



Market Stability Reserve – how it should be improved

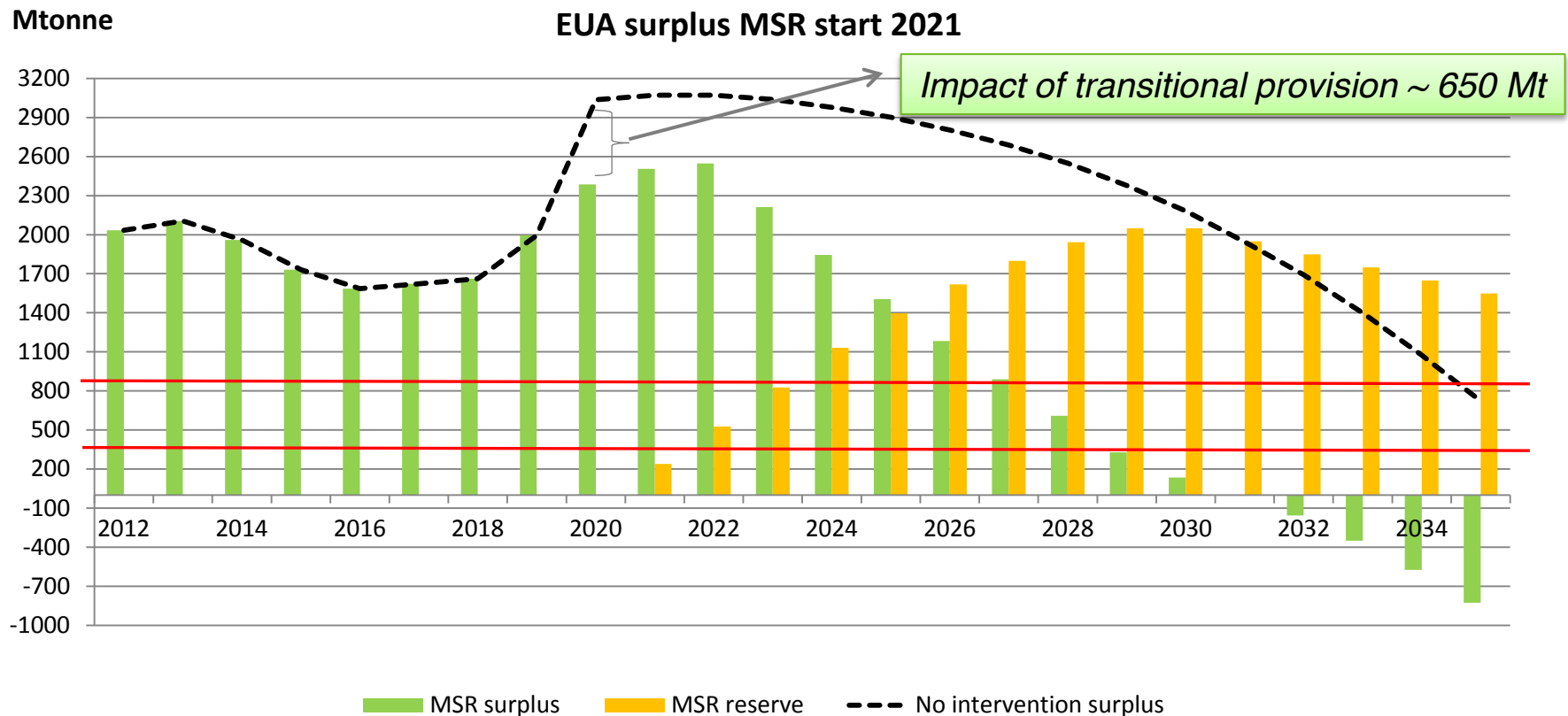
Fortum, December 2014

Simulation of MSR: Massive surplus 2020-2023 despite MSR

Without MSR market will be largely oversupplied until post 2030

Assumptions:

- ✓ CAP based on EC proposal of linear reduction factor of 2.2% from 2021 (40 % GHG reduction target 2030)
- ✓ Supply including allocation leftover*; 310 Mt and NER; 160 Mt in 2020
- ✓ Emissions based on European GDP growth of 1.5% and 2020 EU RES-E** target fulfilment

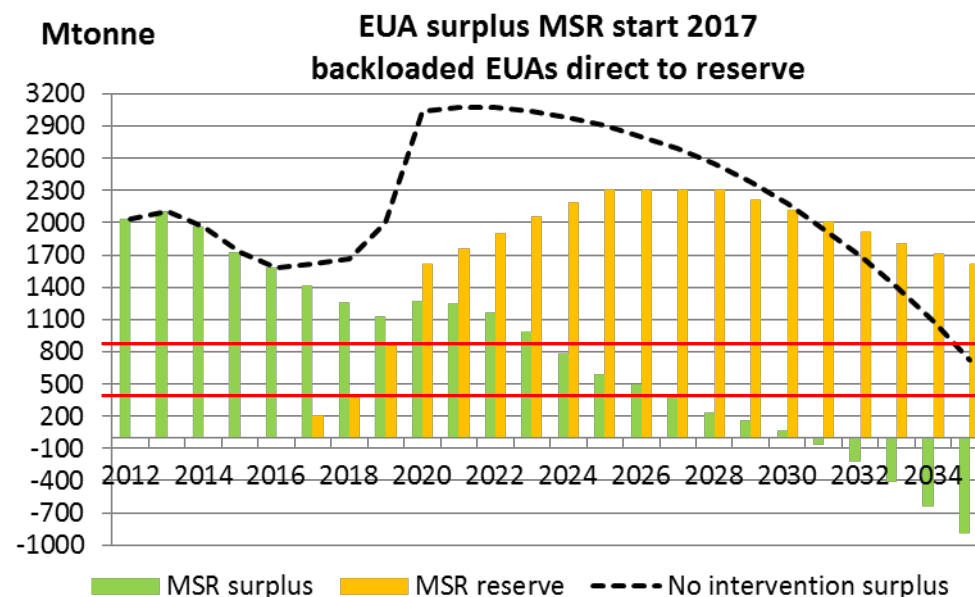
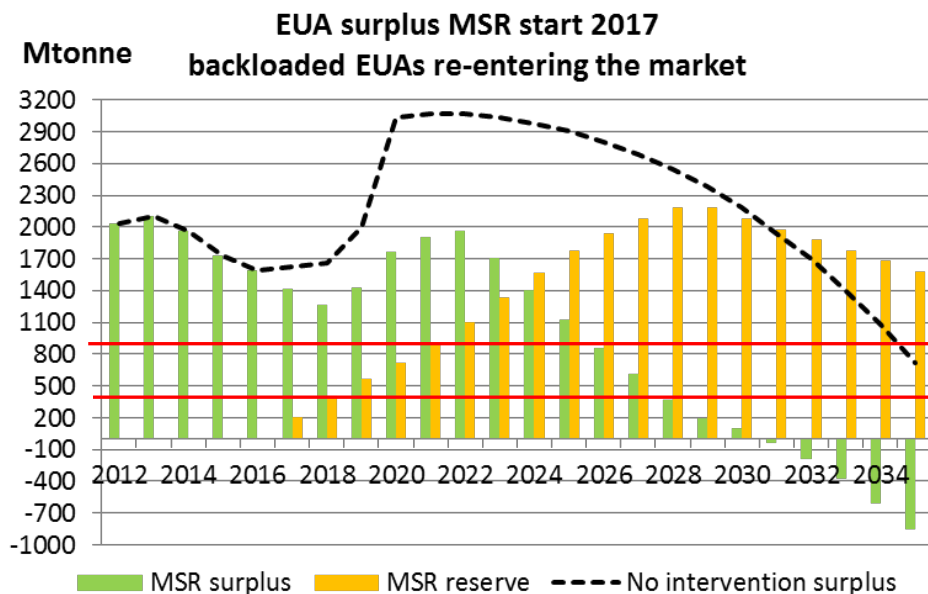


* Free allocation which is not handed out due to installations “that ceased its operations” (or “partially cease to operate or significantly reduce their capacity” (is auctioned in the final year of each trading period.

** According to the NREAP (National Renewable Allocation Plan)

Timing is the key: MSR to be implemented preferably by 2017

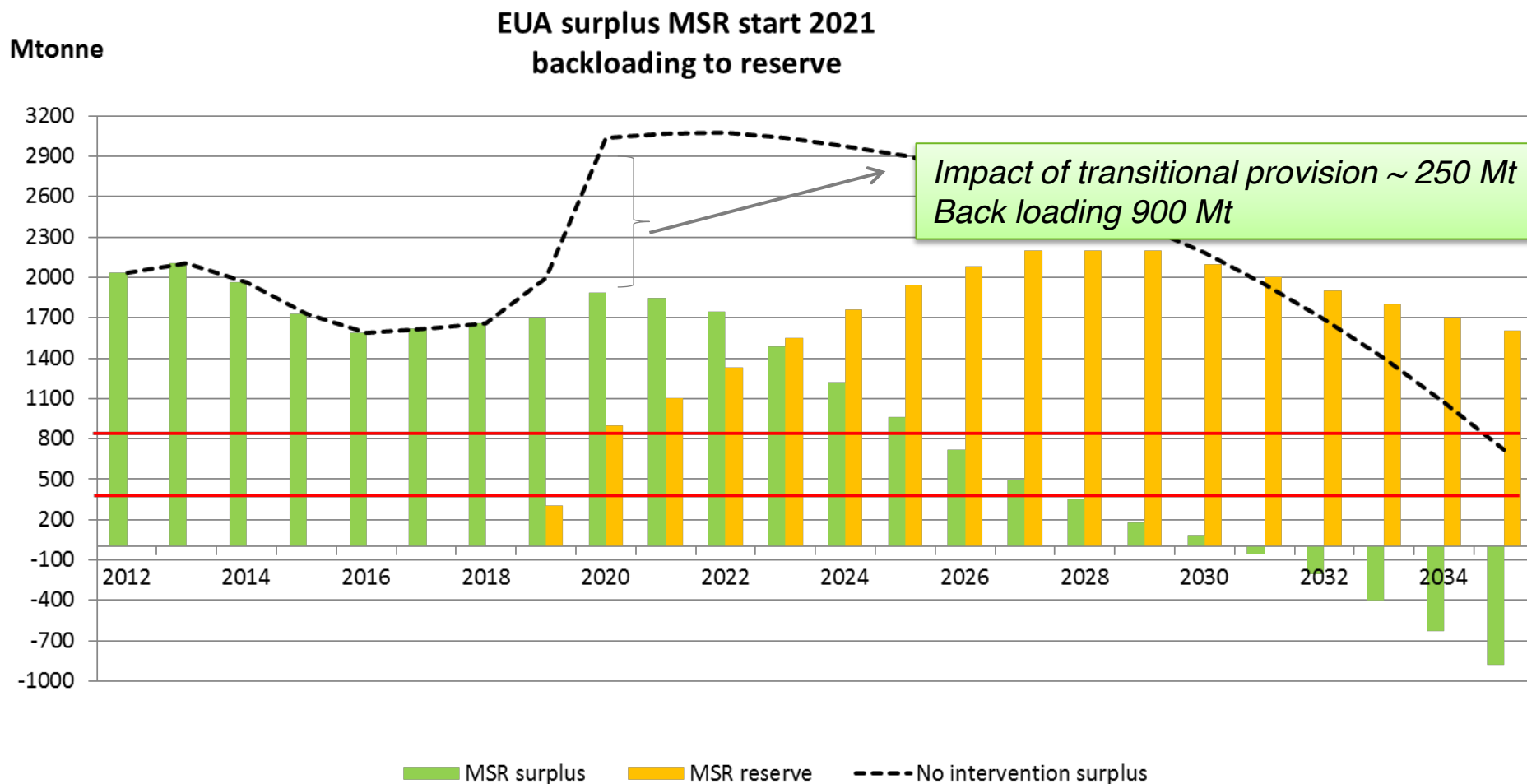
If backloaded volumes are returned in 2019-2020, ETS could collapse



- ✓ If backloaded allowances are returned in 2019-2020, the ETS could collapse, due to an unprecedented size of the market surplus. We see a risk that national and more expensive measures will be implemented to reach the Climate targets if ETS fails to deliver. In order to restore an efficient price signal from the ETS MSR needs to start in 2017 with backloaded EUAs put directly to the reserve.
- ✓ The EC has proposed a surplus target range of 833-400 Mtonne to ensure liquidity/accessibility to allowances, when markets are tight, and safeguarding against distortion of the pricing needed for long-term efficient climate abatement, if the surplus grows too big.
- ✓ MSR implemented from 2021 is not enough to strengthen the ETS, efficient pricing will still need to wait until 2026-2027, since the surplus will stay well above the preferred range until the mid 2020's. An implementation of MSR in 2017 will give a smoother transition between phases 3 and phase 4, and reduce the annual volumes moved to the reserve. In the 2021 case approx. 60 % more allowances will annually be moved to the reserve compared to implementation in 2017.

MSR start in 2021 with backloading to reserve not enough

Surplus will stay elevated to mid 2020's and hinder efficient ETS steering



Sandbag forecast a 4.5 billion surplus by 2020

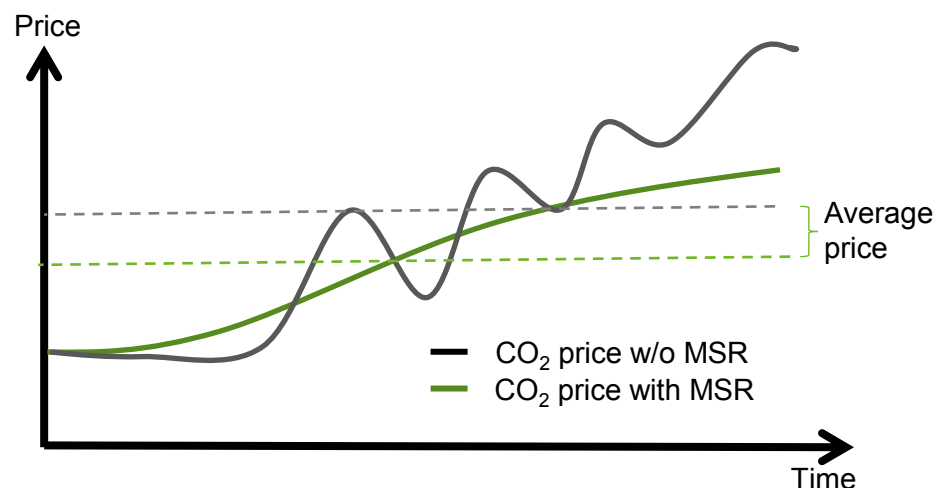
The forecast is in our view a likely scenario if power demand remains low

- ✓ Sandbag forecast an ETS surplus of 4.5 billion by 2020, clearly higher than our forecast that suggest a 3 billion surplus. The **main difference being a less optimistic view on future European power demand than Fortum have.**
 - ✓ **Sandbag believes European power demand will decline with 1 % per year 2014-2020** compared to our more hopeful view that overall demand will increase by 0.6 % per year during the same period. However **we might be too optimistic, especially given the weak power demand development between 2010-2014 and the renewed political discussions on energy efficiency targets.**
 - ✓ We share Sandbag's view that **many external analyst seem to overestimate the overall emissions between 2014-2020.** Due to high RES penetration and relatively low power demand the EUA surplus will be magnified more than many expect.
 - ✓ In our view the Fortum EUA balance forecast for 2020 (3 bln) is rather conservative and given the current economic backdrop as well as the progress on energy efficiency we see the Sandbag analysis (4.5 bln) as credible. We would **recommend the EC and other important decision makers to prepare for an EUA surplus somewhere in between the Fortum and the Sandbag forecast,** without an early implementation of MSR.
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MSR: lower price volatility and long-term decarbonization costs

- ✓ MSR strengthens the price signal of the ETS by reducing price volatility and price risk – benefitting all market participants
- ✓ MSR enables restoring a linkage between carbon prices and long-term fundamentals
- ✓ MSR smoothens the price trajectory around 2020 and enables earlier re-establishment of price discovery based on the long-term CO₂ abatement costs
- ✓ By triggering earlier abatement, MSR reduces long term decarbonisation costs and prevents expensive carbon lock-in.
- ✓ Various external analyses^(*) and price scenarios available with varying assumptions, but with consistent outcome:
 - According to ICIS Tschach, w/o MSR price crashes down to 5 € for several years from 2020 onwards, due to backloaded allowances returning the market
 - Point Carbon expecting price ~5 € w/o MSR by 2020
 - At these price scenarios investments needed to reach 2030 targets will not be realised

Schematic illustration of the price behaviour with and w/o MSR over time

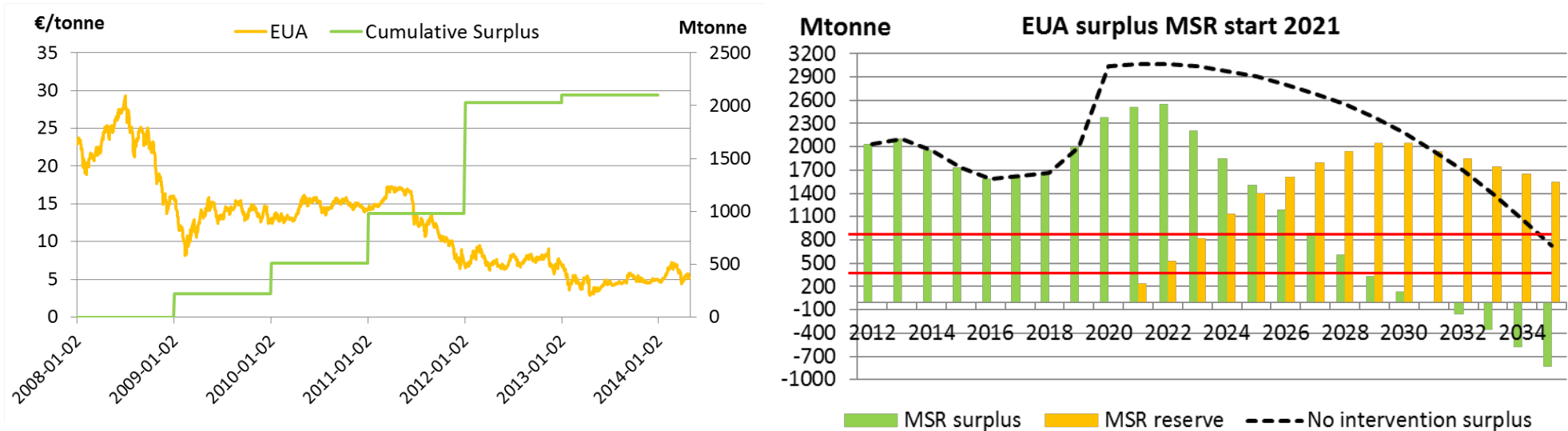


An early implementation of MSR (~2017) will establish a credible outlook for the investments needed to meet the 2030 target.

^(*) For external analyses, see e.g. The EU ETS Market Stability Reserve (MSR) – A White paper for an optimised approach, ICIS Tschach Solutions, 26 May 2014

Cumulative surplus to be reduced to restore a credible EUA price

- in a balanced market prices set by emission abatement cost



Clear negative correlation between cumulative surplus and price of EUAs

- ✓ The growing surplus has since 2008 continuously pushed prices lower
- ✓ As soon as the market is re-balanced via the MSR, the EUA price will again be set by the long-term cost of emission abatement (dependent on fuel cost, technology development and possible parallel support schemes)

Exact estimation of the impact of the MSR on future EUA price complex

- ✓ Several external factors impacting the cost of emission abatement
- ✓ Tightening emission reduction targets imply more expensive abatement and EUA prices should appreciate
- ✓ Cost for RES is decreasing rapidly and this should have a negative impact on EUA prices
- ✓ Historic EUA prices and the past surplus should together with the projection of the future surplus give some guidance on price discovery until the mid 2020's

Key considerations:

- ✓ The main weakness of the Commission's proposal is the implementation time (2021). The mechanism should be implemented already in 2017, to avoid a huge surplus and a potential collapse of prices ~2020 and to enable a smoother price development between phases 3 & 4.
- ✓ The backloaded allowances shall be placed directly into the reserve or set-aside, otherwise the 900 million allowances will hit an already oversupplied market at the same time as additional NER volumes and leftover allocation* is brought to the market in 2020.
- ✓ Shortening of the reaction-time – from the surplus generation to the change of auctioned volumes (now 2 years) – has to be considered. We would prefer altering volumes already in the 2nd half of the year when the volume of cumulated allowances in circulation is published.
- ✓ MSR will lower price volatility and long-term decarbonization costs. It will re-balance the market enabling the EUA price again to be set by the long-term cost of emission abatement.
- ✓ MSR is a technical change of the EU ETS and should be handled separately from the 2030 package.
- ✓ Industrial competitiveness and carbon leakage have to be carefully addressed in the MSR implementation.

* Free allocation which is not handed out due to installations “that ceased its operations” (or “partially cease to operate or significantly reduce their capacity” (is auctioned in the final year of each trading period.

Further information

For additional information, please contact:

Kari Kankaanpää, Senior Manager, Climate Affairs

Tel. + 358 50 4532330, kari.t.kankaanpaa@fortum.com

Hans-Erik Wiborgh, Market Analyst

Tel. +46 73 6287489, hans-erik.wiborgh@fortum.com



Background material

Industrial competitiveness and carbon leakage to be addressed

- ✓ For the European industry, the EU climate target and ETS introduce a carbon cost that industry outside the EU is not yet facing.
- ✓ As long as we lack a global regime and carbon constraint, European industry has to be compensated for some of the cost associated with the climate policy.
- ✓ A more stable EUA price development induced by MSR will help industry's long-term planning.
- ✓ The direct cost can be managed by continued free allocation within the carbon leakage list. Measures to support the industry shall be based on a careful, fact-based assessment and realistic price projections. In the future, a more dynamic allocation based on the real demand could be considered.
- ✓ The indirect cost due to increasing energy prices should be compensated based on EU level criteria. The ex-post compensation should be handled so that the functioning of the ETS itself is not disturbed and that there is no compensation competition between member states.
- ✓ Funding for compensation could originate from auctioning revenues or VAT on electricity, as these revenues increase together with rising carbon and electricity prices. An EU level compensation fund similar to NER300 could be one option.

MSR is a technical change of the EU ETS

- ✓ MSR is a technical, rule based change of the ETS, making political interventions like backloading and frontloading unnecessary.
- ✓ Backloading alone is not enough to strengthen the ETS. Return of backloaded allowances into the market in 2019-2020 would again weaken the market.
- ✓ In order to restore the EU ETS as the main instrument of the EU climate policy, MSR together with backloaded allowances put into the MSR reserve or alternatively a permanent set-aside of backloaded allowances is required well before 2020. Besides, the agreement on an ambitious 2030 greenhouse gas reduction target should be reached as soon as possible and the annual linear reduction factor of the ETS has to be adjusted accordingly.
- ✓ MSR is a distinct proposal from 2030 package and should be handled separately.



1) A Market Stability Reserve: Objective

- ✓ The European Commission has proposed a Market Stability Reserve (MSR) to be in operation from 2021.
- ✓ The aim of the MSR is to reduce short-term price volatility, making **carbon prices more strongly driven by mid and long-term emission reduction objectives** rather than short-term demand/supply fluctuations.
- ✓ Stable carbon price expectations should **benefit investment-climate and facilitate investment decisions for all stakeholders** exposed to carbon prices.
- ✓ The **reserve works both way**: it will remove allowances in an over-supplied market and re-inject them in an under-supplied one.
- ✓ A **MSR will make the EU-ETS more resilient** to any potential future large-scale event that severely disturb the demand/supply balance.

We assess the proposal positively, however we support an earlier start of the mechanism by 2017. This would allow to time the introduction of the Reserve with the return of back-loaded volumes – eliminating otherwise sharp swings in annual balances over 2019-2022.

2) A Market Stability Reserve: the structure

- ✓ **Total allowances in circulation is the key data point** around which the mechanism is structured. In practice, it is a measure of the cumulated surplus in the system

Total allowances
In circulation in year X

=

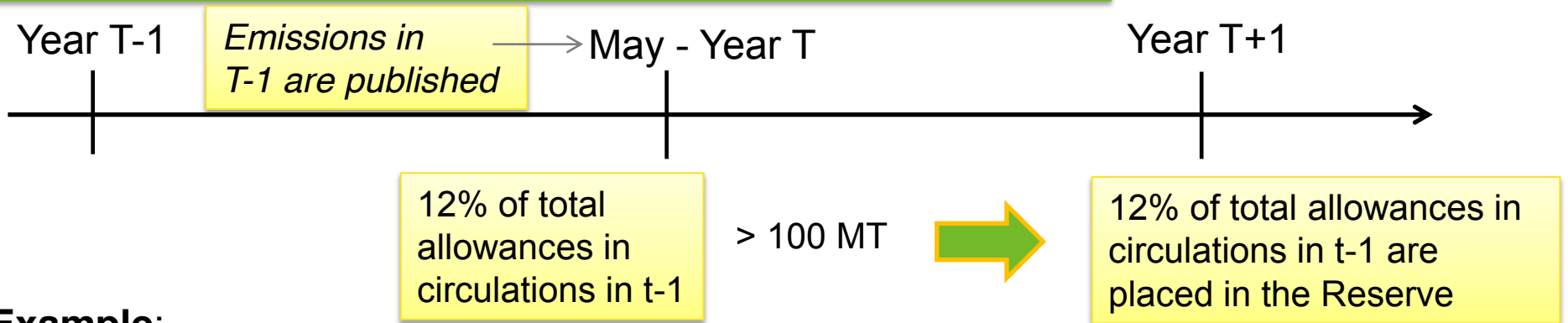
EUAs issued 2008 till X + Intern. Credits used
2008 till X – Verified emissions 2008 till X –
EUAs in the MSR in year X.

- ✓ The **mechanism implicitly defines the 400-830 MT band as an optimal level of surplus** in the system. The figures are within reasonable ranges of what stakeholders have suggested
- ✓ Any **adjustment** (from an over-supplied or under-supply situation towards the optimal band) **is engineered to occur gradually.**
- ✓ The **withdrawal/injection of allowances into the Reserve is governed by an automatic-rule.**
- ✓ The **operation of the MSR is not limited to the fourth trading period.** The Reserve will be carried forward to each subsequent trading period.
- ✓ The **flow of allowances** from/to the Reserve **will impact auctioned volumes not free allocations**
- ✓ A focused review of the mechanism is set to take place in 2026.

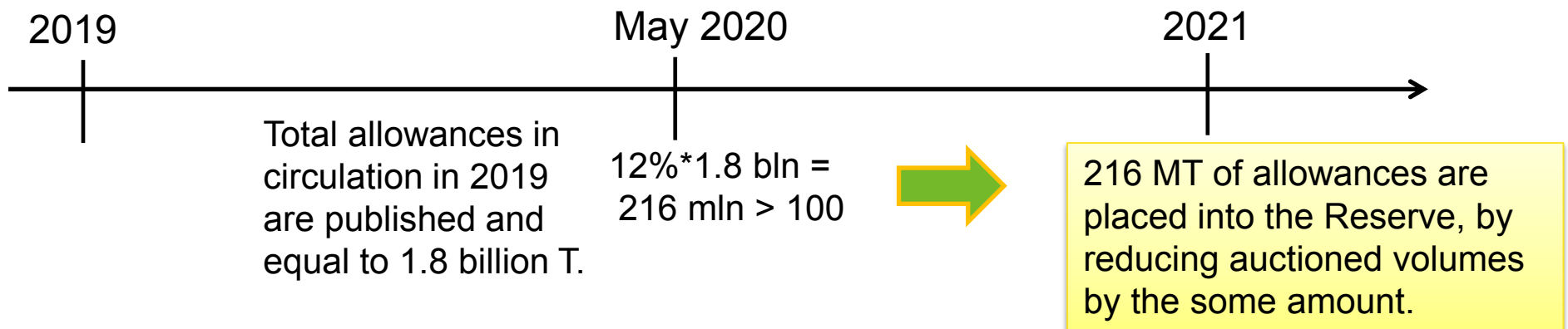
3) A Market Stability Reserve: the rules

The mechanism is governed by 2 basic rules + an emergency rule

1) Rule to place allowances in the Market Stability Reserve



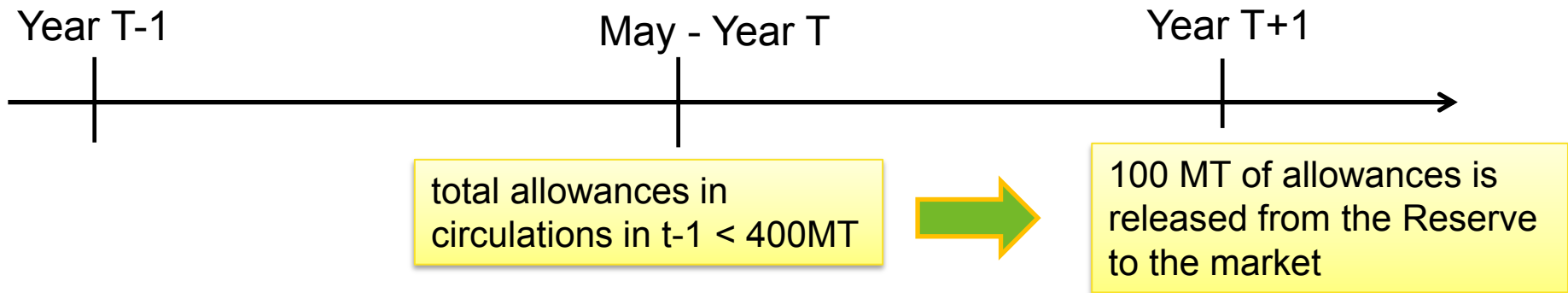
Example:



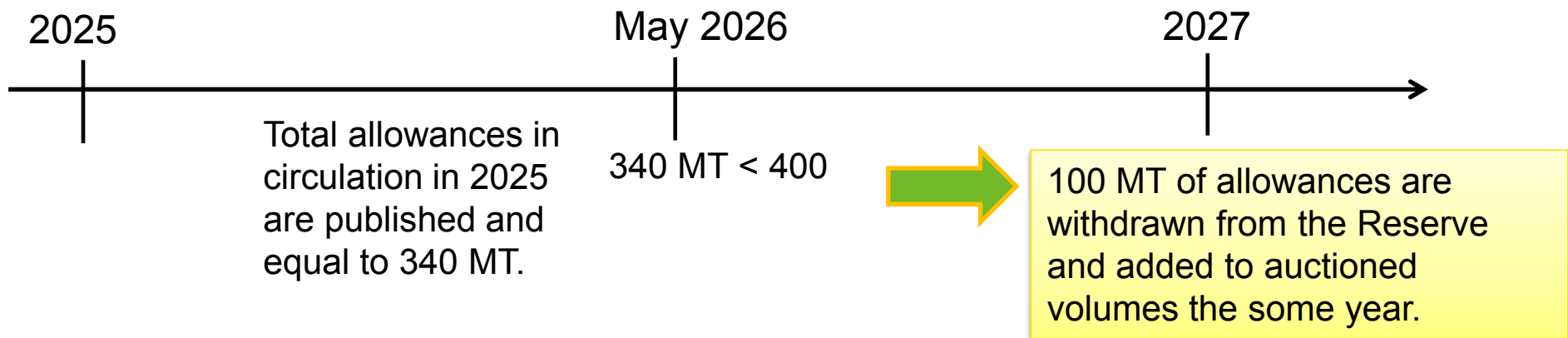
3) A Market Stability Reserve: the rules

The mechanism is governed by 2 basic rules + an emergency rule

2) Rule to withdraw allowances from the Market Stability Reserve



Example:

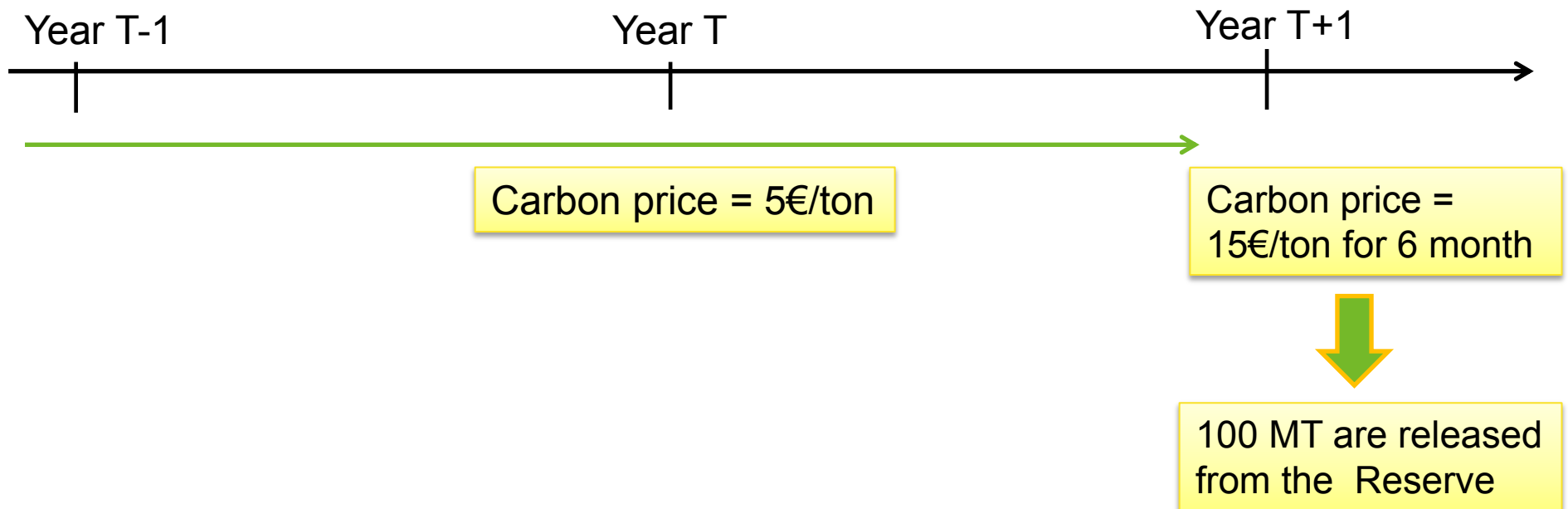


3) A Market Stability Reserve: the rules

The mechanism is governed by 2 basic rules + an emergency rule

3) Emergency rule for price-containment

In any year: if for 6 consecutive months the allowance price is higher than 3 times its average value over the previous 2 years, 100 MT are removed from the reserve and re-injected in the auctions of the current year



4) A MSR: Transitional provisions

If the auctioned volumes in 2020 > 130% average auction volumes in 2021-2022,
The difference should be distributed equally over 2020-2022

This rule is meant to avoid potential price disruptions associated with unique supply-side changes due to the end of a trading phase. In particular is meant to smooth out the impact of:

- *Allowances remaining in the new entrants reserve (to be auctioned)*
- *Allowances not allocated due to closures (to be auctioned)*
- *Allowances not allocated under the derogation for the modernisation of the electricity sector (to be auctioned)*
- *Back-loading return*

Example:

Auctioning volumes (MT)	2020	2021	2022
Initial	1580	960	940
Adjustment	-420	210	210
Final	1160	1170	1150



$$1580 > 1.3 * 960$$

$$1580 - 960 = 620$$

$$1/3 * 620 = 207 \text{ auctioned in 2020}$$

$$1/3 * 620 = 207 \text{ auctioned in 2021}$$

$$1/3 * 620 = 207 \text{ auctioned in 2022}$$

Next generation energy company

