MSR Review

Assessing the effects of other MSR parameters using the Zephyr model

ERCST – Preparing the Review of the Market Stability Reserve
Brussels – October 8, 2019

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The Zephyr model

EU ETS simulation partial-equilibrium model on an annual basis

Representative, cost-minimizing actor with anticipations of future supply and demand over a finite rolling planning horizon

- Horizon of 12 years with a 3% interest rate to replicate 2008-17 banking and price dynamics (see LSE Working Paper)
- Includes an MSR module with the current set of parameters

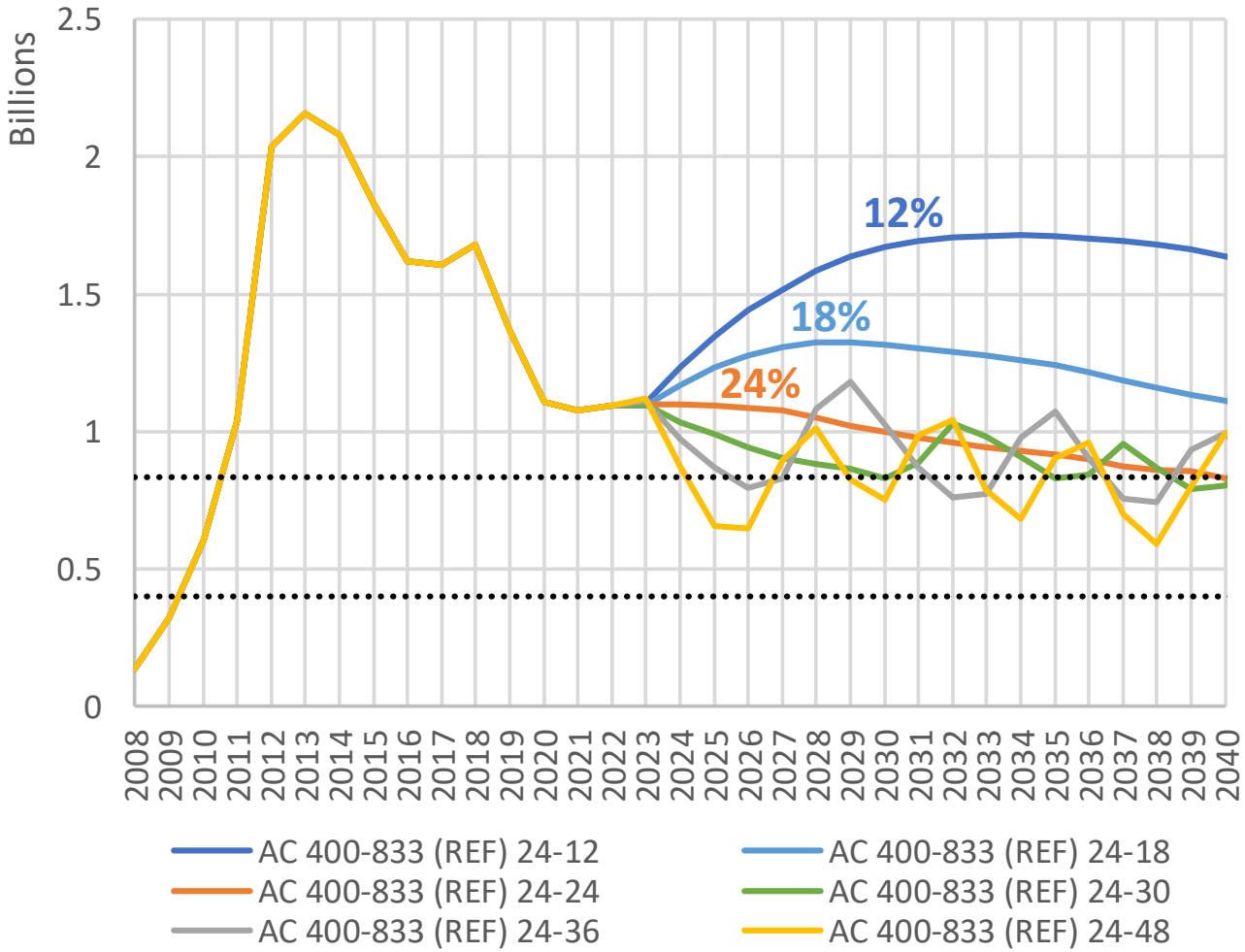
From 2024, we evaluate (assume changes below voted in 2023):

- Intake rates (%): 12-18-24-30-36-48
- Thresholds (Mt): 0-433; 200-633; 400-833; 600-1033; 800-1233
- With and without cancellation (→ very small impact)

Impact of intake rate (thresholds unchanged)

Annual MSR intakes between 2024 and 2040 with different intake rates

Impact of intake rate (thresholds unchanged)



Raising the intake rate does not make a huge difference in the cumulative amount of allowances removed; but it has a strong impact on volatility

The model shows that from around 30% and above, turbulence around the higher threshold level is high

Price trajectories are more or less equivalent whatever the intake rate, but are more volatile with high rates

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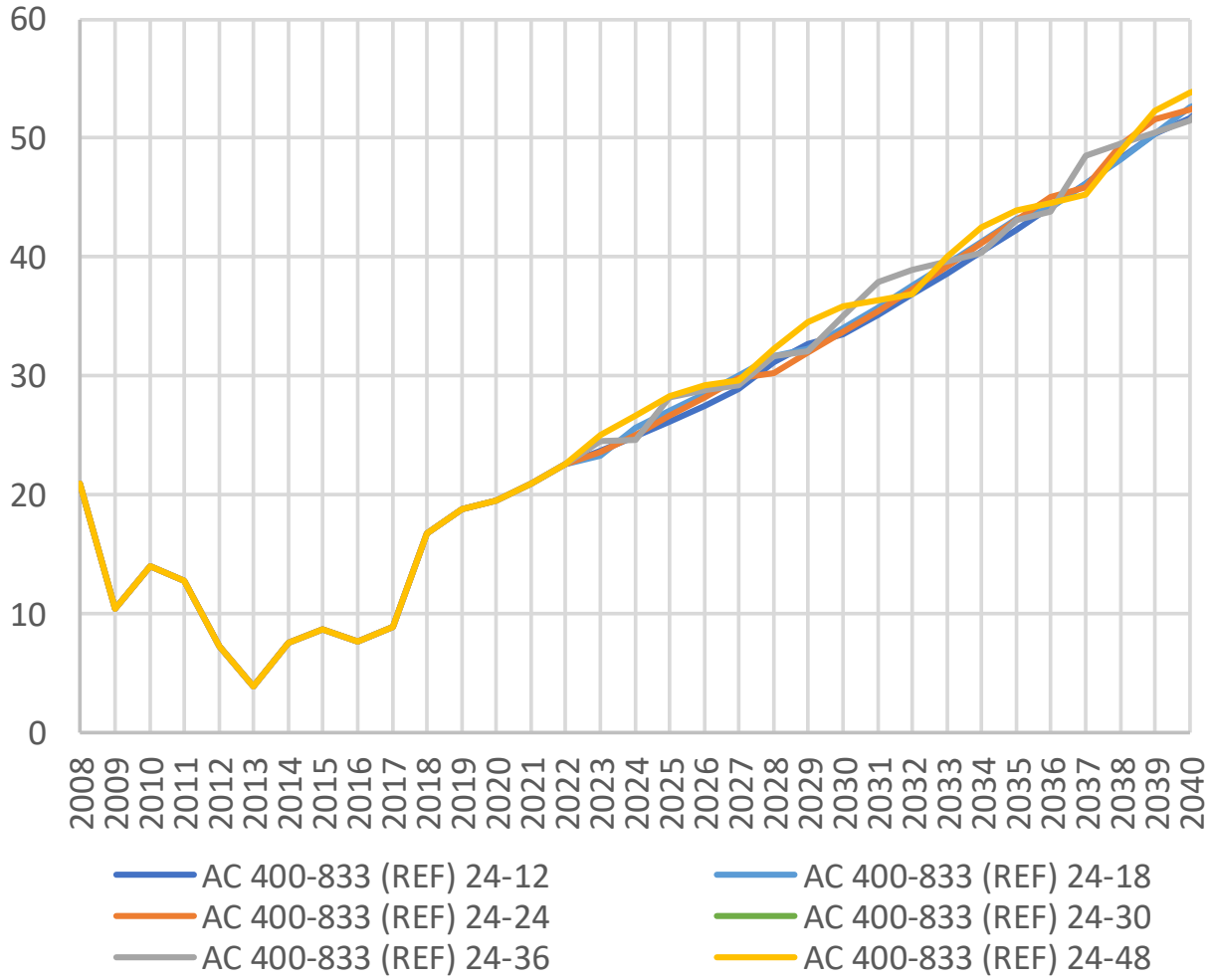

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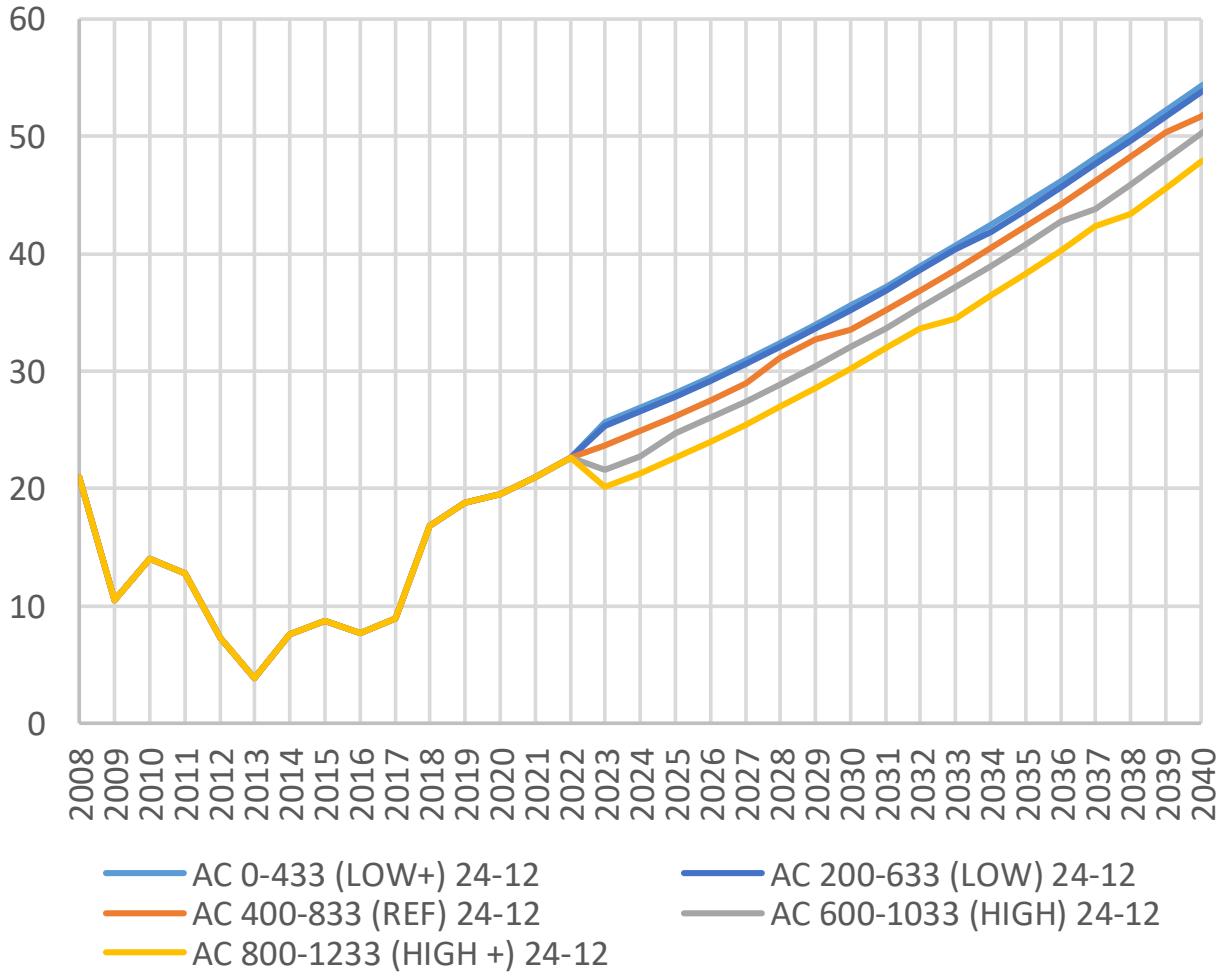

What matters the most is the position of the upper threshold

The higher the upper threshold, the lower the price levels, and the lower the cumulative quantity of removals

With the same intake rate, the model indicates an impact range of 5-10 €/tCO_2

Notably, the higher the upper threshold, the lower the TNAC in equilibrium

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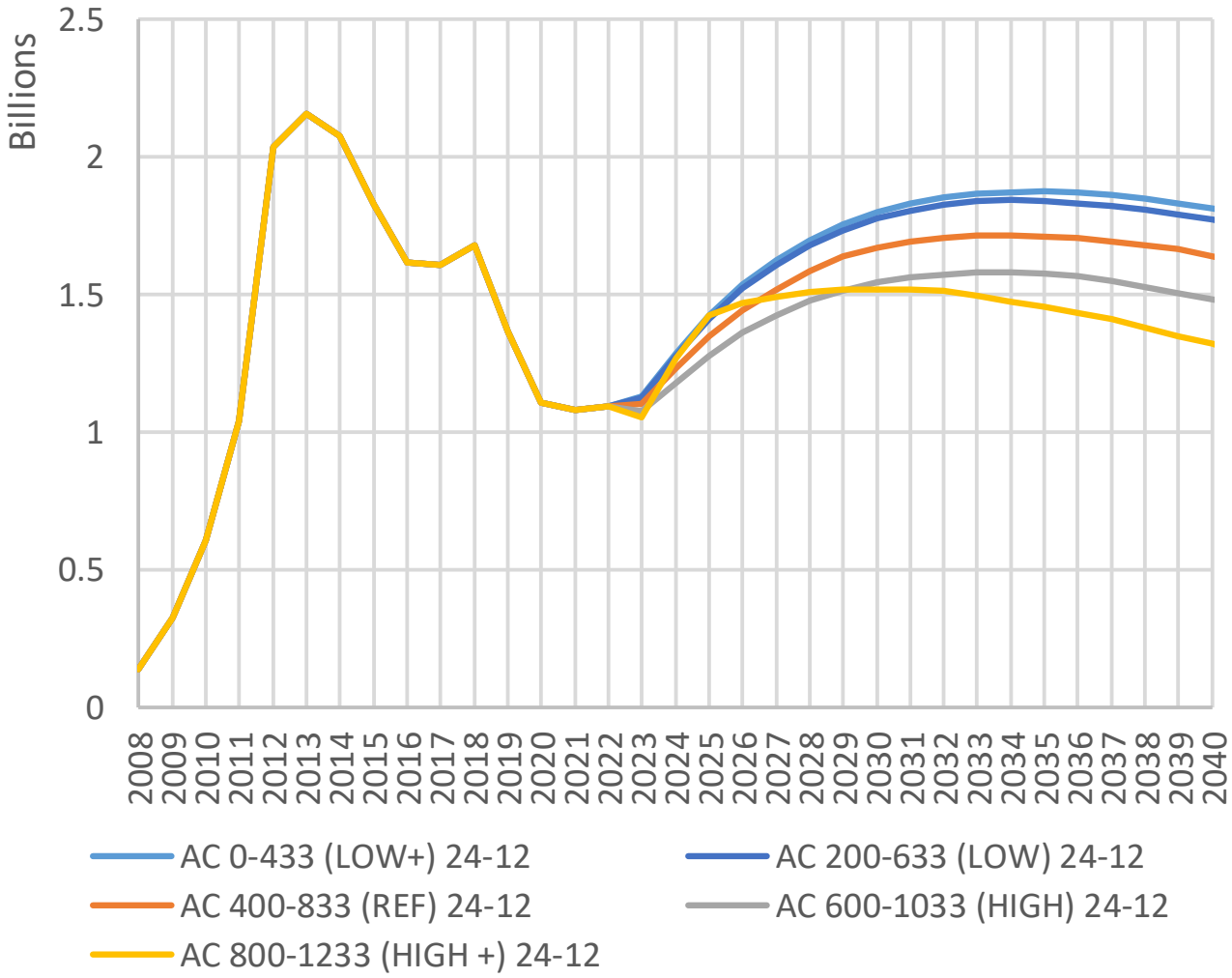

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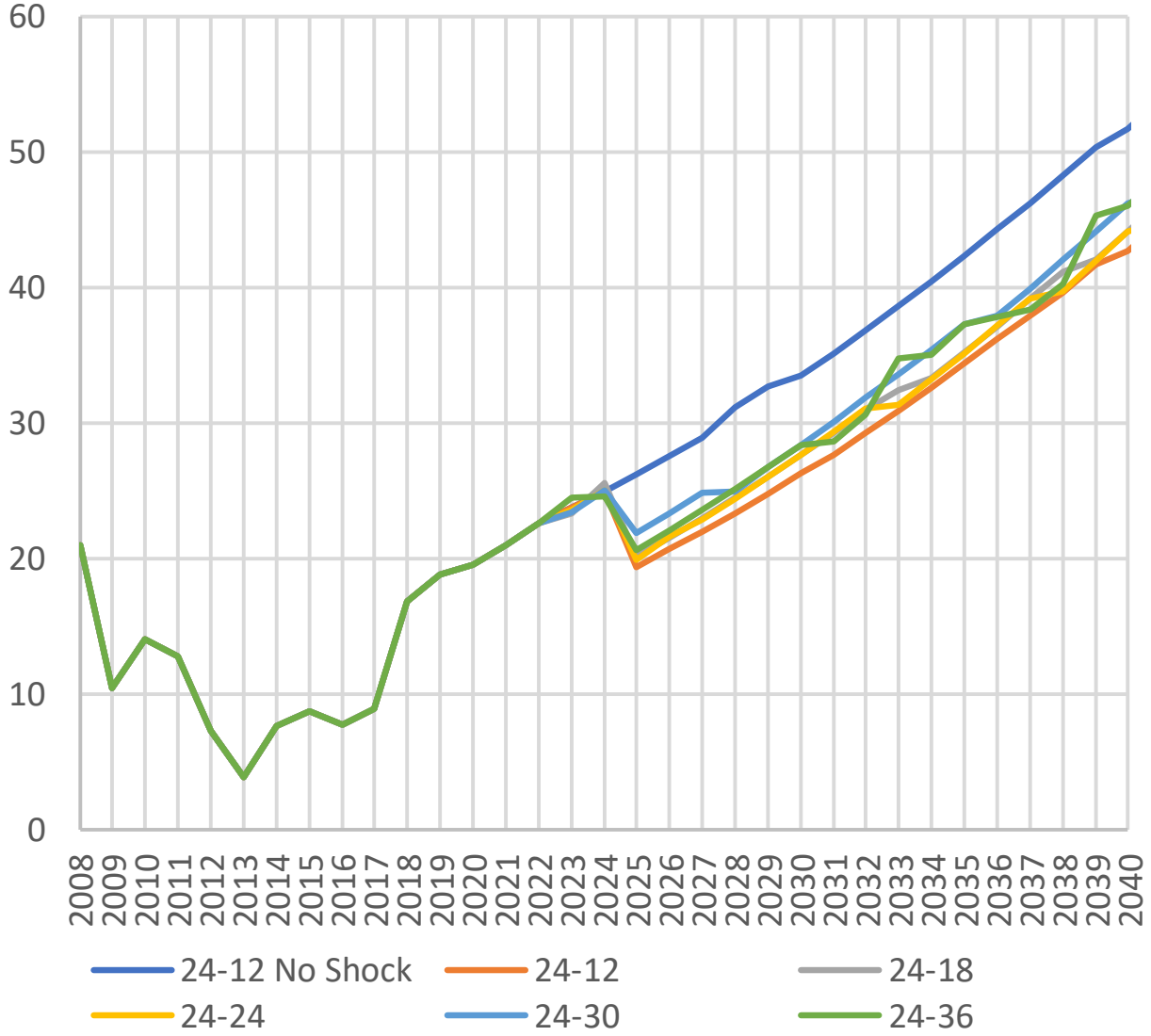
Impact of intake rate on MSR ability to control shocks



Unexpected reduction in baseline emissions of 150 Mt from 2025; with reference thresholds (400-833)

Shock absorption is modest: between 10% and 17% of the cumulative shock

Price recovery and shock absorption are not proportional to the intake rate

- crucially hinge on TNAC value when the shock happens

No intake rate is able to cushion the shock to get the price back 'on track'

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Thank you for your attention

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