



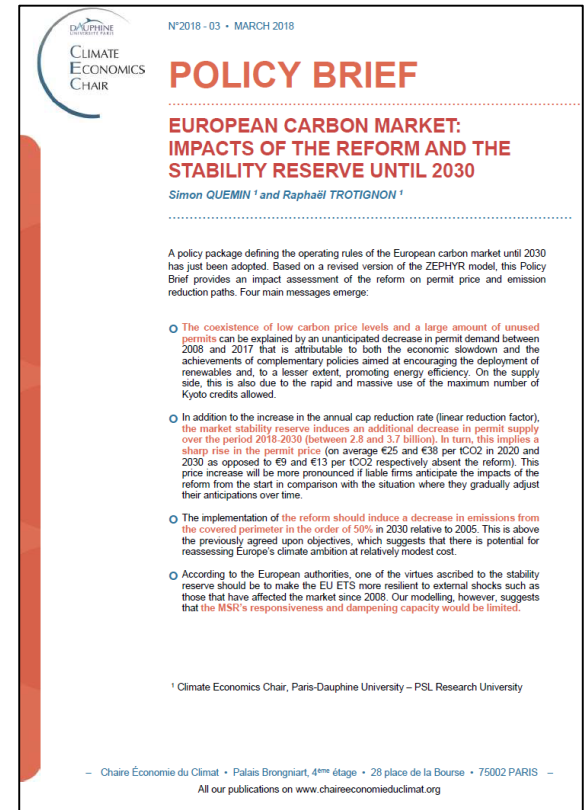
The ETS Post Reform: Impacts of the adopted changes until 2030

CEEM Seminar on EU Electricity and Carbon Markets
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Objectives of our study (from March 2018)

- Quantify the reduction of supply induced by the reform and the MSR, and the corresponding impacts on price and emissions trajectories
- Testing the stabilizing capacity of the MSR in two scenarios of demand shock similar to those encountered since 2008
- Note: The study was done before the adoption of the new 32% target for renewables... (but we are in the process of publishing an update)

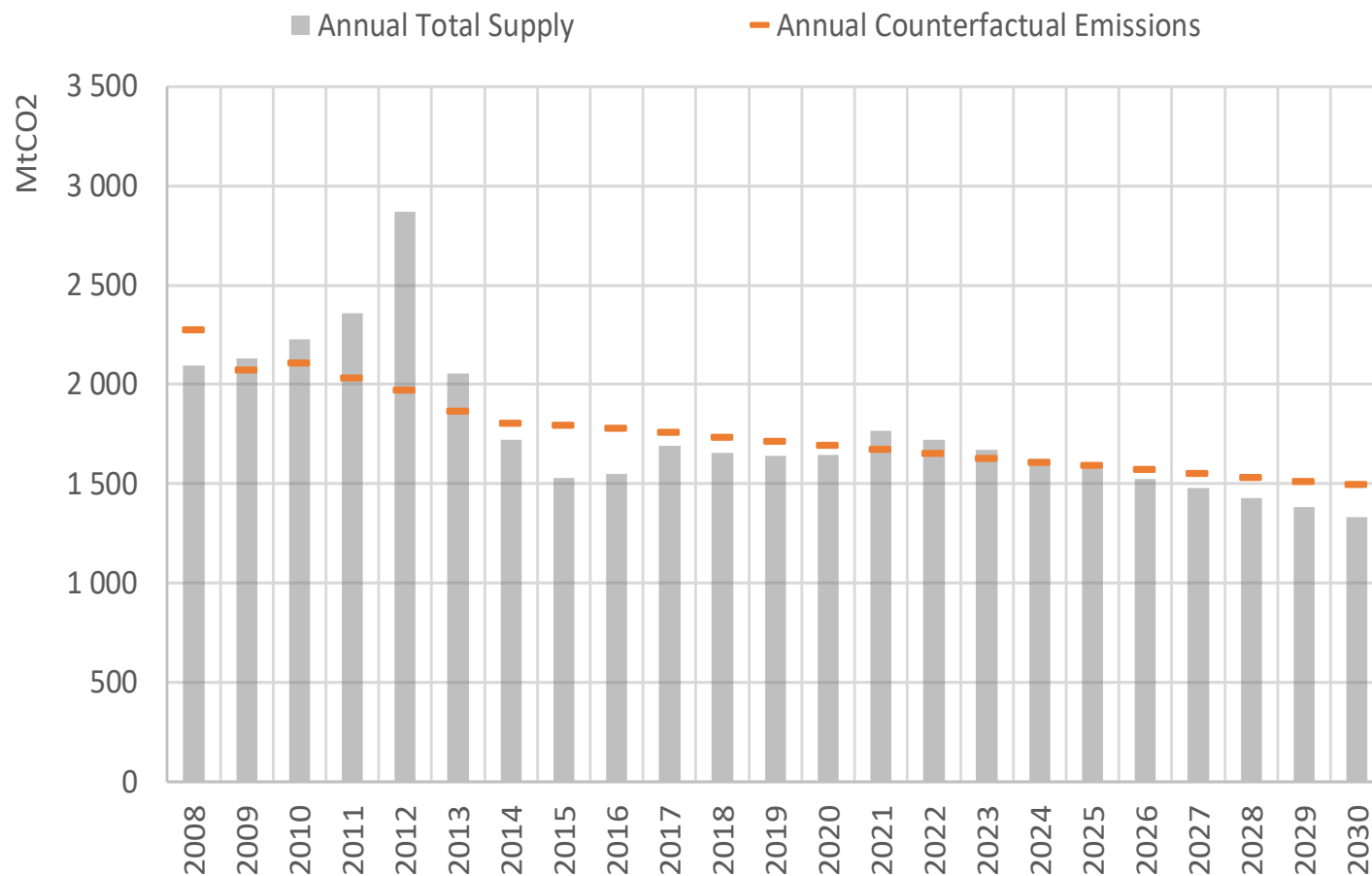


<https://www.chaireeconomieduclimat.org/en/publications-en/eu-carbon-market-reform-impacts-stability-reserve/>

The Zephyr model

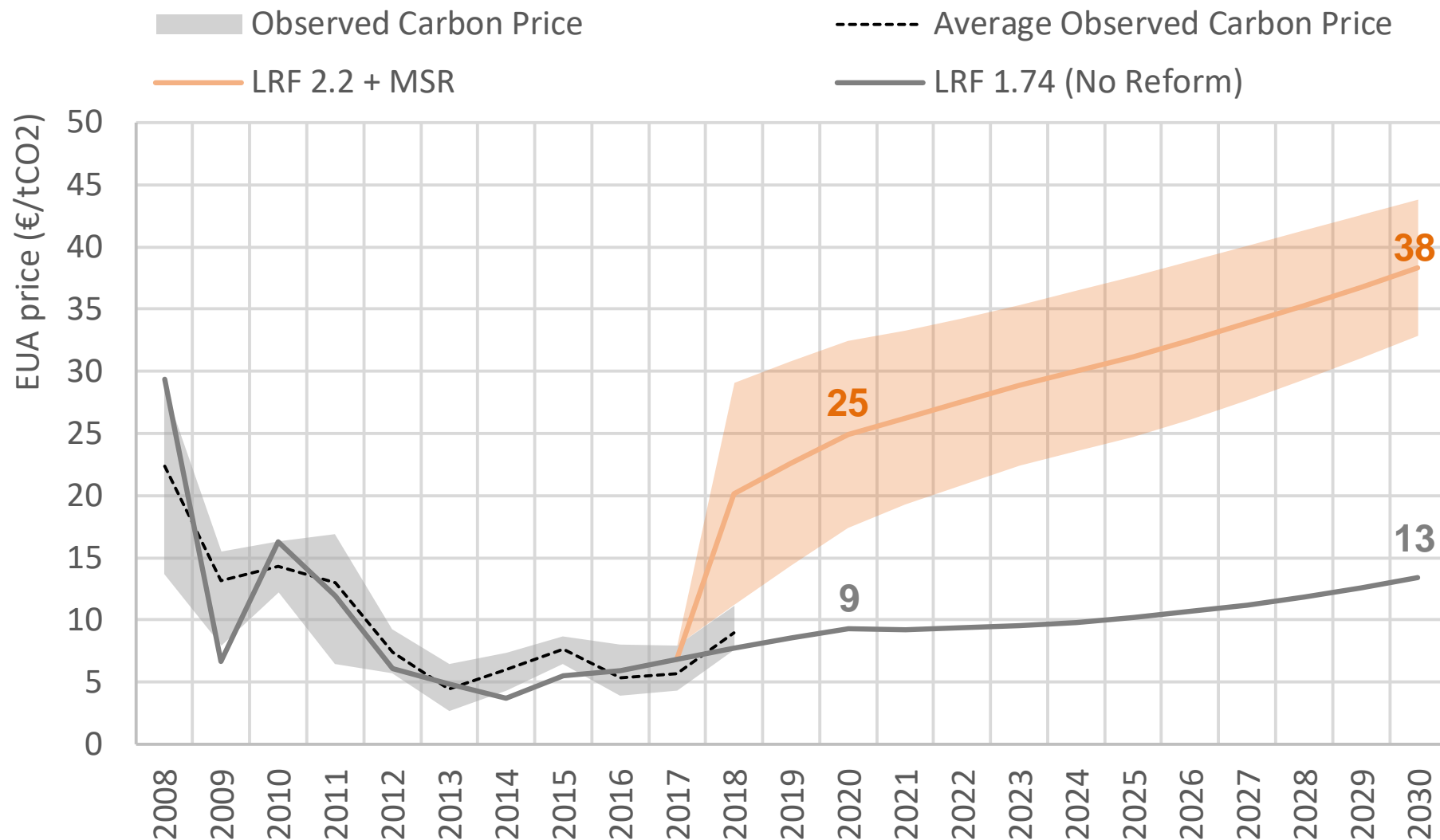
- Simulation model, on an annual basis from 2008 to 2050
- Representation of supply and demand
 - Demand : evolution of counterfactual emissions depending on observed and projected industrial production, renewables, EE
 - Supply :
 - Ex-post : observed free allocation, auctions and offsets
 - Ex ante : as written in adopted texts
 - Implementation of the reinforced « *Market Stability Reserve* » (MSR)
- Compliance costs minimization over a time horizon, revised every year as anticipations (may) change
- Representation of participants anticipations over different horizons
 - Compliance in the current year (« physical » supply-demand equilibrium)
 - Hedging (supply-demand equilibrium over three years)
 - Long term anticipation (supply-demand equilibrium over 15 years)

Annual supply and counterfactual emissions



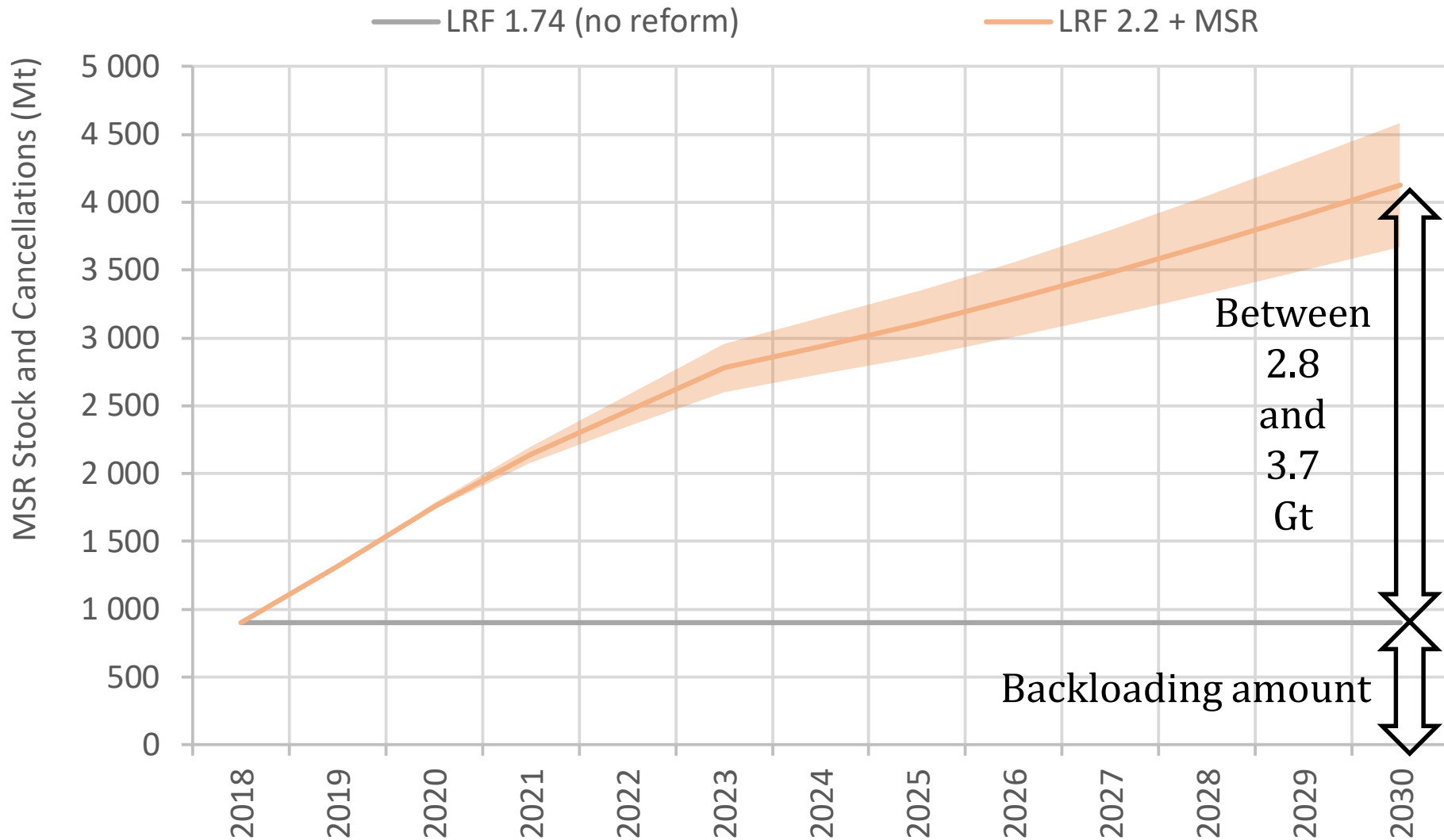
- Given « surplus » allowances already in the market, one needs to anticipate a shortage after 2030 to have a non-zero price today
- The effect of the new LRF and of the MSR is to create this expected scarcity, inducing a higher price equilibrium

Impacts of LRF 2.2 and MSR on the CO₂ price

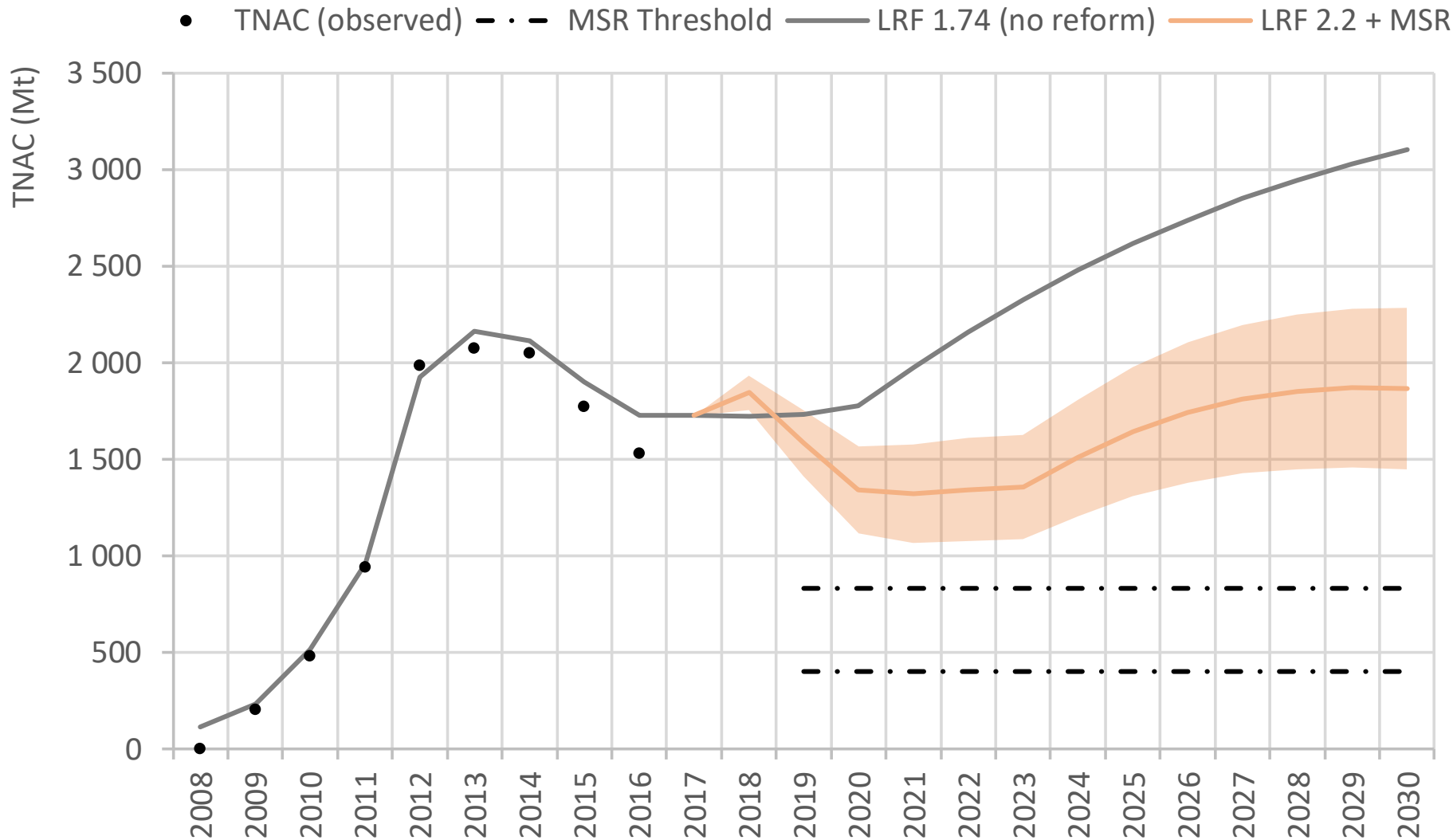


- Emissions decrease by 50% in 2030 compared to 2005

MSR stock and cancellations



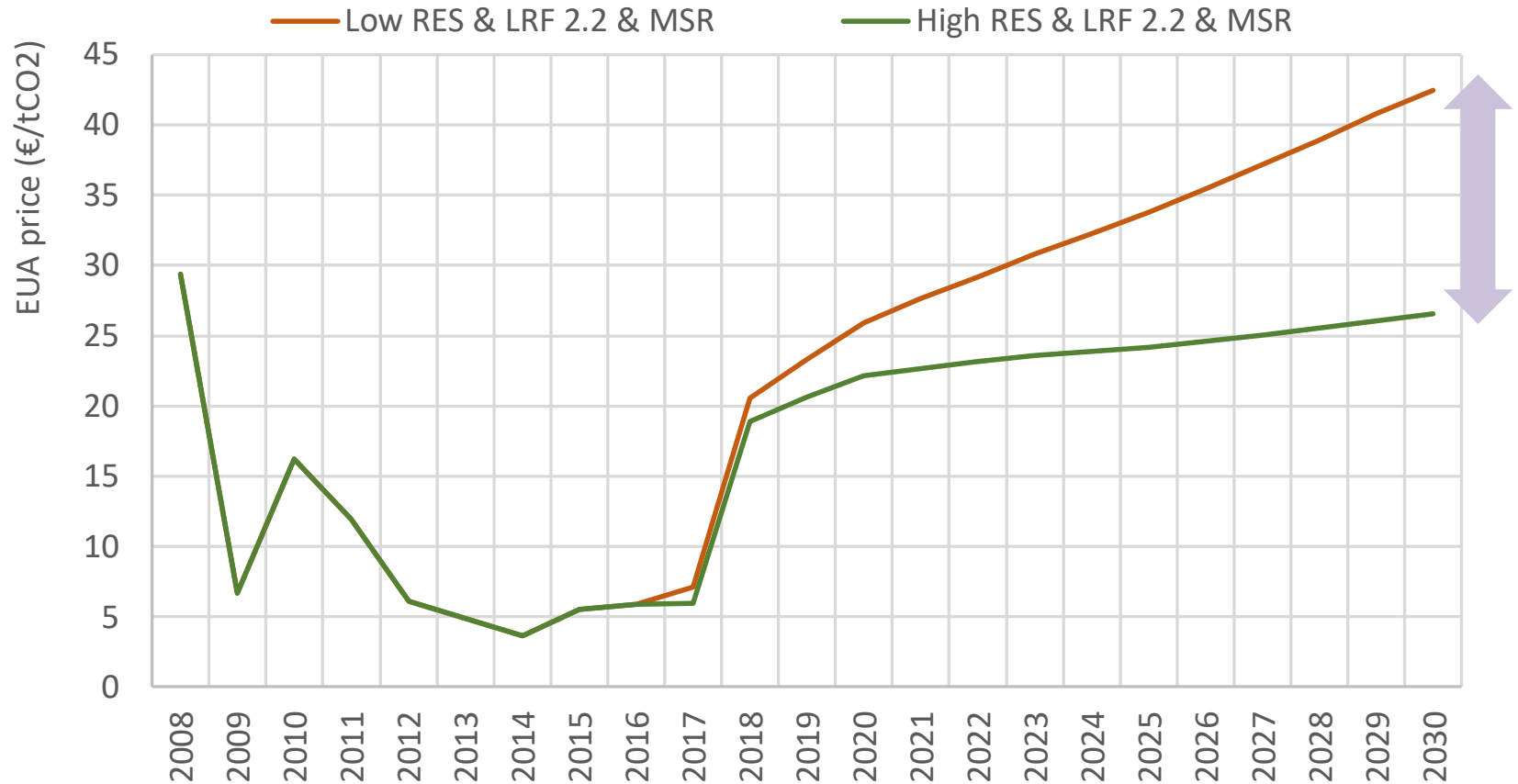
The effect of LRF 2.2 and MSR on « surplus »



The effect of LRF 2.2 and MSR

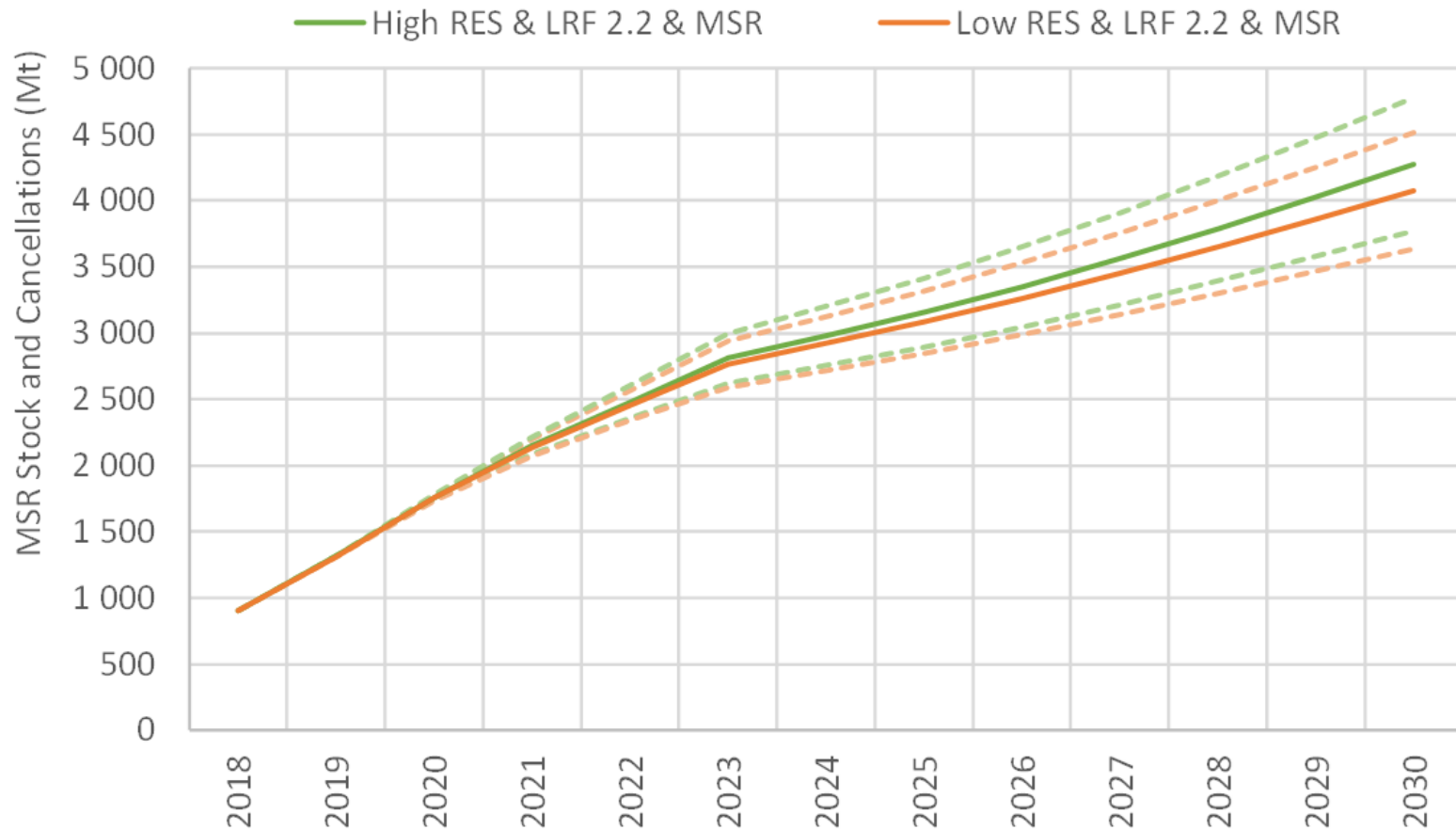
- Without any unexpected shocks and all things remaining constant, **it seems that the adopted reforms are sufficient to put the price back on a 25-40 €/t range up to 2030**
- **But** the main lesson from the EU ETS past is that **there will be unexpected shocks that will disrupt the market in the future**. The EC seems to think that the « stability » reserve would be able to deal with such future disruptions
- We tried to test with our model **two kinds of shocks similar to those encountered by the market since 2008**
 - A higher/lower share of RES impacting emissions independently of the carbon price
 - A economic crisis similar to that of 2008 affecting growth and industrial production over a number of years

Testing the MSR stabilizing capacity (1/2)



- In the presence of the MSR, two different renewables development scenarios give two different carbon price outcomes
- It means that the MSR is not able to « neutralize » this kind of external shock (whether it might be desirable or not)

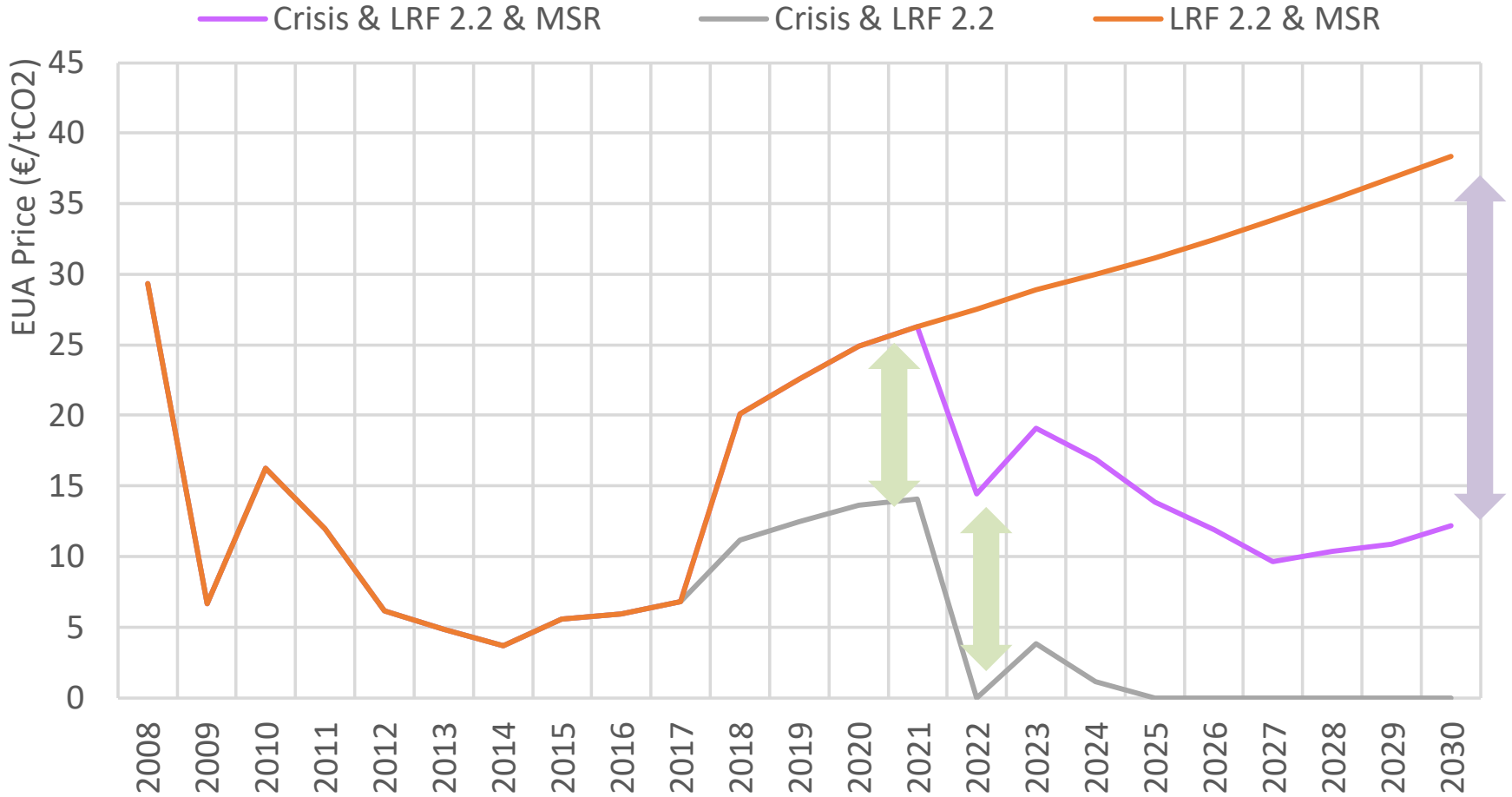
MSR stock and cancellations



- In the presence of the MSR, two different renewables development scenarios give almost the same cancellation amounts
- It means that the MSR is not able to « neutralize » this kind of external shock (whether it might be desirable or not)

Testing the MSR stabilizing capacity (2/2)

Replicating the 2008 crisis in 2022...



Conclusion

- Up to 2030 and even more up to 2050, **the market will have to deal with new disruptions** such as policy interactions, economic cycles... Some future adjustment of the supply (down, or maybe up) will seem desirable/needed
- Contrary to what its name implies, the market « stability » reserve **does not stabilize the market**
- If one wants to introduce a « price stabilizer », then the right way to do it would be to have a **uniform price floor for all sectors and all countries** (as is the case for example in the US)
 - The option of having a **partial price floor** on some countries/sectors instead of entire ETS perimeter **seems like an additional destabilizing factor**. The kind of factor the MSR will not be able to deal with
- Even with a uniform ETS price floor (and ceiling), the **temptation/necessity to « reform »** the price levels over time would still exist



Thank you for your attention

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