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EU ETS: Phase IV price projections and scenarios

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ICTSD International Centre for Trade and Sustainable Development

ERCST European Roundtable on Climate Change and Sustainable Transition

Introduction

- Start with two presentations by project team
  - Jean-Yves Caneill, ERCST

- Different models, with different assumptions
  - Test functioning of MSR under these assumptions

Nomisma Energia model (NETS)

- Supply determined by
  - Policies (EU and Member State)
  - Free allocation, auctioning etc.
- Demand determined by
  - Policies (EU and Member State) – including RE and EE
  - Macroeconomic perspective
  - Power and industry emissions
    - For each MS, emission profiles for industrial sectors are analysed
  - Energy mix
- Balance determines EUA price and MSR functioning

Three NETS scenarios

1. Scenario A (2030 RES and EE Targets)
2. Scenario B (2030 RES and EE Targets + German coal phase out)
3. Scenario C (2030 RES and EE Targets) + lower supply

- All three scenarios include:
  - Emissions from power and industry
  - Auctioned and allocated allowances
  - MSR functioning under current rules

GDP Assumptions Scenario A, B, and C

- 2018 and 2019 based on European Commission Summer 2018 Interim Economic Forecast
  - 2018: 2,1%
  - 2019: 2%

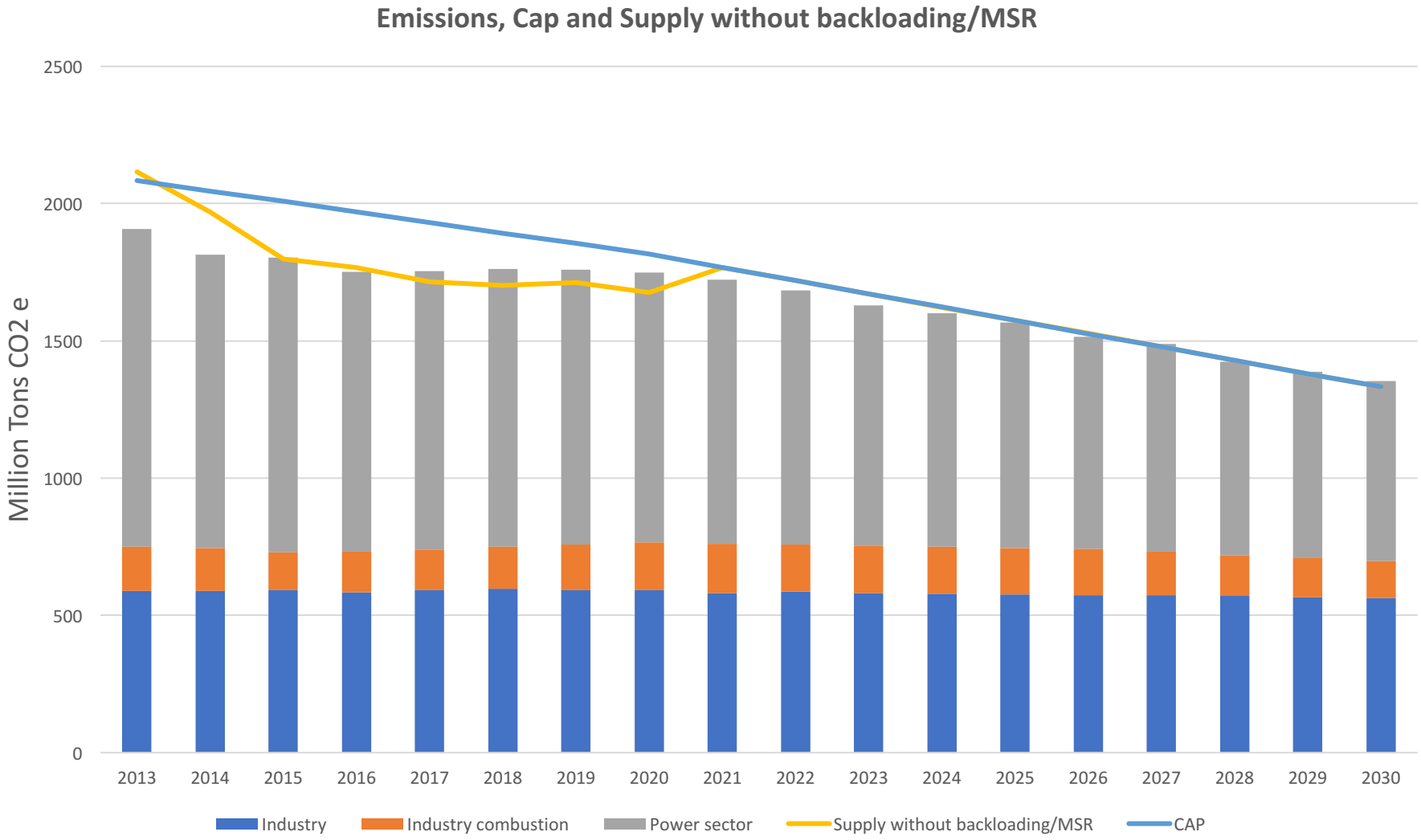
- 2020-2030 based on EC reference scenarios (PRIMES)
  - Annual growth over the decade: 1,4%

Scenario A: 2030 RES and EE targets

Assumptions Scenario A

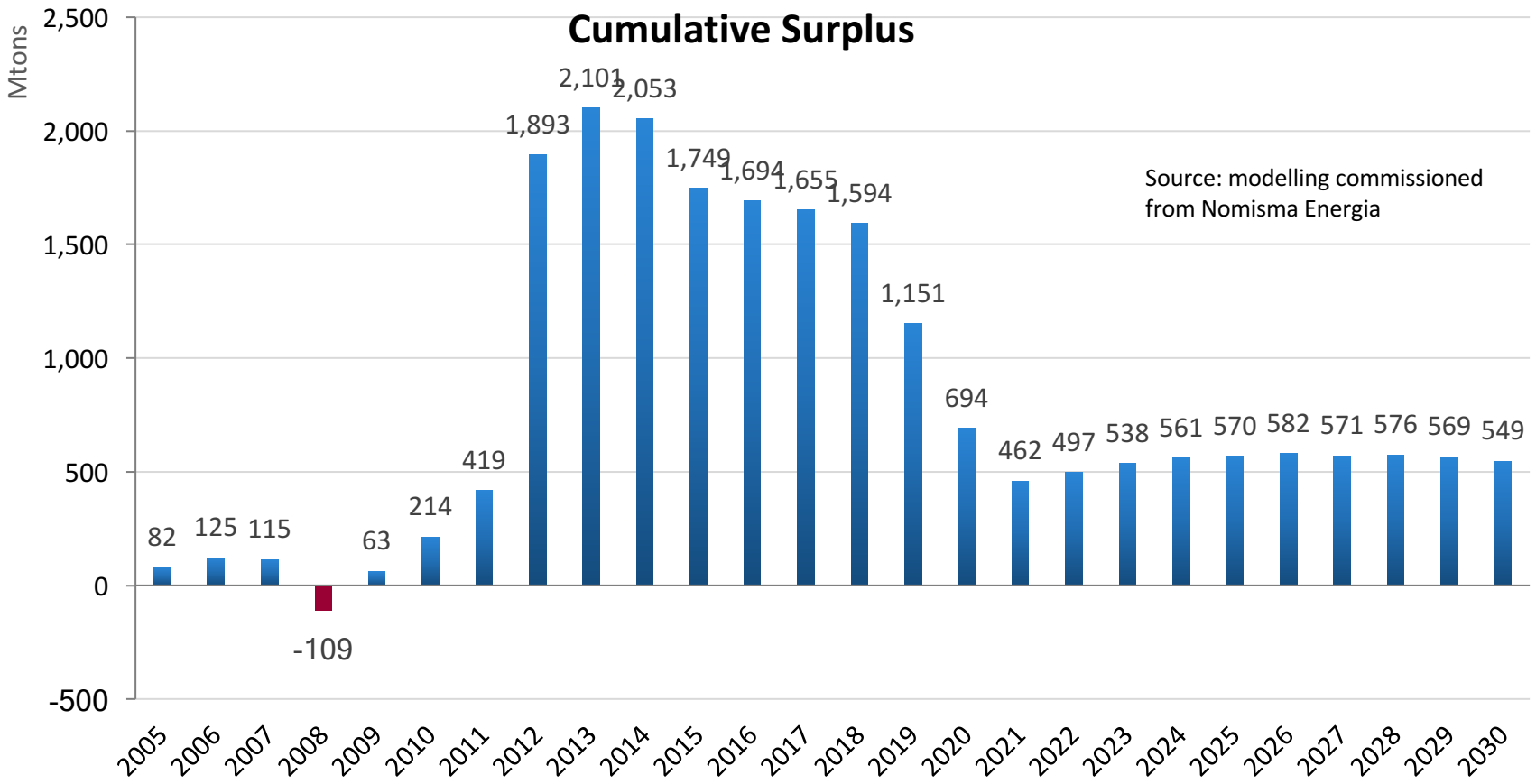
- EE: -1,5% energy efficiency reduction per year
- Coal phase out in the countries which have already formally announced it
  - Austria, Belgium, Finland, France, UK, Italy, Netherlands, Portugal, Sweden
- MSR annual intake: 24% till 2023; 12% 2024 onward; invalidation after 2023.
- The UK is considered in the EU ETS also in P4
- GDP growth:
  - short-term: EC interim summer forecast per country
  - long-term: Primes

Scen A: Emissions vs. the EU ETS cap



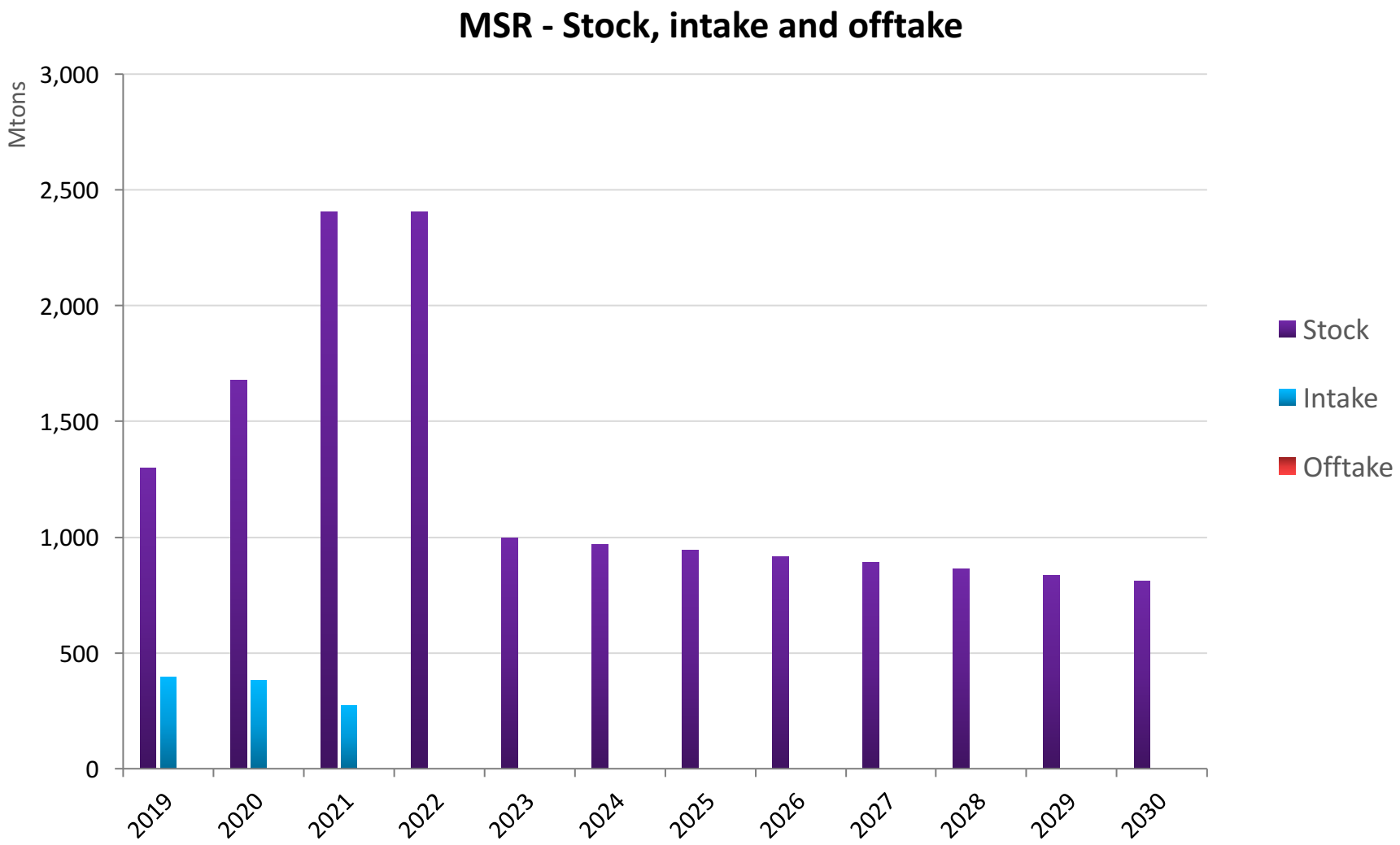
Source: modelling commissioned from Nomisma Energia

Scen A: cumulative surplus/deficit



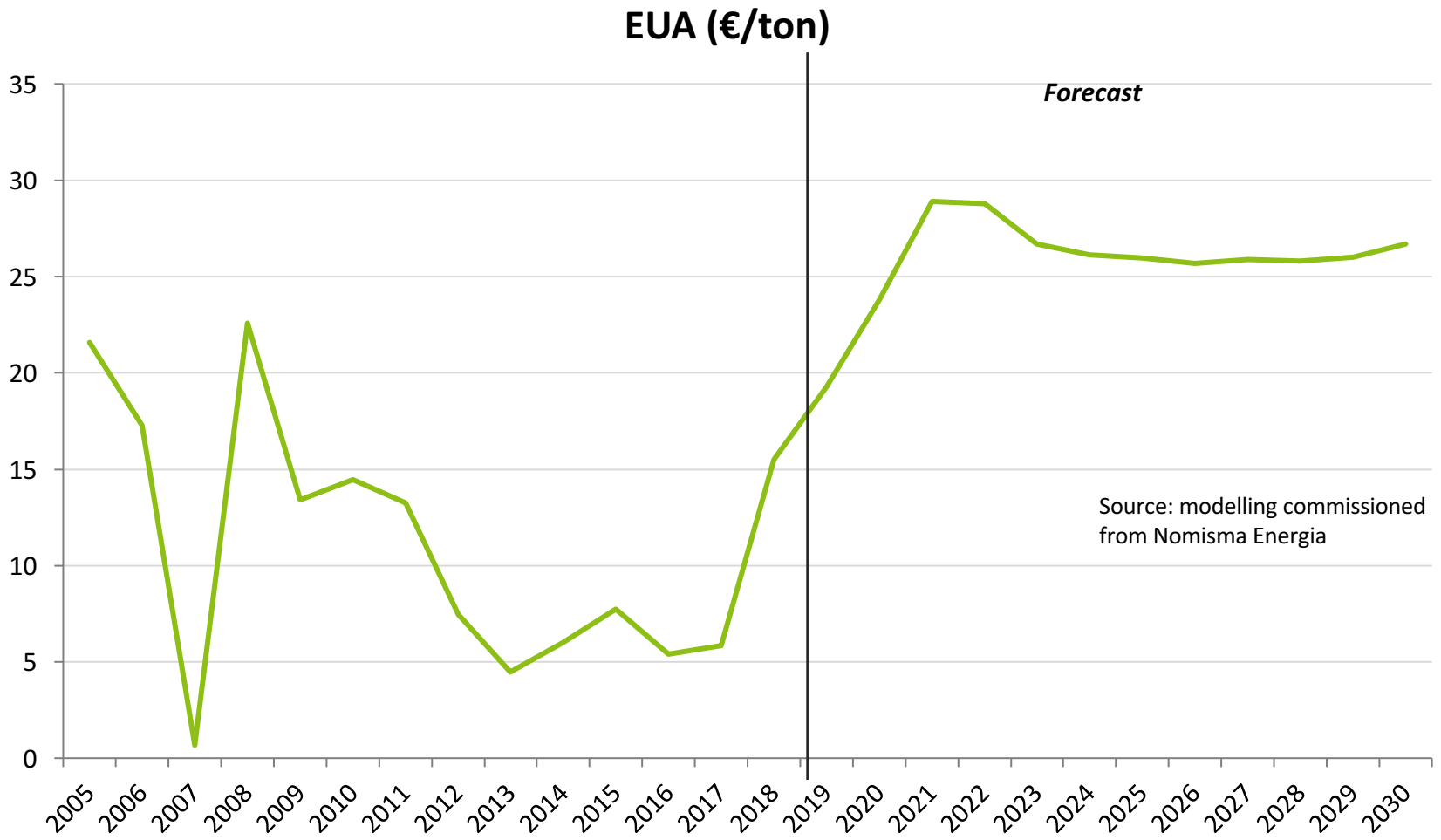
Phase 4 will see a rapid decrease of the surplus due to the introduction of the MSR which will remove 1,1 billion EUAs in the first three years. After 2025, the rise of renewables and the reduction of energy consumption due to energy efficiency will drive emission reductions. Between 2023 and 2030 surplus remains stable around 560 million EUAs.

Scen A: MSR - stock, intake and offtake



Source: modelling commissioned from Nomisma Energia

Scen A: EUA prices (€)



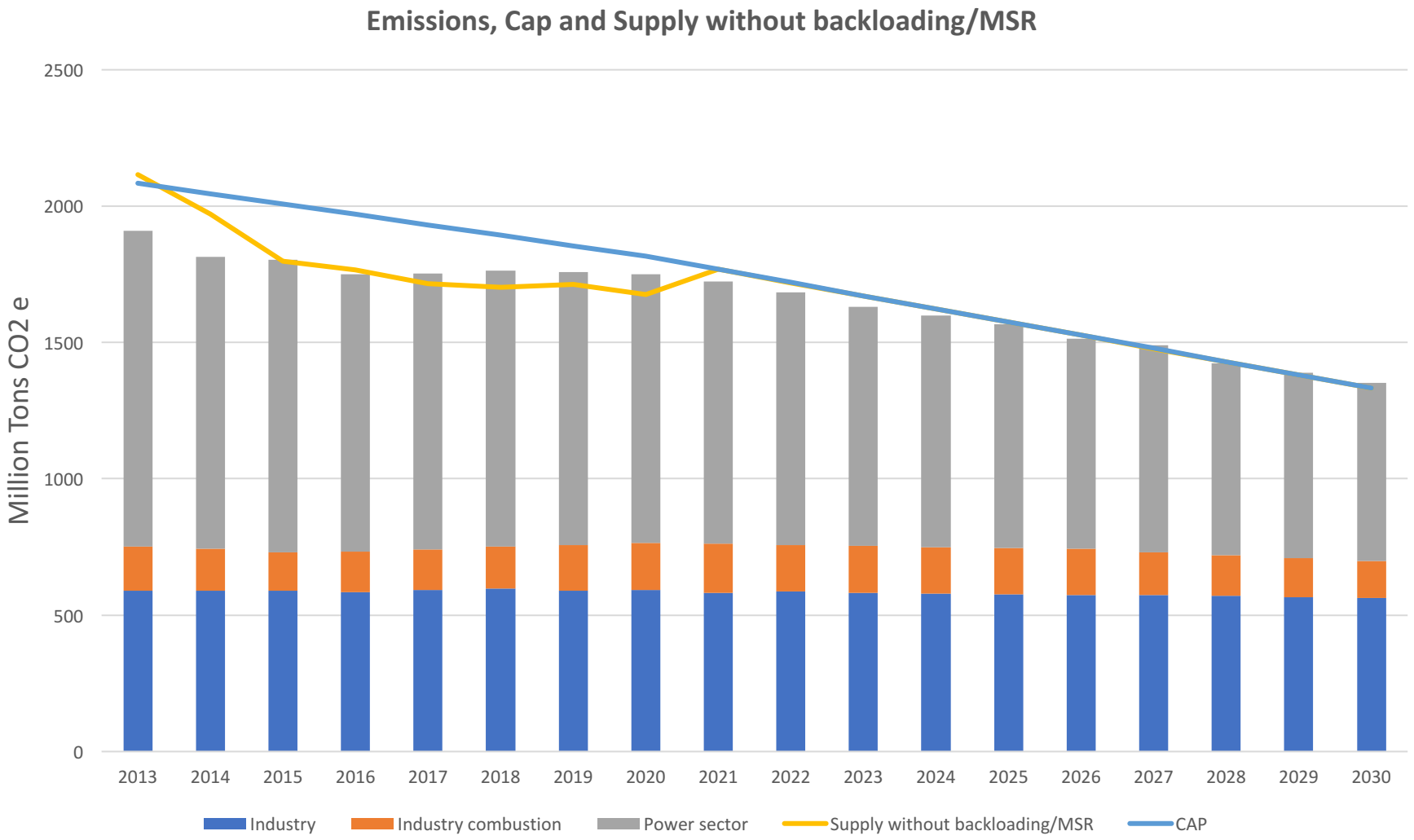
The price of EUAs is expected to peak in 2022, reaching 29 €/ton on the back of the supply reduction. After 2025, the rise of renewables and the decommissioning of some coal plants will push prices down to 27 €.

Scenario B: 2030 RES and EE targets and linear German coal phase out

Assumptions Scenario B

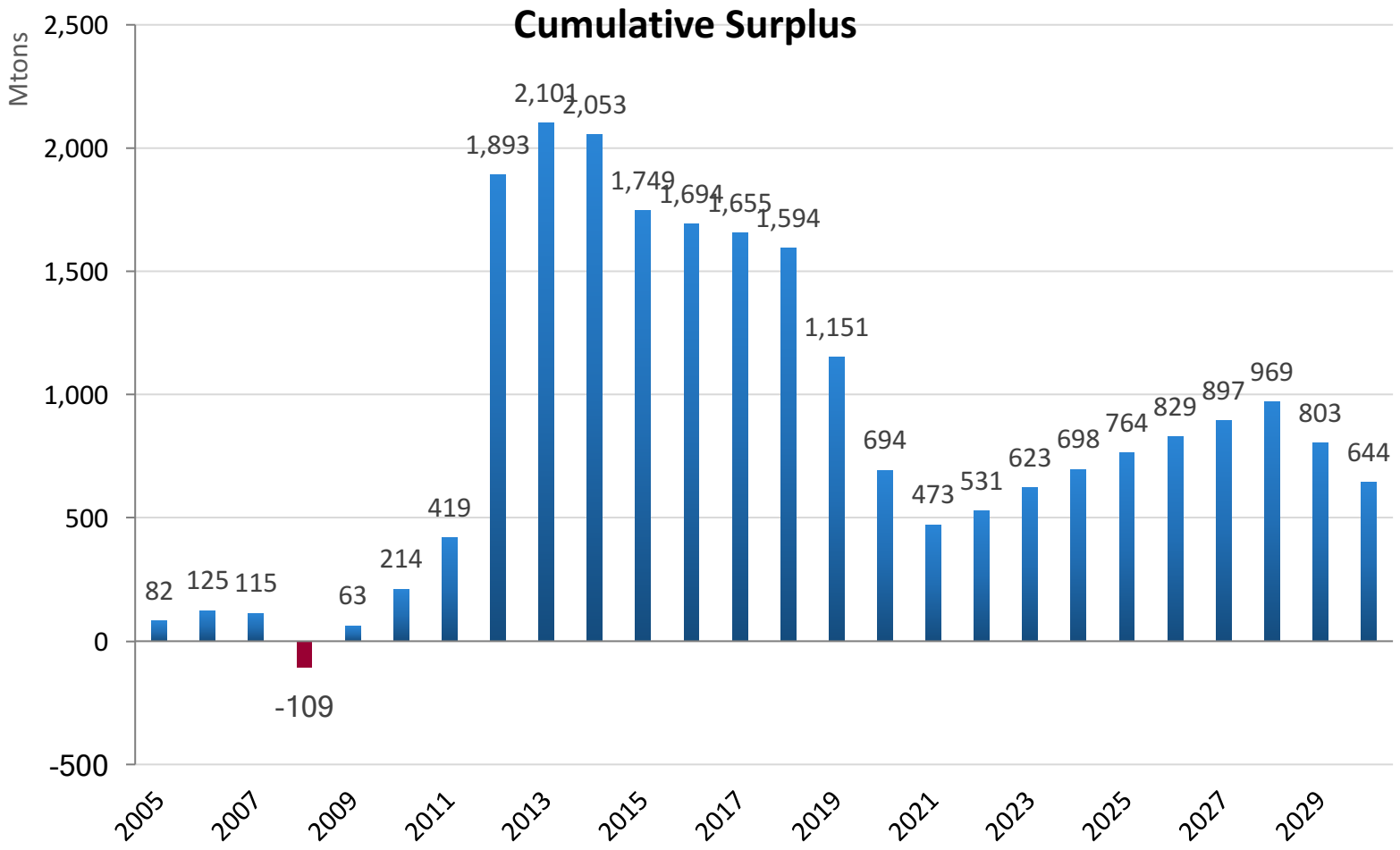
- EE: -1,5% energy efficiency reduction per year
- Coal phase out in the countries which have already formally announced it ***+ German linear phase out 2020-2030***
  - Austria, Belgium, Finland, France, UK, Italy, Netherlands, Portugal, Sweden
  - Coal generation in Germany is replaced by a mix of natural gas, wind, solar and biomass
- The UK is considered in the EU ETS also in P4
- MSR annual intake: 24% till 2023; 12% 2024 onward; invalidation after 2023.
- GDP growth:
  - short-term: EC interim summer forecast per country
  - long-term: Primes

Scen B: Emissions vs. the EU ETS cap



Source: modelling commissioned from Nomisma Energia

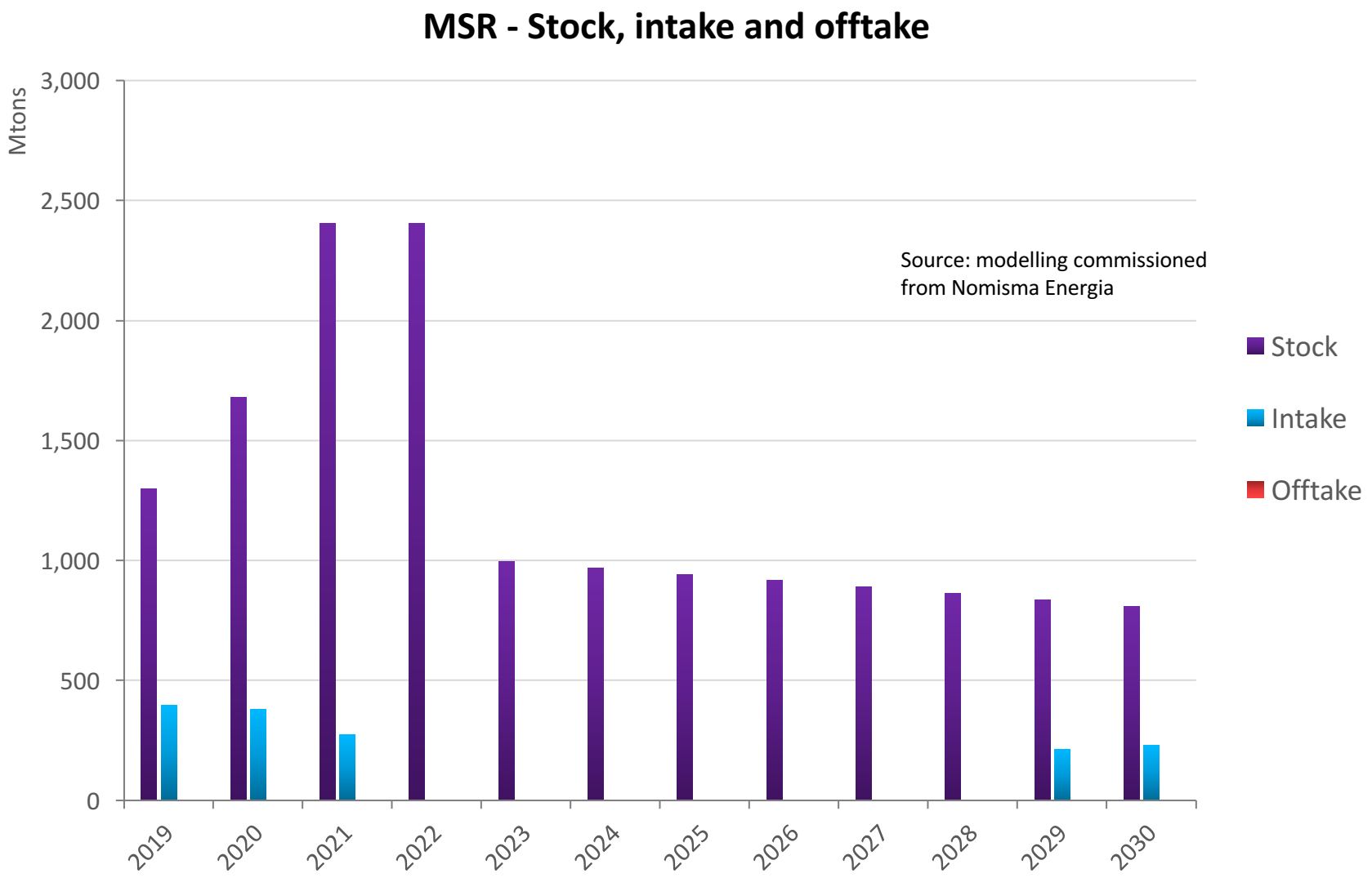
Scen B: cumulative surplus/deficit



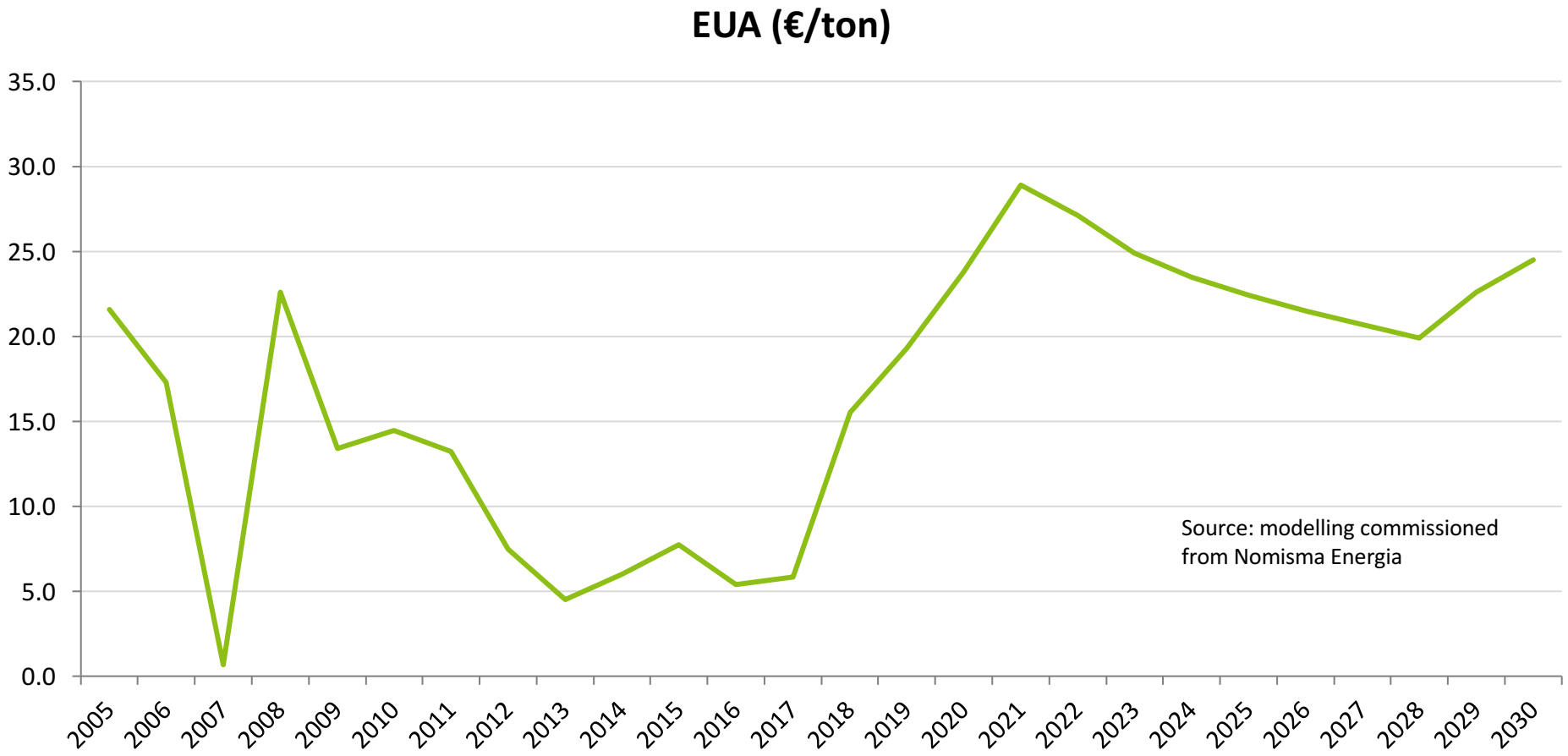
Compared to Scenario A, the coal phase out in Germany will lead to a new phase with surplus: starting in 2023 the surplus will progressively grow breaching the MSR thresholds again by 2028.

Source: modelling commissioned from Nomisma Energia

Scen B: MSR - stock, intake and offtake



Scen B: EUA prices (€)



The price of EUAs is expected to peak in 2022, reaching 29 €/ton on the back of the supply reduction. After 2025, the rise of renewables and the decommissioning of some coal plants will push prices down to 20 € by 2028. As the MSR takes on allowances again in 2029-2030, prices increase again up to 25€.

Conclusions Scenario A and B

- MSR functions as expected and designed in these scenarios
- German coal phase-out does not change the outcomes significantly – MSR is able to absorb additional surplus
  - This model sees mostly coal-to-gas switch
  - No major effect on share of renewables in the EU by 2030
- Prices will not go into territories that would incentivize emission-absorption technologies such as CCS or CC(S)U

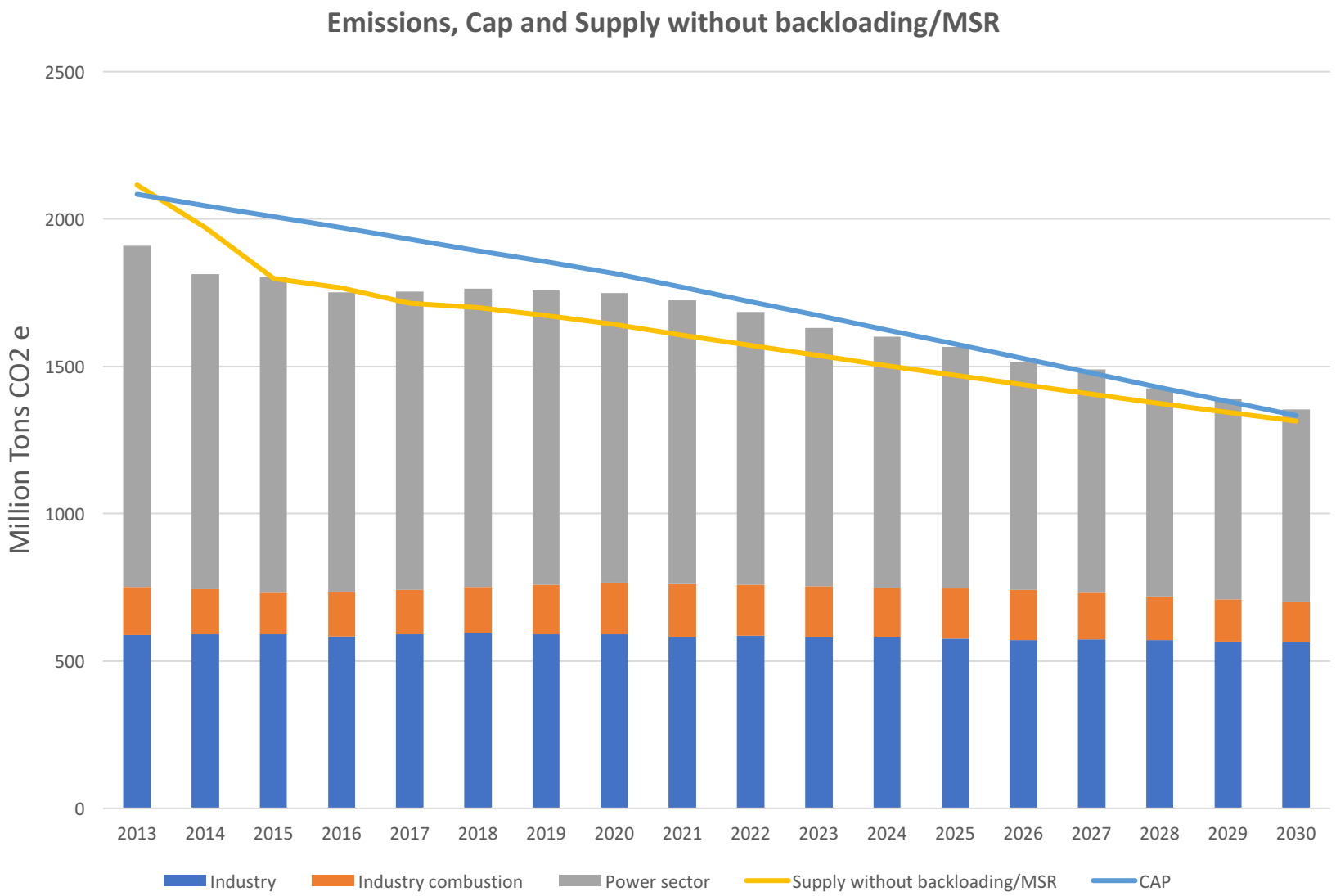
Scenario C: 2030 RES and EE targets in a hypothetically very short market

Assumptions Scenario C

- EE: -1,5% energy efficiency reduction per year
- Coal phase out in the countries which have already formally announced it
  - Austria, Belgium, Finland, France, UK, Italy, Netherlands, Portugal, Sweden
- MSR annual intake: 24% till 2023; 12% 2024 onward; invalidation after 2023.
- The UK is considered in the EU ETS also in P4
- GDP growth:
  - short-term: EC interim summer forecast per country
  - long-term: Primes

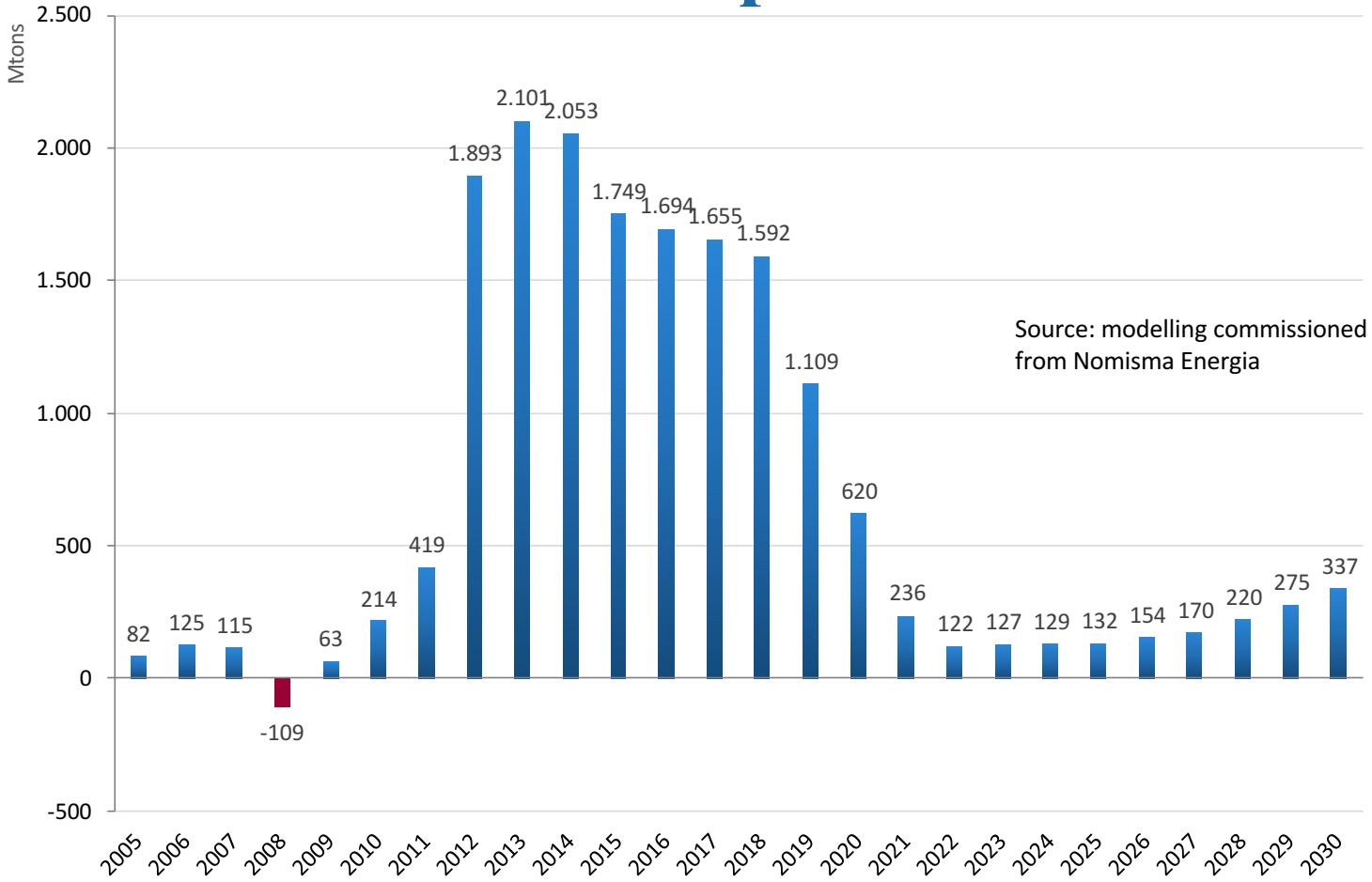
- **VERY short market**

Scenario C: Emissions vs. the EU ETS cap



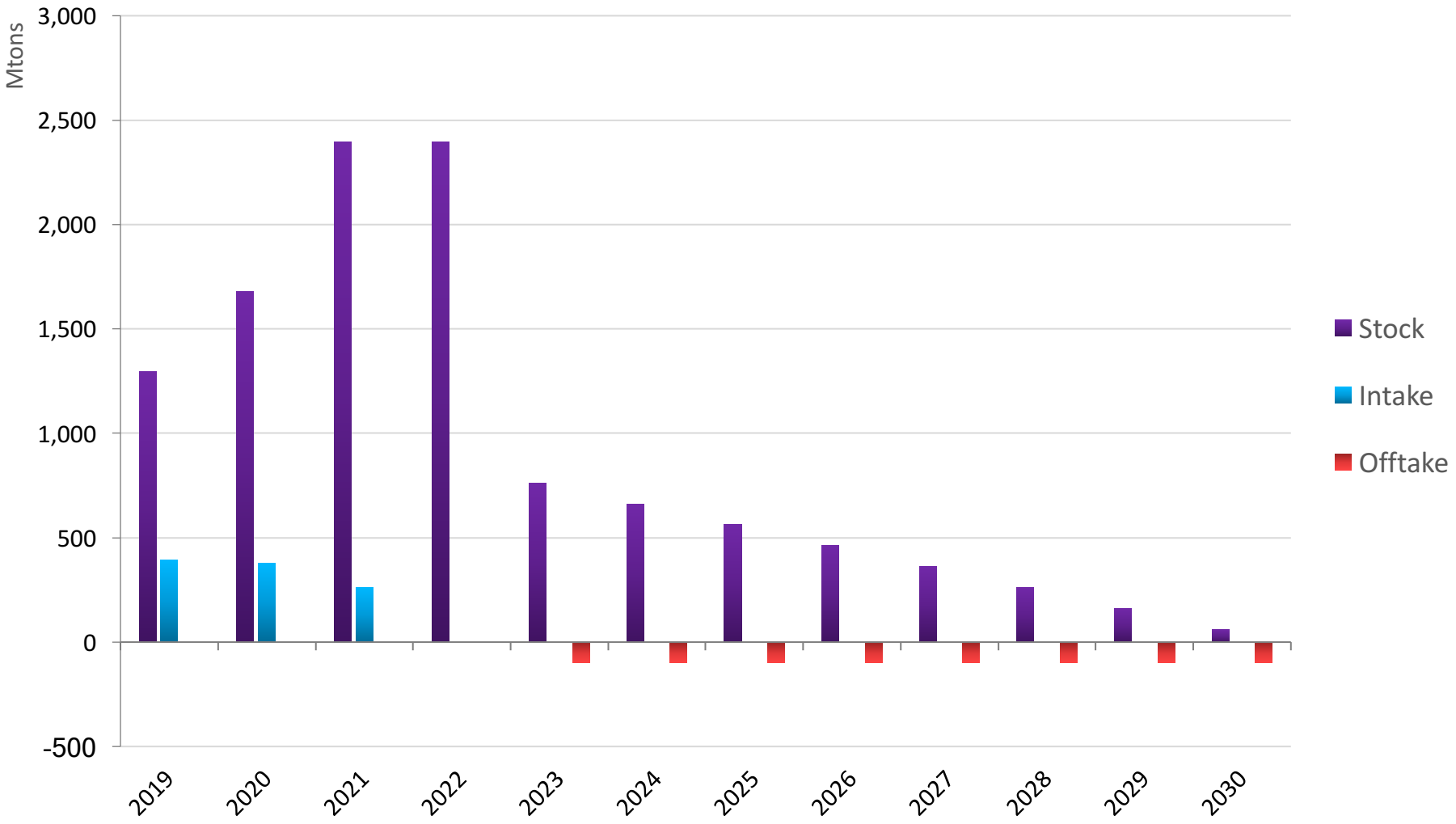
Source: modelling commissioned from Nomisma Energia

Scenario C: cumulative surplus/deficit



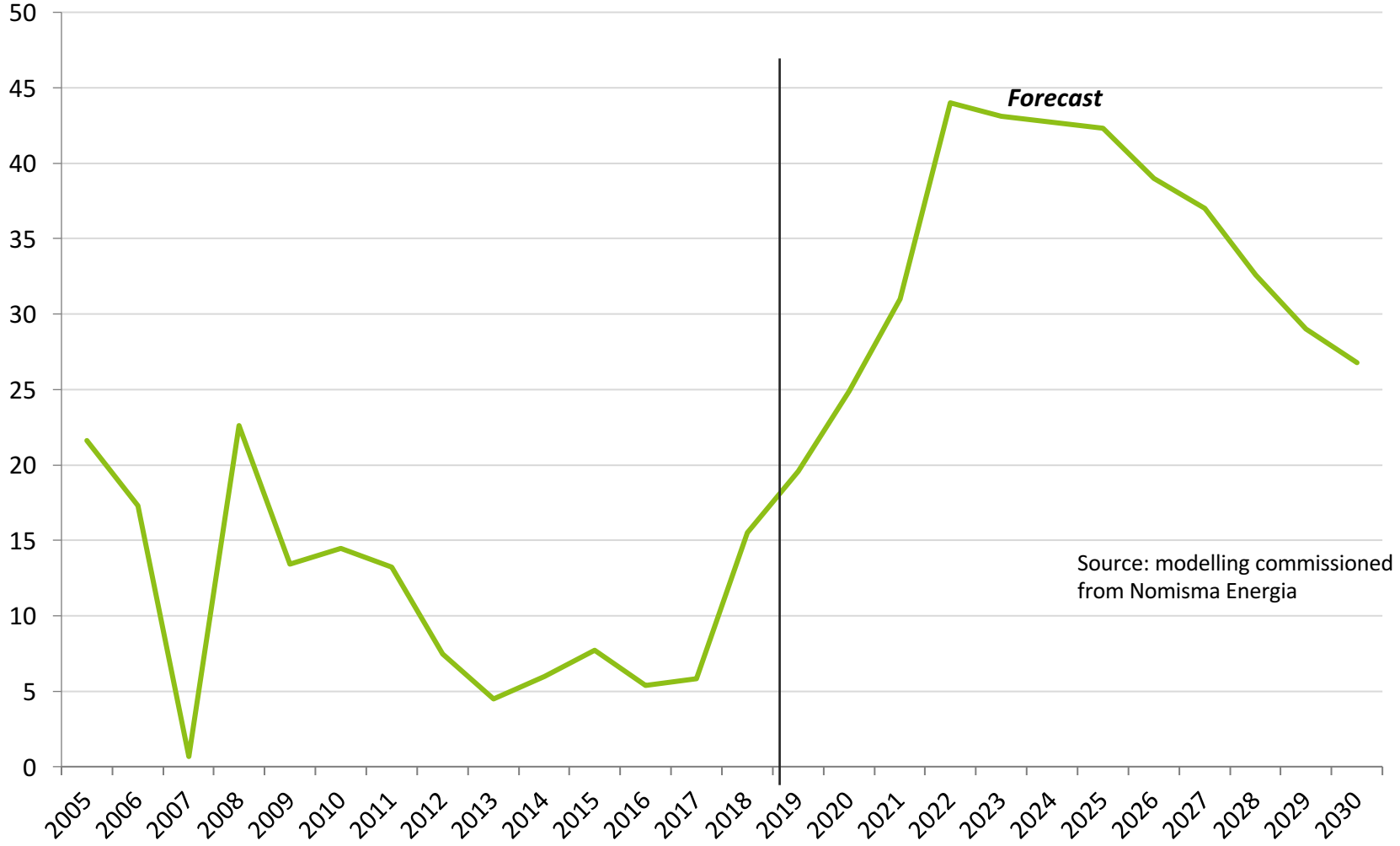
Phase 4 will see a rapid decrease of the surplus due to the introduction of the MSR which will remove over 1 billion EUAS in the first three years. After 2025, the rise of renewables and the reduction of energy consumption due to energy efficiency will drive emission reductions.
By the end of 2030, the surplus will rise to nearly 340 million tonnes.

Scenario C: MSR - stock, intake and offtake



Source: modelling commissioned from Nomisma Energia

Scenario C: EUA prices (€)



The price of EUAs is expected to peak in 2022, reaching 44 €/ton on the back of the supply reduction. After 2025, the rise of renewables and the decommissioning of some coal plants will push prices down to below 27 €.