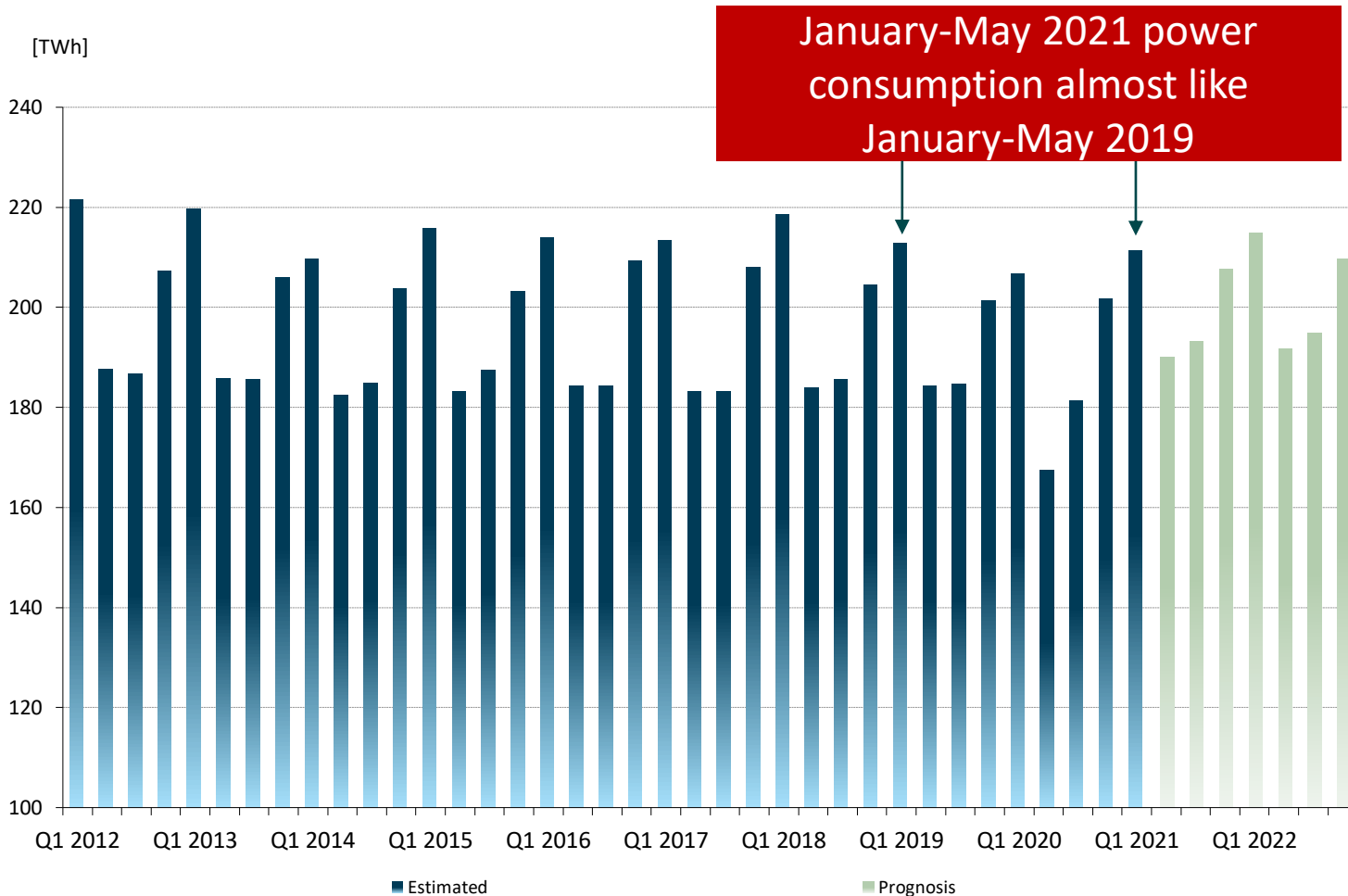
Power consumption, ten largest EU ETS countries



- We expect power consumption to increase, but in a modest manner

Power and heat emissions: Power consumption to recover

Figure 4.4: Power consumption, ten largest EU ETS countries

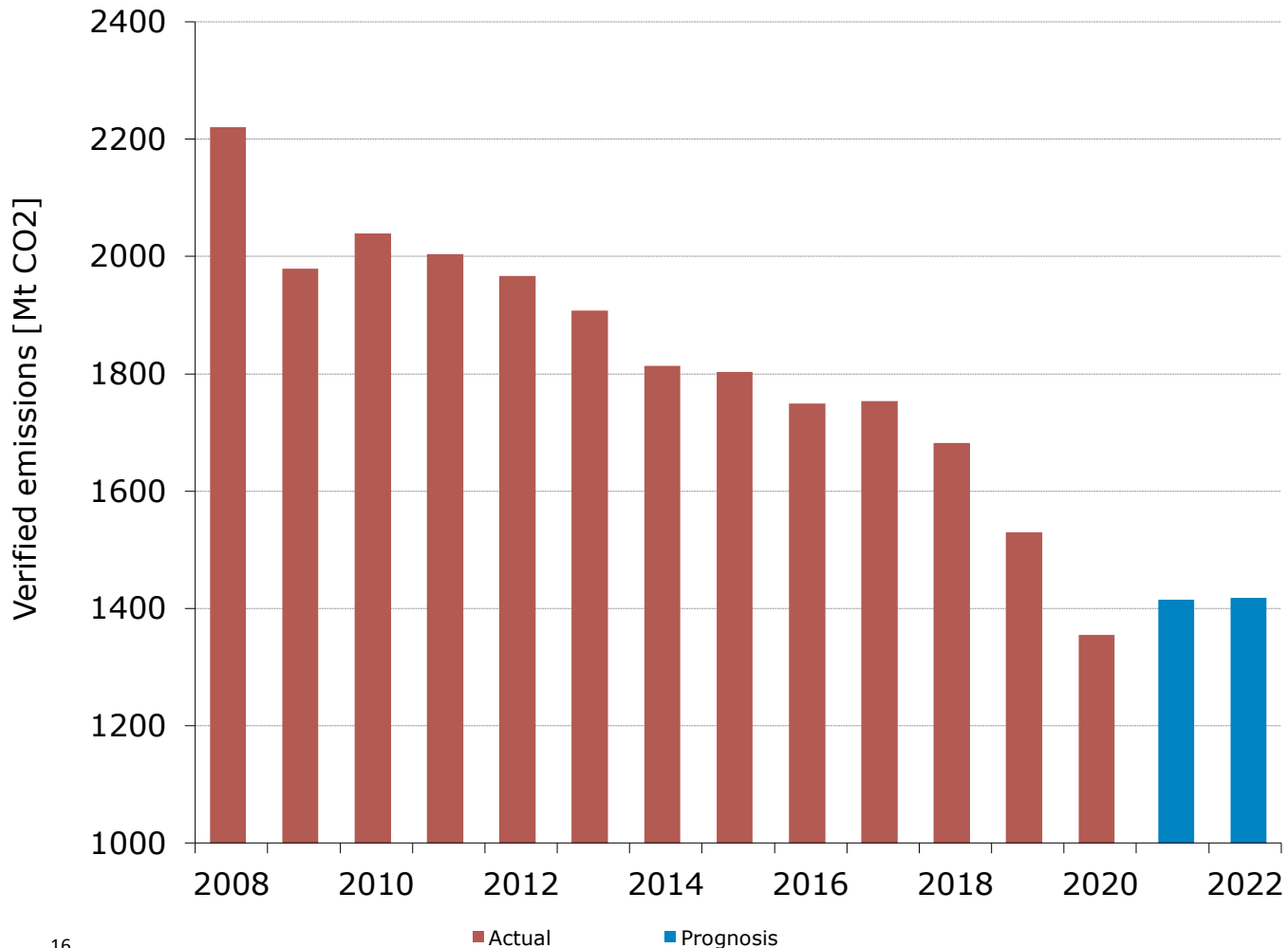


January-May 2021 power consumption almost like January-May 2019

- After strong power consumption decreases caused by the corona crisis, power demand has recaptured its lost ground in Q4 2020
- If adjusting for France, January-May power consumption this year is at same level as same period in 2019.

Emissions from EU27+UK are set for a marginal increase

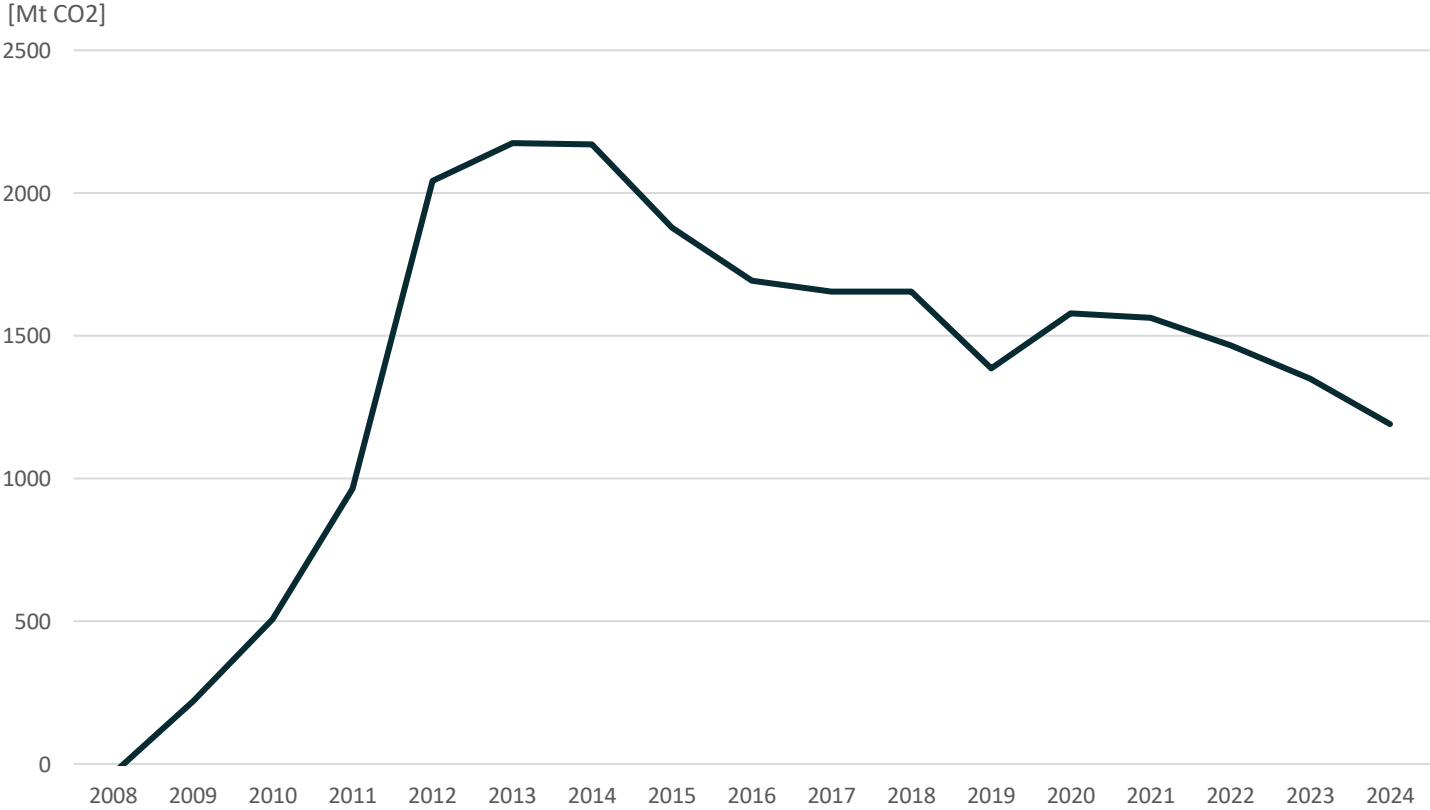
Verified emissions for EU27+UK stationary installations



- Despite strong inflow of renewables in 2021 and 2022, we forecast emissions to be slightly higher than 2020 level

The surplus of EUAs will remain for a while

Forecast of long term carbon credit balance for EU27+UK



- Accumulated market surplus after year 2020 at 1578 Mt CO2, announced by the European Commission in mid of May
- The surplus will last for a while

Important carbon price drivers beyond 2020

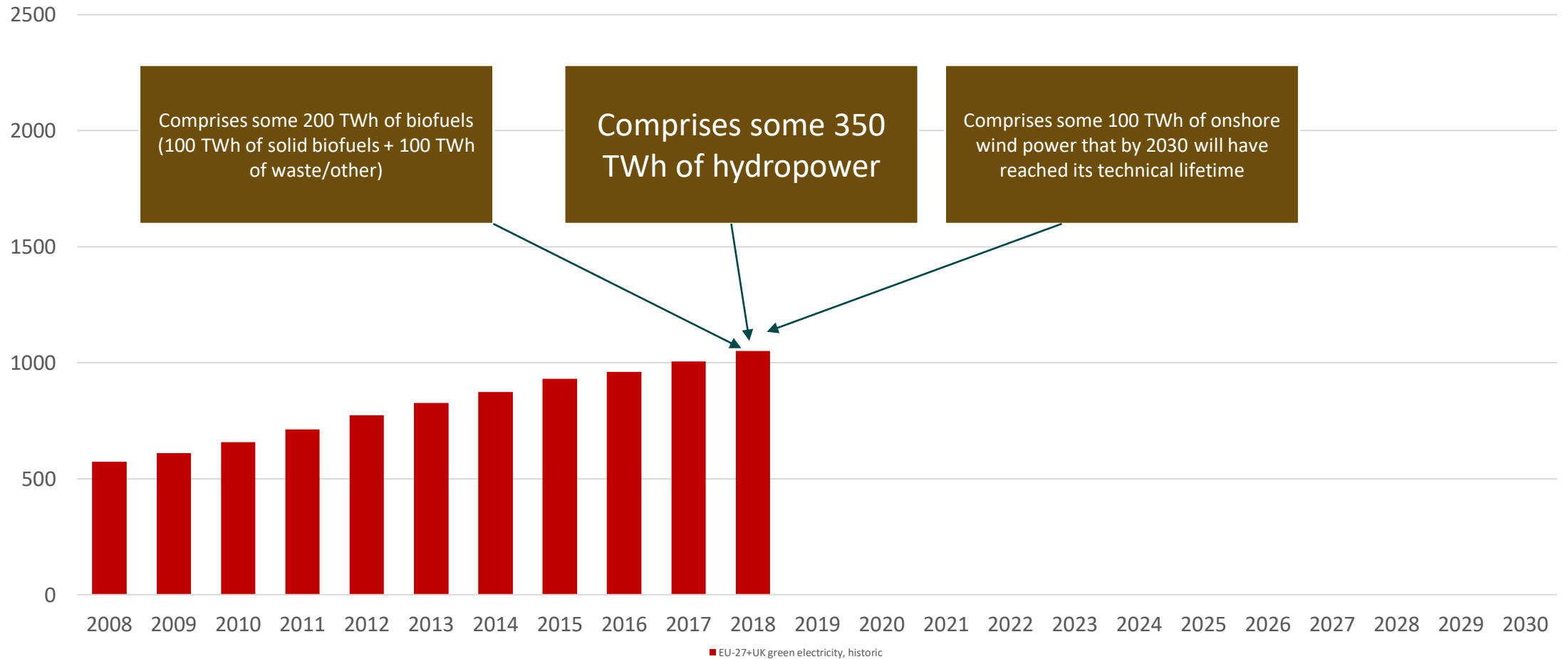
- Macroeconomic indicators and industrial performance; with CBAM as an important uncertainty
- Policy developments of promoting hydrogen, heat pumps and EVs
- SRMCs for hard coal and lignite will prove gradually less important; gas prices will remain important, much due to the competition against renewables
- Renewables coming into operation; technology costs

We are bearish for both the medium and the long term

- We consider the carbon price response to gas prices exaggerated, given tiny price-dependent solid fuels to gas fuel switching potential in power generation
- The surplus of EUAs will remain high for some years, and may again get market focus, affecting the medium term carbon prices
- Awareness of the rather weak development in industrial output may not have surfaced sufficiently yet; this will soon be digested (affecting the medium term). We expect industrial output for various reasons to turn out weak over the long term, expecting that current market carbon prices of approx 50 €/t will enforce significant emission abatement
- *Based on the central condition that EU member states achieve ambitious renewable electricity targets (and conduct strong efforts in green hydrogen promotion), we expect a significantly lower long term EUA price to balance long term available supply with demand than current market prices*

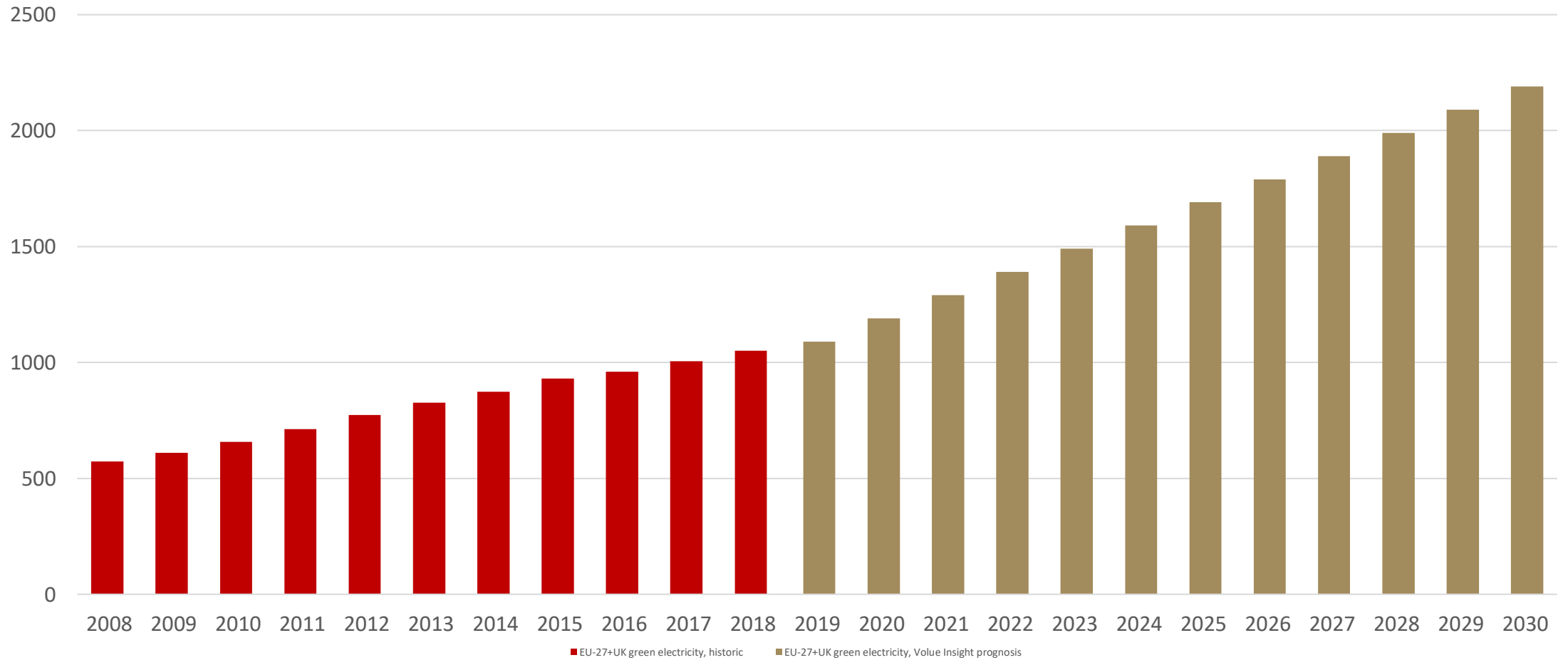
Renewable electricity growth over 2008-2030

Development of historic and expected renewables in EU-27+UK [TWh]



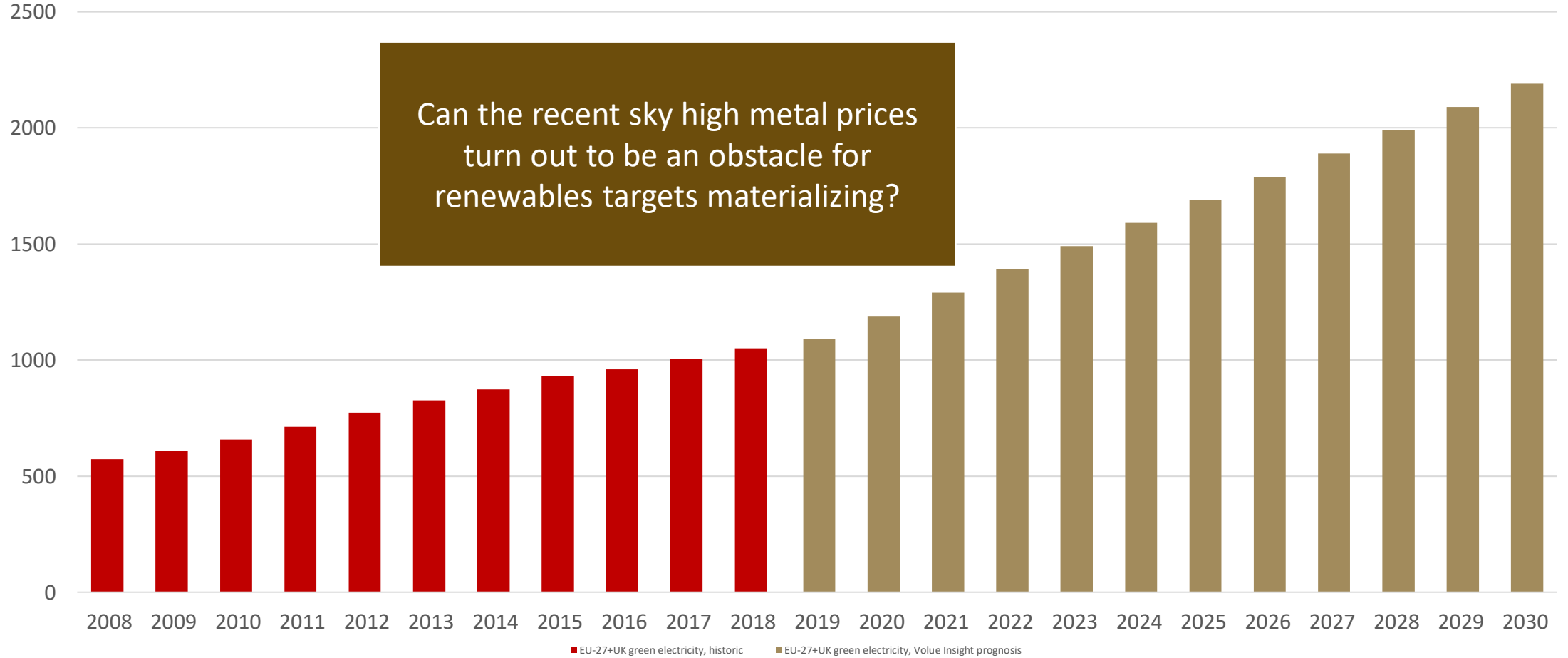
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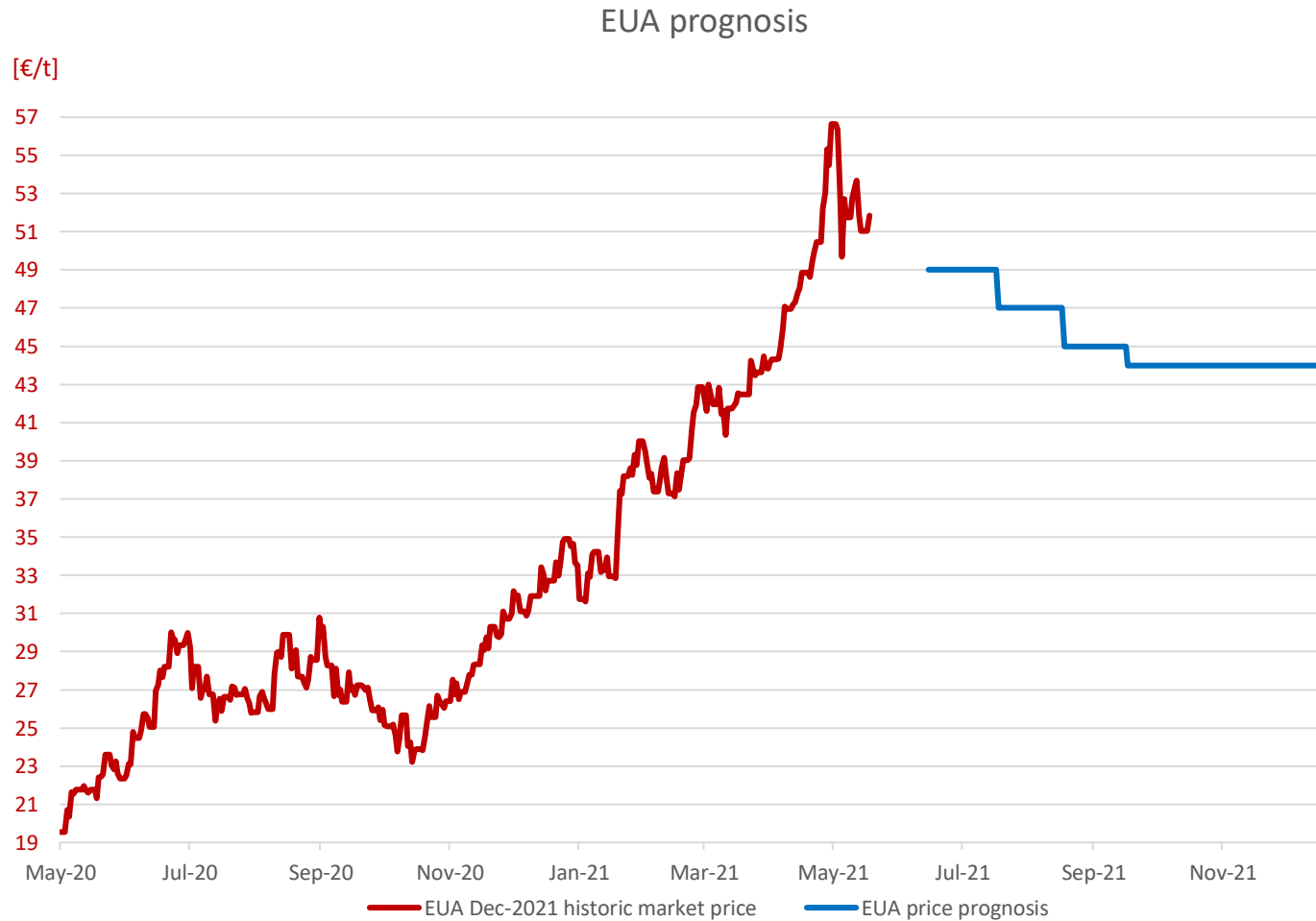


Renewable electricity growth over 2008-2030

Development of historic and expected renewables in EU-27+UK [TWh]



EUA price forecast



- We expect EUA prices at 49 €/t on a four weeks horizon
- We expect EUA prices at 44 €/t by December
- Long term EUA price (2023-2030) in our previous Long Term report from March was at 35 €/t, expecting this average price to balance long term available supply with demand

Thank you!

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