

# **Impacts of EU ETS reform and the stability reserve until 2030**

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ERCST meeting on Impacts of the new CEP on EU ETS and MSR  
October 12, 2018

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# Objectives of our study (from March 2018)

- Quantify the reduction of supply induced by the reform and 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)

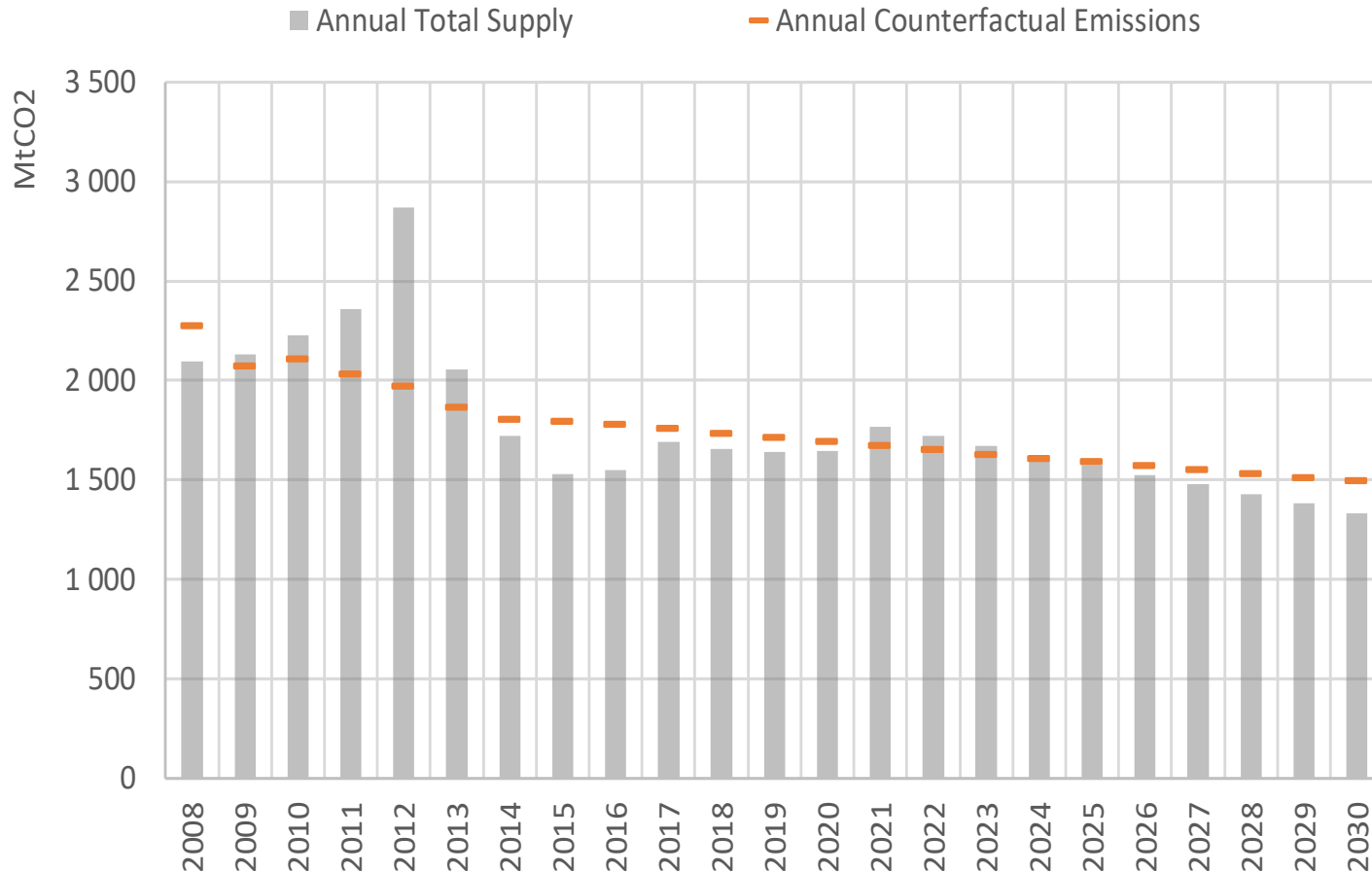


<https://www.chaireeconomieducimat.org/en/publications-en/eu-carbon-market-reform-impacts-stability-reserve/>

# The Zephyr model

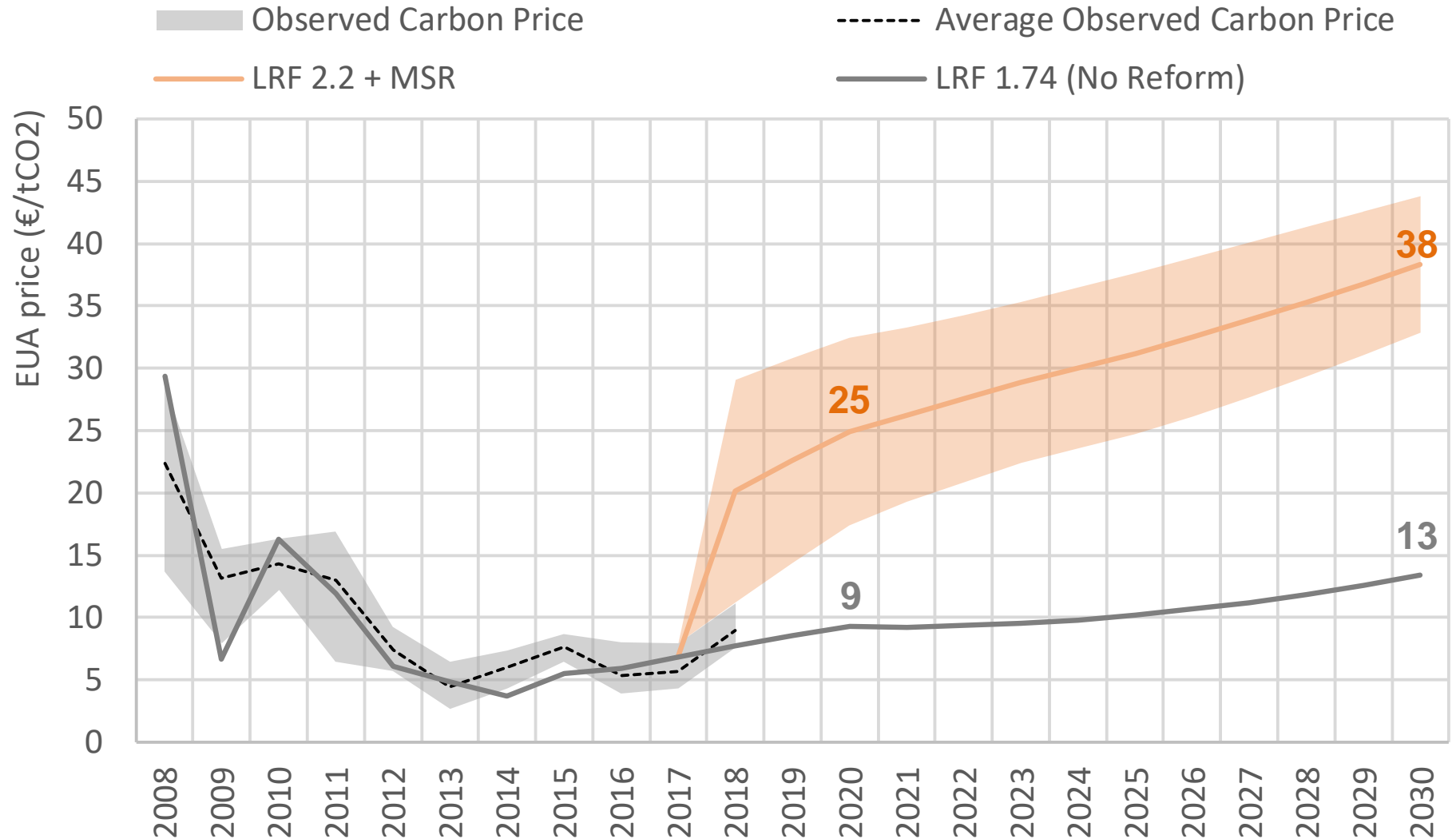
- Simulation model, on an annual basis from 2008 to 2050
- Representation of supply and demand
  - Demand : evolution of counterfactual emissions depending on observed and projected industrial production, renewables, EE
  - Supply :
    - Ex-post : observed free allocation, auctions and offsets
    - 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



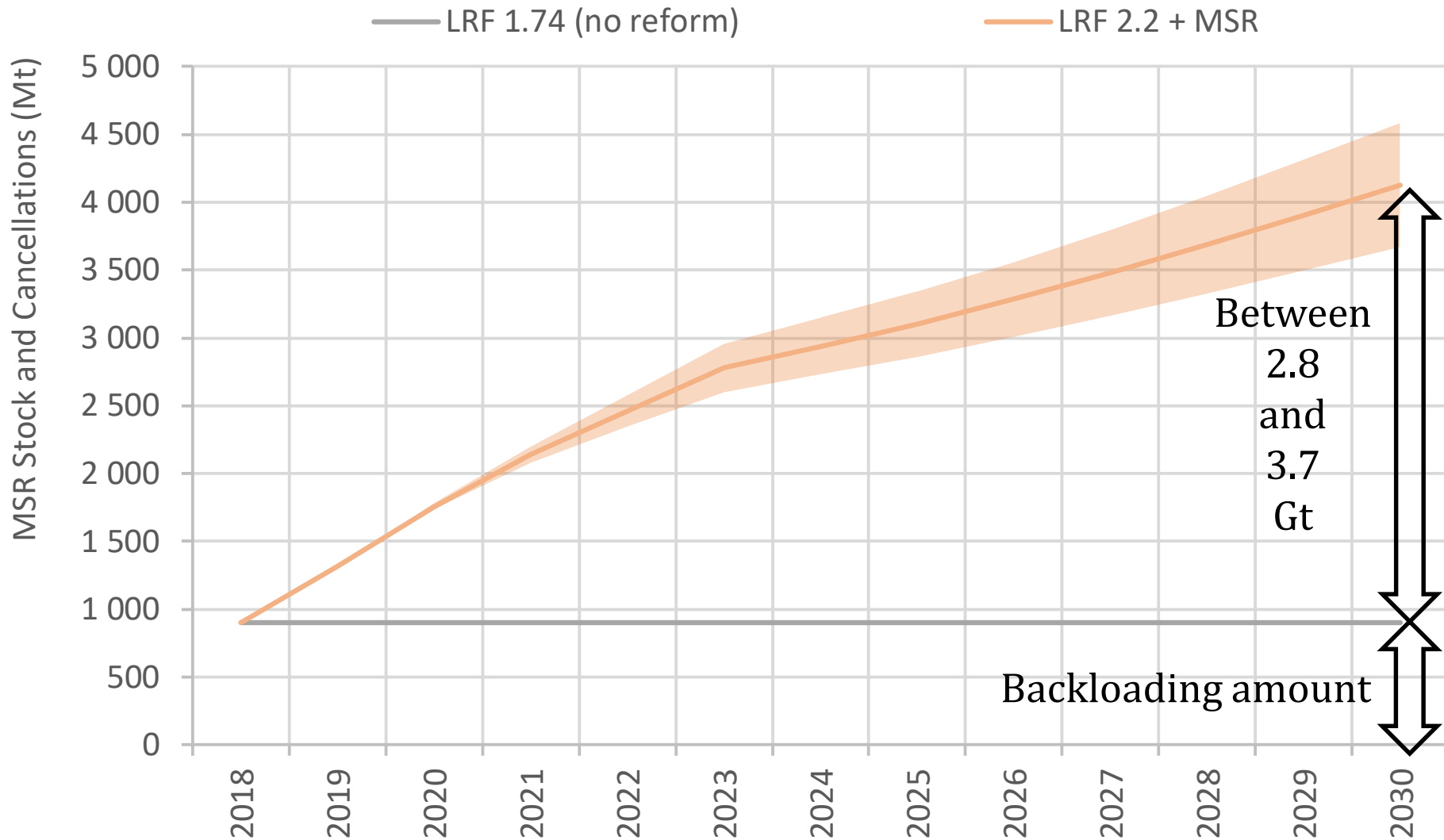
- Given « surplus » allowances already in the market, one needs to anticipate a shortage after 2030 to have a non-zero price today

# Impacts of LRF 2.2 and MSR on the price

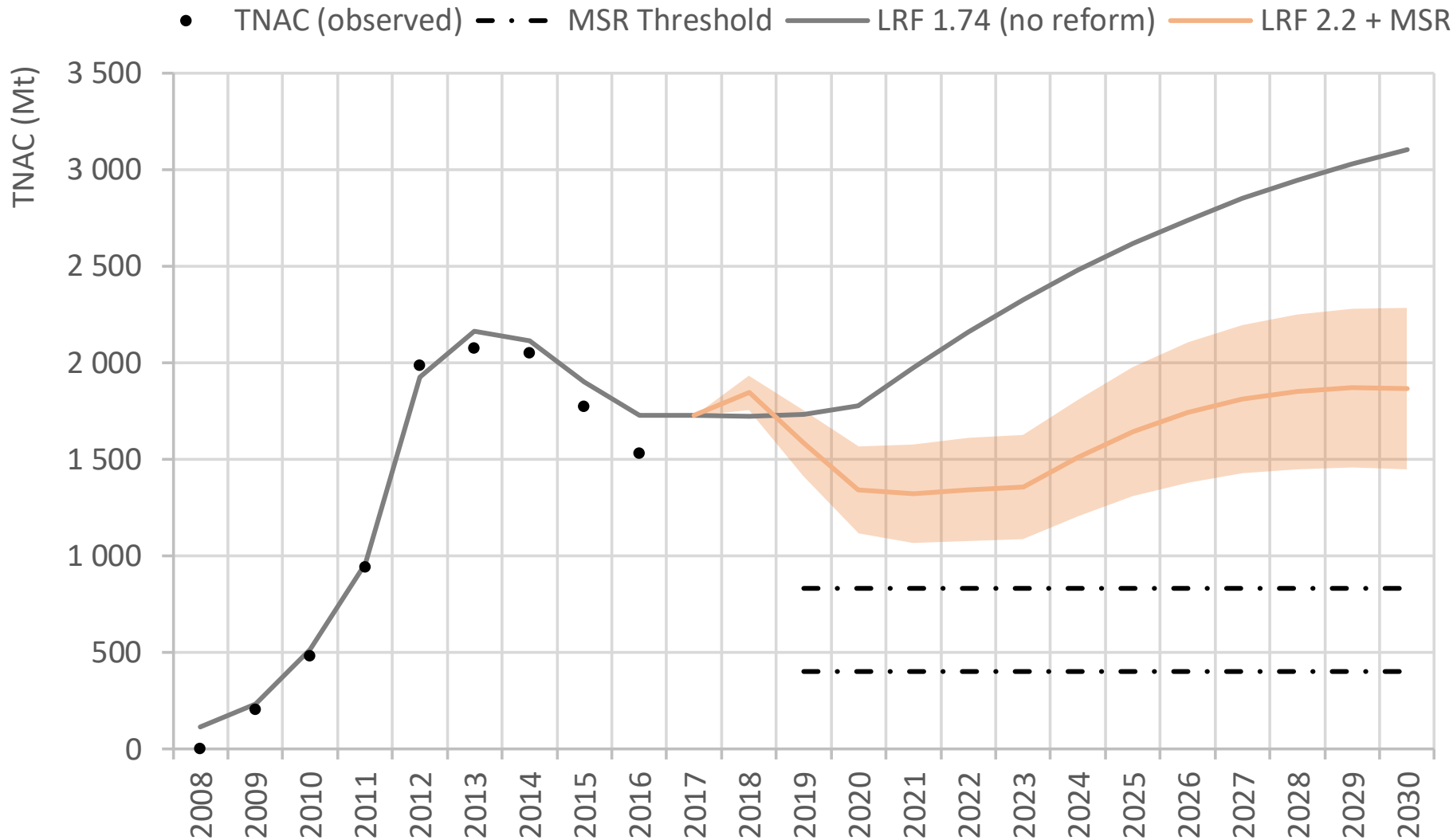


- Emissions decrease by 50% in 2030 compared to 2005

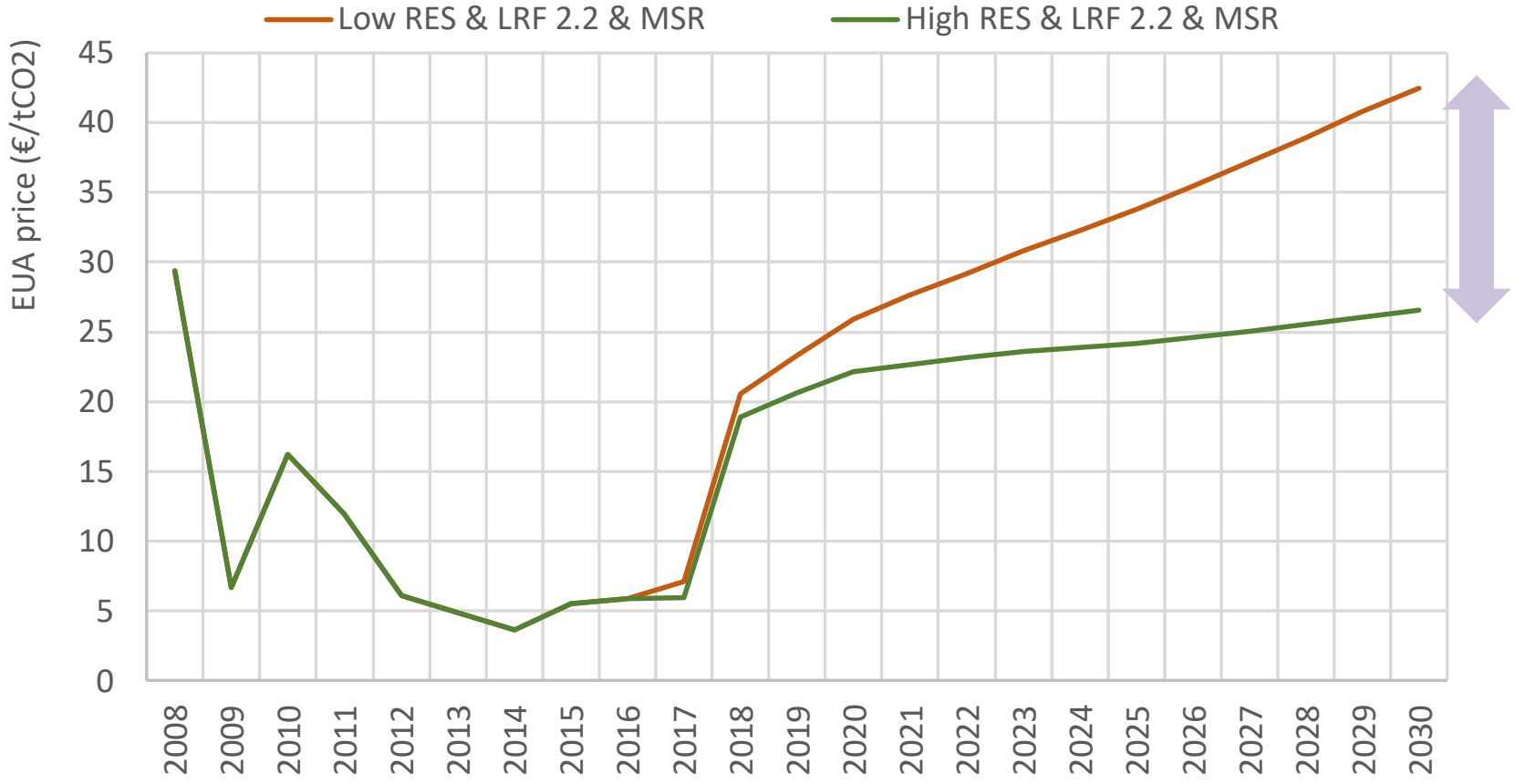
# MSR stock and cancellations



# The effect of LRF 2.2 and MSR on « surplus »



# Testing the MSR stabilizing capacity (1/2)



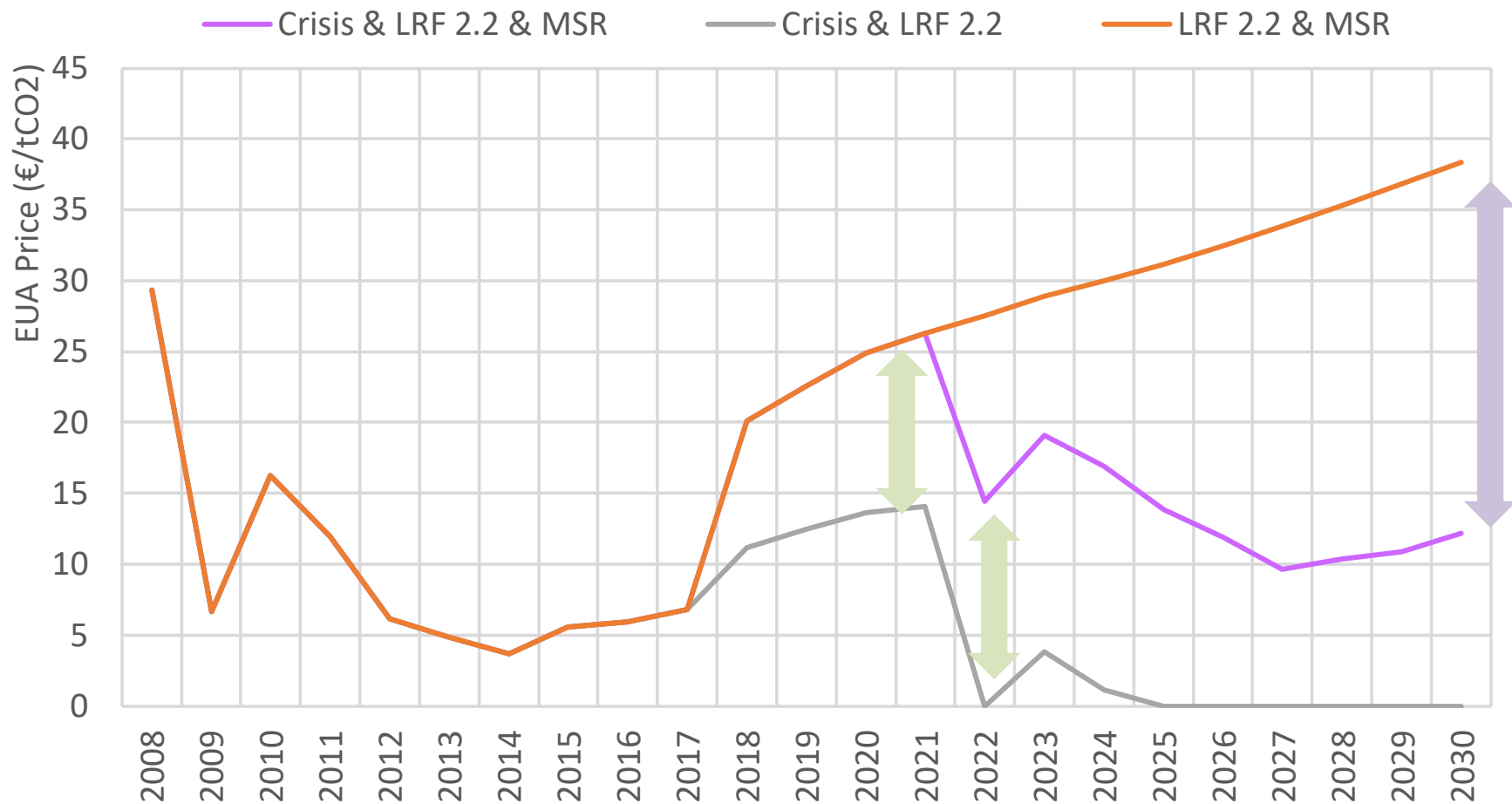
Shares of renewable energy sources (RES) in EU28 energy consumption

RES	2020	2030	2040	2050
Low	20%	25%	30%	36%
High	24%	37%	52%	69%



# Testing the MSR stabilizing capacity (2/2)

Replicating the 2008 crisis in 2022...





# Thank you for your attention

[www.ChaireEconomieDuClimat.org](http://www.ChaireEconomieDuClimat.org)

*The Climate Economics Chair is an initiative of Caisse des dépôts et Consignations, Total, EDF and Paris- Dauphine University under the aegis of Europlace Institute of Finance*

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