



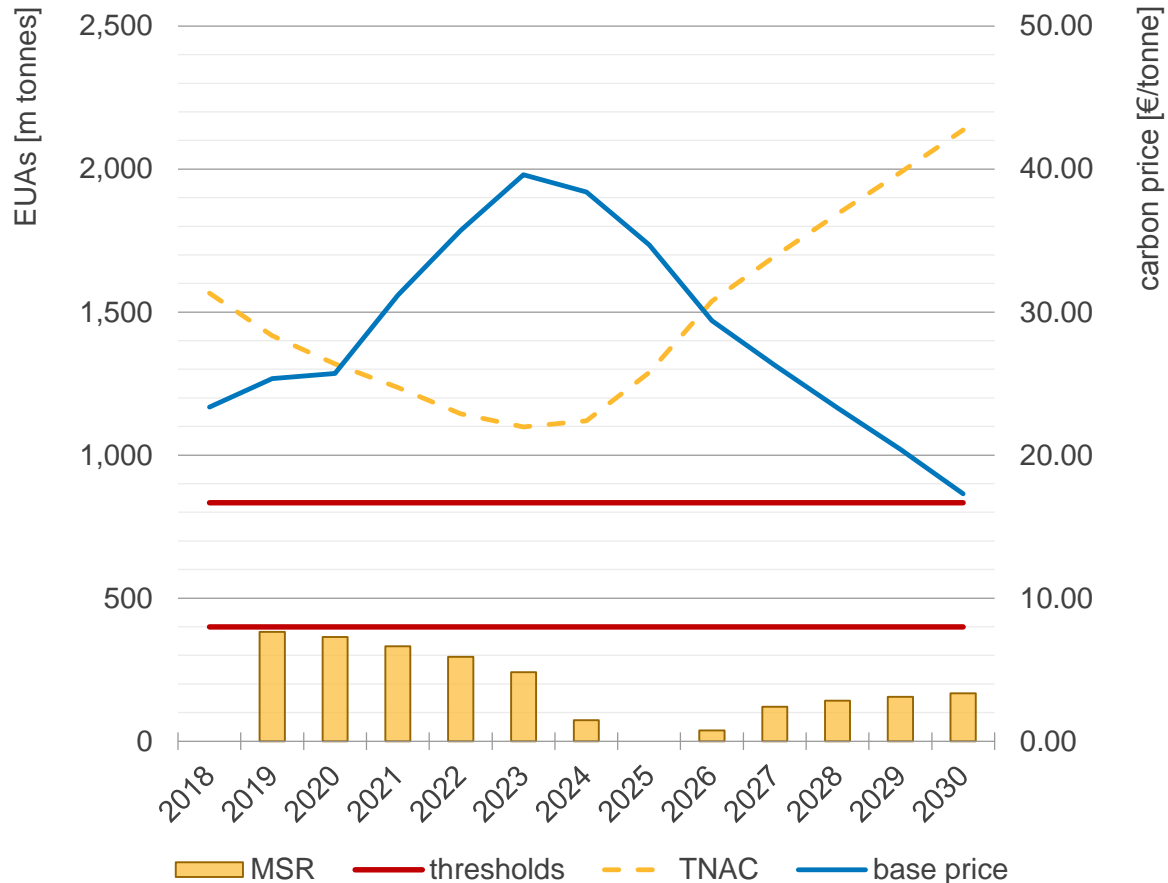
The trend towards coal phase-outs in Europe and the effects on the MSR

12 October 2018

Philipp Ruf

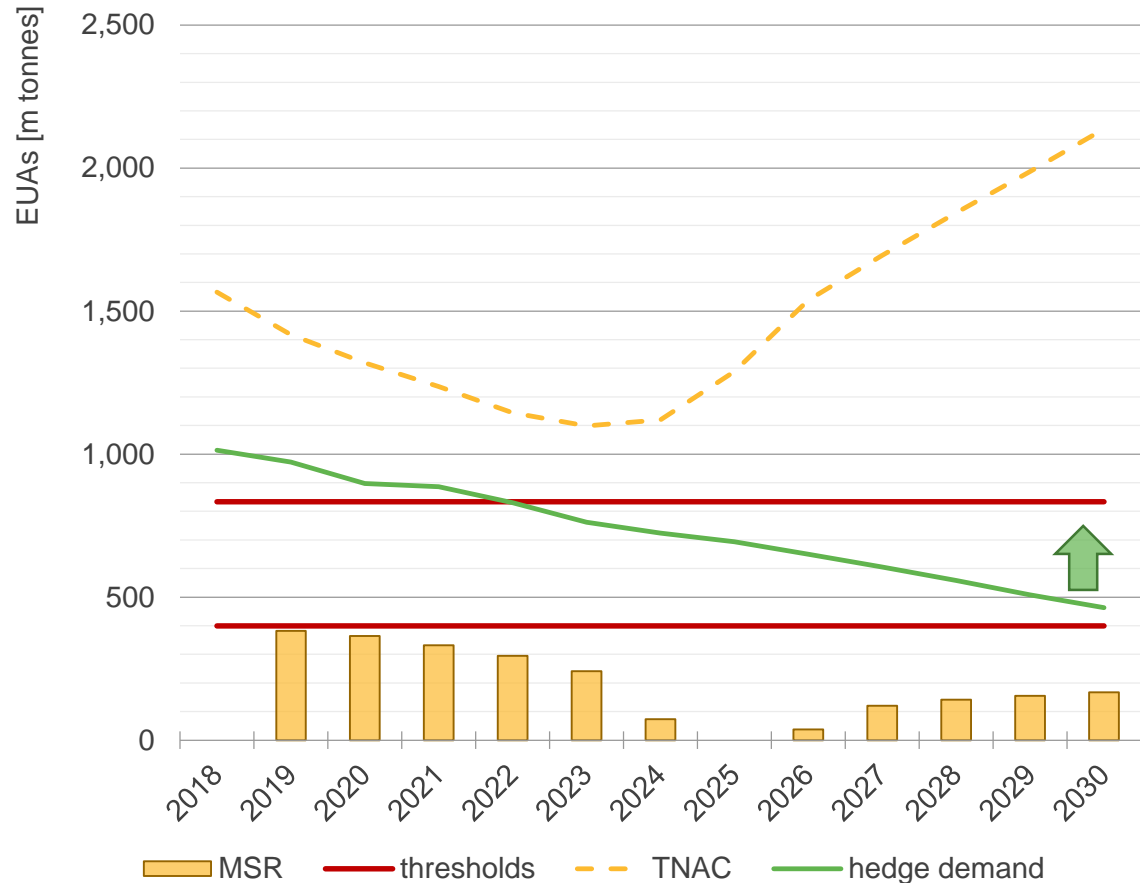
Director – Carbon & Power Analytics

Our base case analysis



- ▶ We expect the market to be squeezed significantly in the early years of TP4 with prices increasing to around €40.00
- ▶ This will trigger significant emission reductions in the power and industry sectors
- ▶ Consequently, prices tend back with supply increasing (MSR goes back to 12%) and demand decreasing (lower base emissions)
- ▶ The triggered abatement increases also the TNAC as the MSR is not capable to reduce over-supply at the same speed

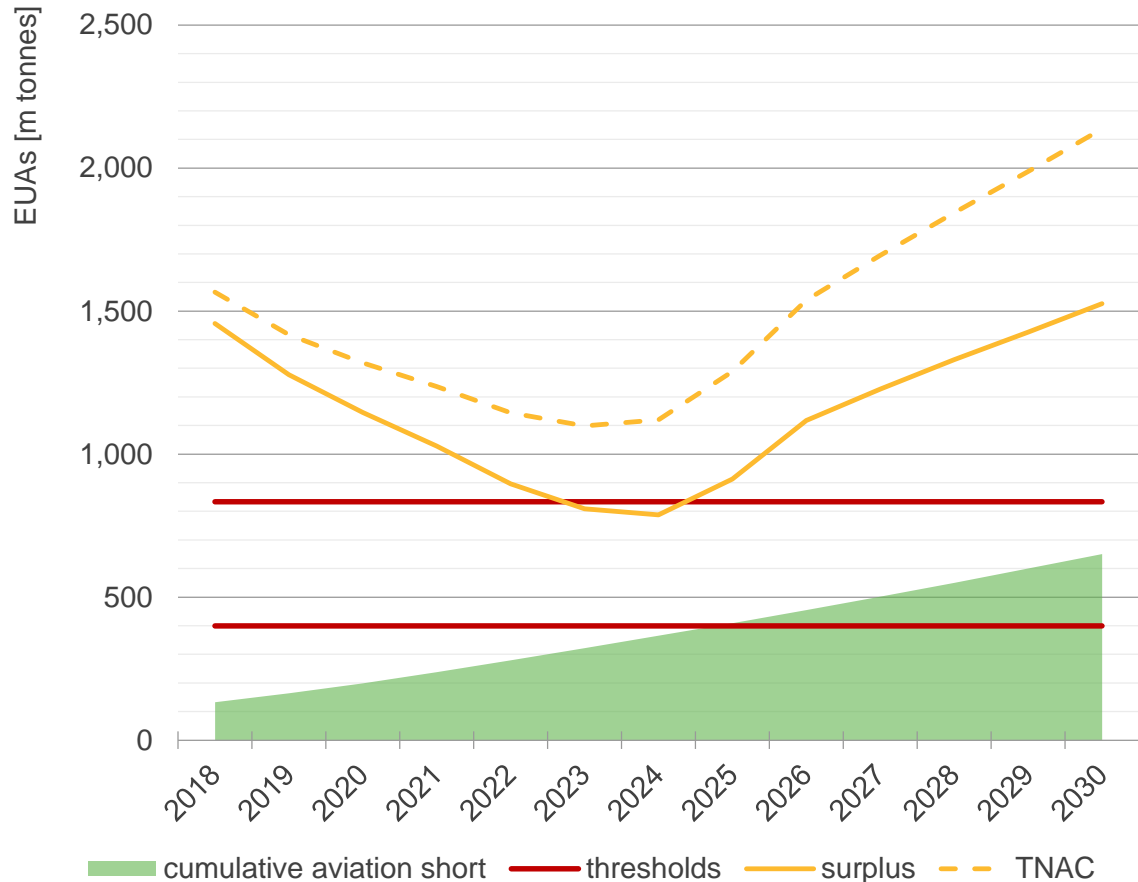
Our base case analysis



- ▶ The decreasing base emissions reduce the hedge demand from the power sector significantly
- ▶ However, this assumes standard behaviour
- ▶ It can be expected that utilities from Eastern Europe will hedge more in the future
- ▶ Industrials will also try to mitigate price risk by hedging carbon exposure early

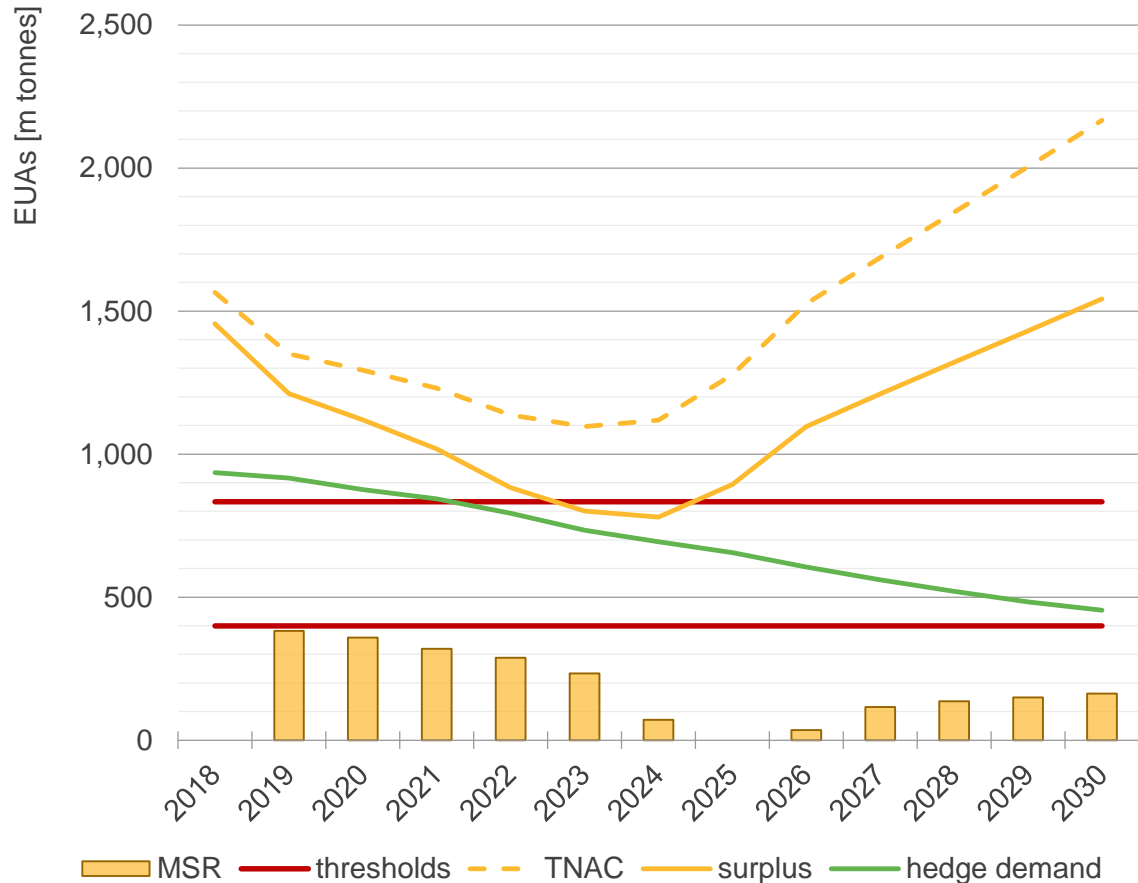


One key bit needs to be taken into account: the TNAC is not the available surplus



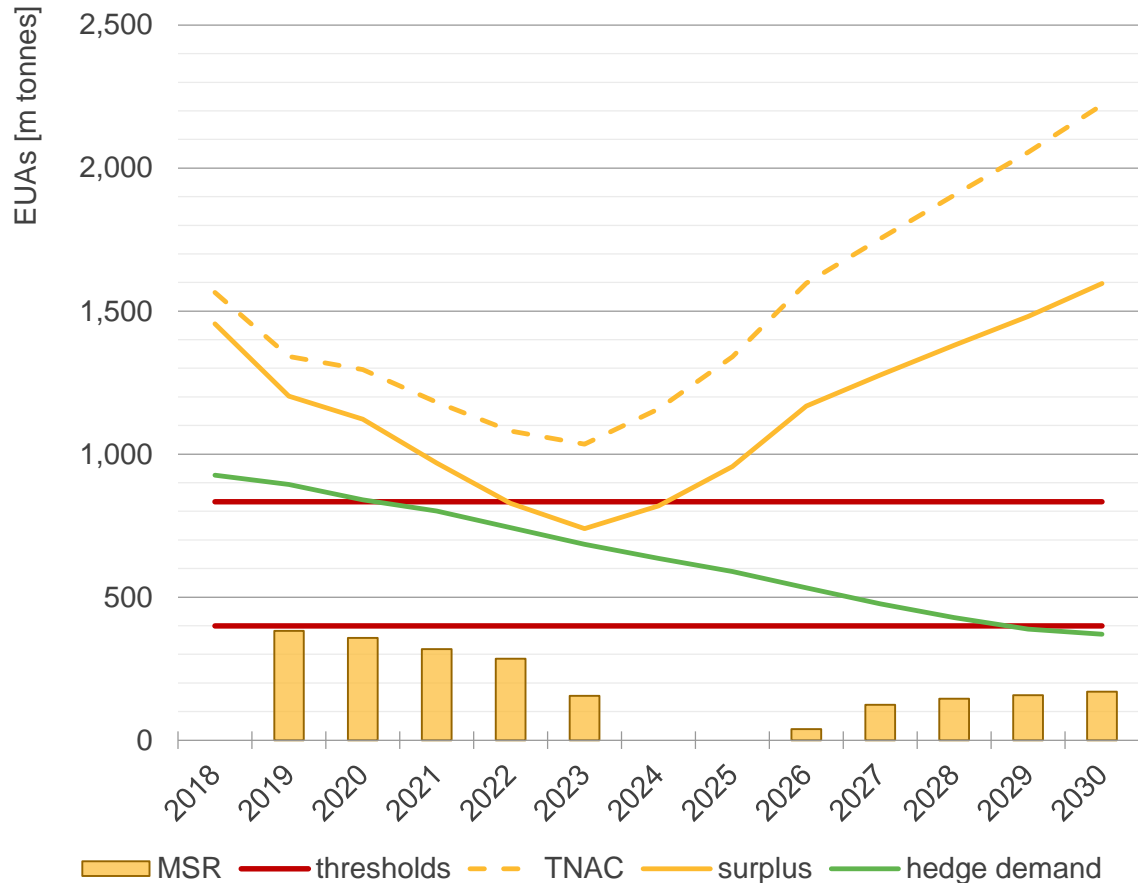
- ▶ Due to the exclusion of EUA compliance by the aviation sector, the TNAC is higher than the available surplus
- ▶ We expect this to be changed and incorporate a TNAC equal to the surplus in our analysis from 2022 onwards
- ▶ If not, the lower threshold is impossible and the upper threshold nearly impossible to undercut

The MSR in the context of coal phase-outs all over Europe: 20% less coal in Europe than BAU



- Basics
 - 20GW less than BAU coal capacity
 - 150TWh less generation than BAU
 - 50% back-filled by gas, rest by RES
 - Roughly 90m tonnes emission cuts
- Hedge demand reduces by 10m EUAs in 2030
- Surplus increases by 15m EUAs
- Prices will be more pressured and tend lower

The MSR in the context of coal phase-outs all over Europe: 50% less coal in Europe than BAU



- Basics
 - 50GW less than BAU coal capacity
 - 375TWh less generation than BAU
 - 50% back-filled by gas, rest by RES (investment needed)
 - Roughly 225m tonnes emission cuts
- Hedge demand reduces by 90m EUAs in 2030
- Surplus increases by 70m EUAs
- Prices will be more pressured and tend lower



The MSR in the context of coal phase-outs all over Europe: 70% less coal in Europe than BAU



- ▶ Basics
 - ▶ 70GW less than BAU coal capacity
 - ▶ 525TWh less generation than BAU
 - ▶ 50% back-filled by gas, rest by RES (investment needed)
 - ▶ Roughly 315m tonnes emission cuts
- ▶ Hedge demand reduces by 150m EUAs in 2030
- ▶ Surplus increases by 153m EUAs
- ▶ Prices will be more pressured and tend lower

Conclusions

- ➔ The 24% MSR world will trigger significant emission reductions
- ➔ According to our analysis, the MSR will not be strong enough to mitigate the surplus built-up due to lower emissions
- ➔ On top, the thresholds will need to be scrutinised carefully to capture latest trends and the reduction of fossil power generation
- ➔ If we factor in the current trend towards coal phase-outs all over Europe
 - ▶ The surplus increases more
 - ▶ The hedge demand is reducing more

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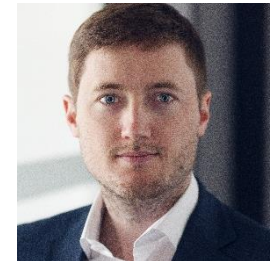
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