Assessing options for sructural reforms on the EU ETS

Proposed Solutions: criteria and reasons for selection

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CEPS Carbon Market Forum (CCMF)
Brussels, February 1, 2013

“Houston, we have a problem”

- Annual supply is way too excessive compared to short and mid term demand preventing the proper functioning of the market

  - Price discovery, the objective of the ETS, is not happening: current price is not a proxy of the marginal cost of abatement

  - Price volatility increases excessively, as prices are purely speculative

  - Market participation decreases both from compliance operators and banks, increasing transaction costs

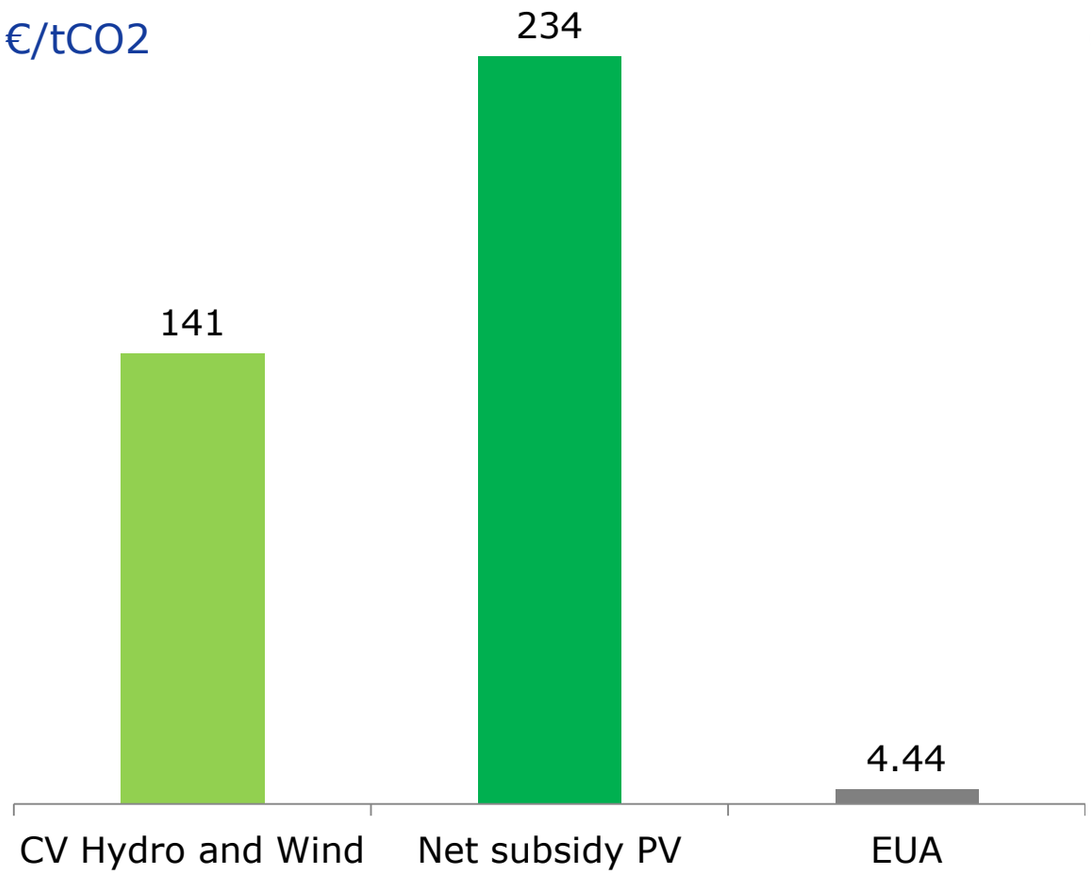
- Effective annual allocation of the cap is key to the proper functioning of the market, otherwise why not dumping 50 billion allowances upfront?

Shaping a structural revision of the EU ETS scheme

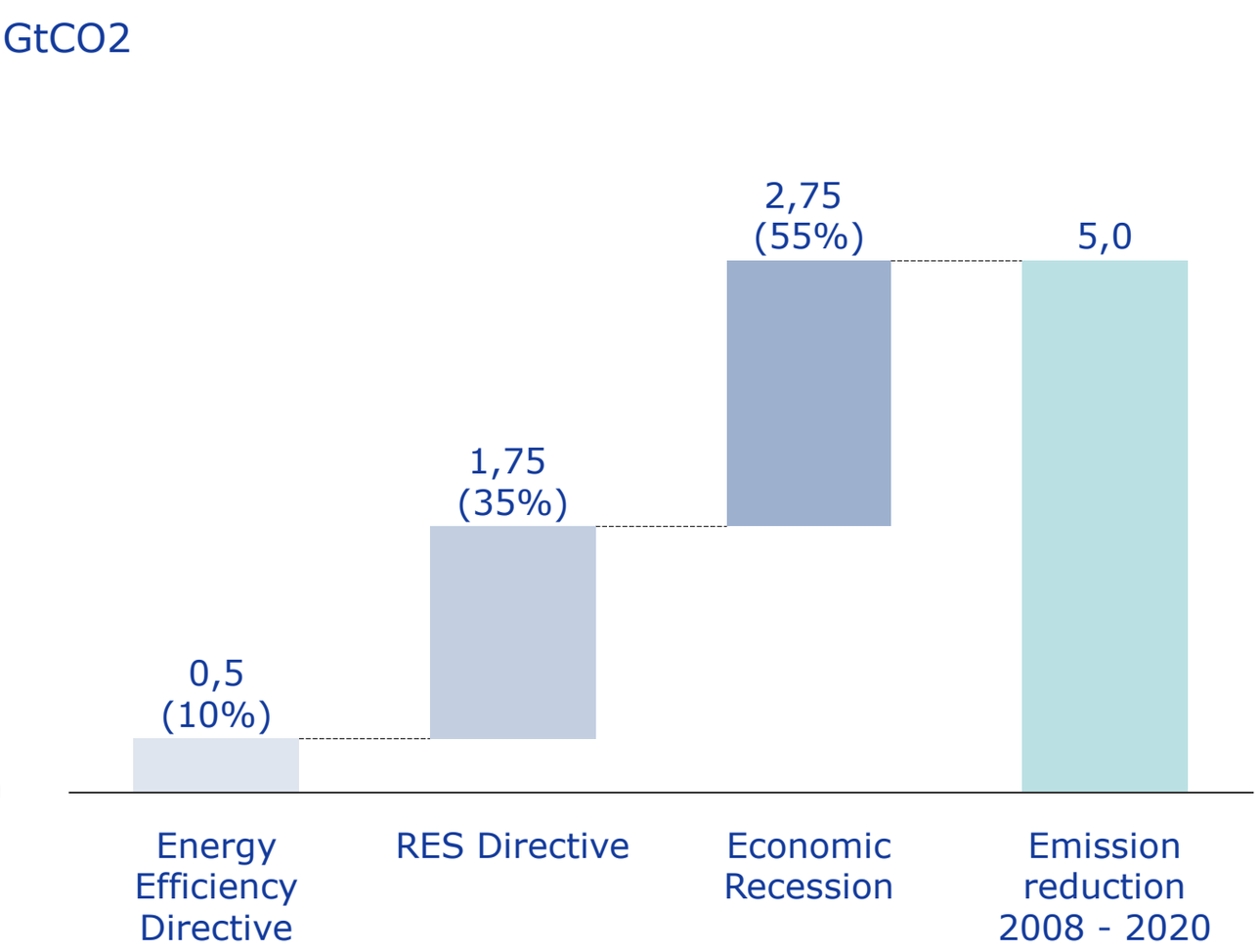
Where is the problem?	Description	Feasible solutions
1. Targets not aligned with ambition	According to the **current reduction pathway** EU ETS sectors will reach 71% in 2050 missing: - The 2°C target agreed in Copenhagen - The objectives recommended by the EU 2050 Low Carbon Roadmap	The reduction trajectory has to be modified coherently with long term reduction goals assessing the impacts of different linear reduction factors
2. Excess of liquidity	The **excess of liquidity** on the market due to the recession is exacerbated by the mismatch between Demand (affected by economic cycles) and Supply (rigid, ex ante fixed)	Introduction of transparent, predictable supply adjustment mechanisms, e.g. : - Surplus bound - Intensity based emission
3. Policy overlap	The effects of **policy overlap** contribute in lowering the demand of allowances delivering abatements at higher costs	Need for a **comprehensive Climate Energy policy post 2020 preventing** overlapping effect

Overlapping policy instruments
EU Energy Climate policy framework

CO2 abatement cost
(the case of Italy)



Expected emission reduction



Hypotheses:

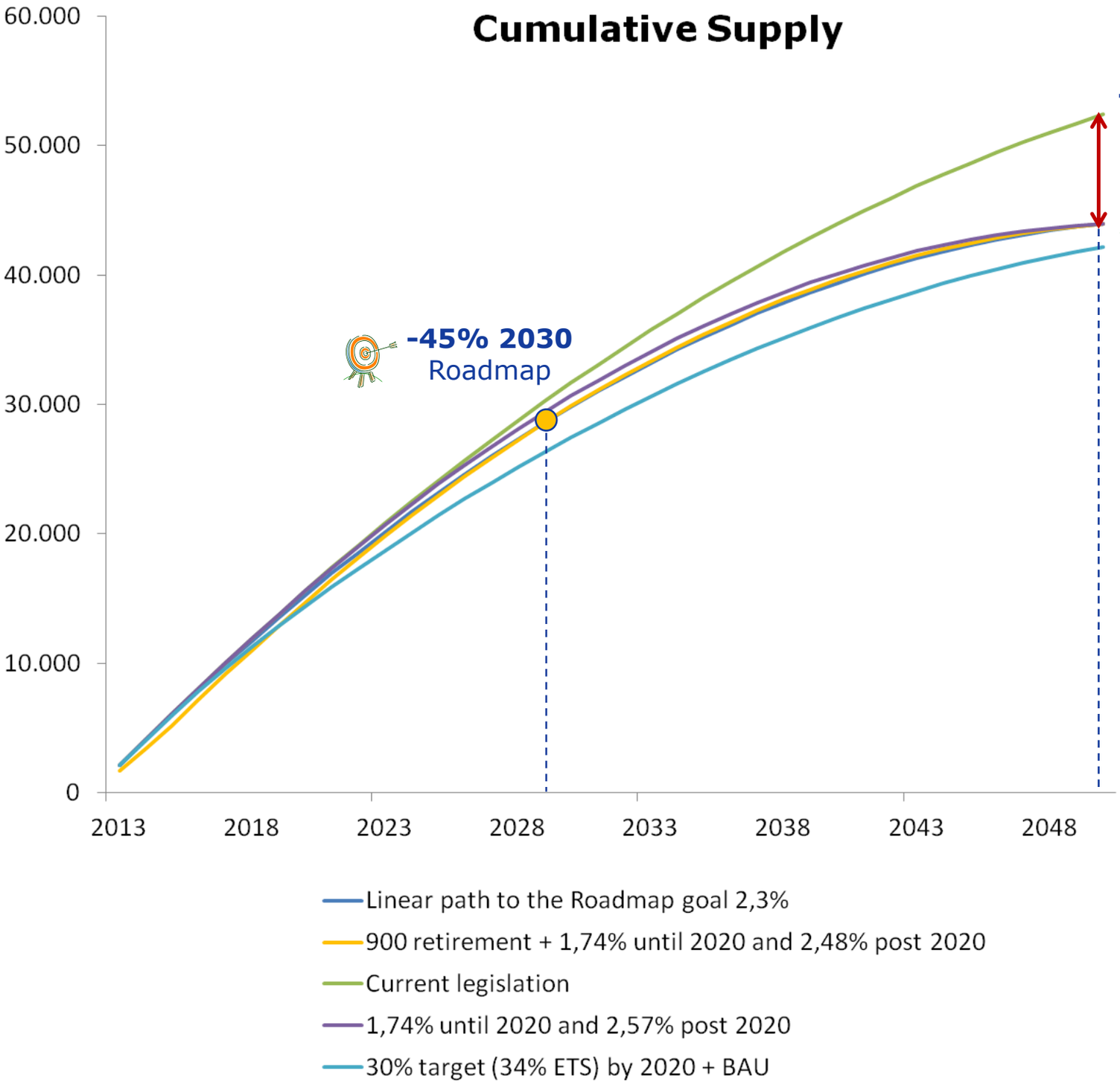
- Specific carbon intensity of a CCGT equal to 0.36 tCO2/MWh
- Value of Green Certificate (CV) for Wind and Hydro equal 74€/MWh (average 2012)
- Value of net incentive to PV (H2 2012- V Conto Energia (FIT) – average PUN) equal to 82€/MWh

Source:Point Carbon, Dec 2012

Ensuring coherence of the total cumulative supply with the 2050 Roadmap

Preliminary

$MtCO_2$ eq

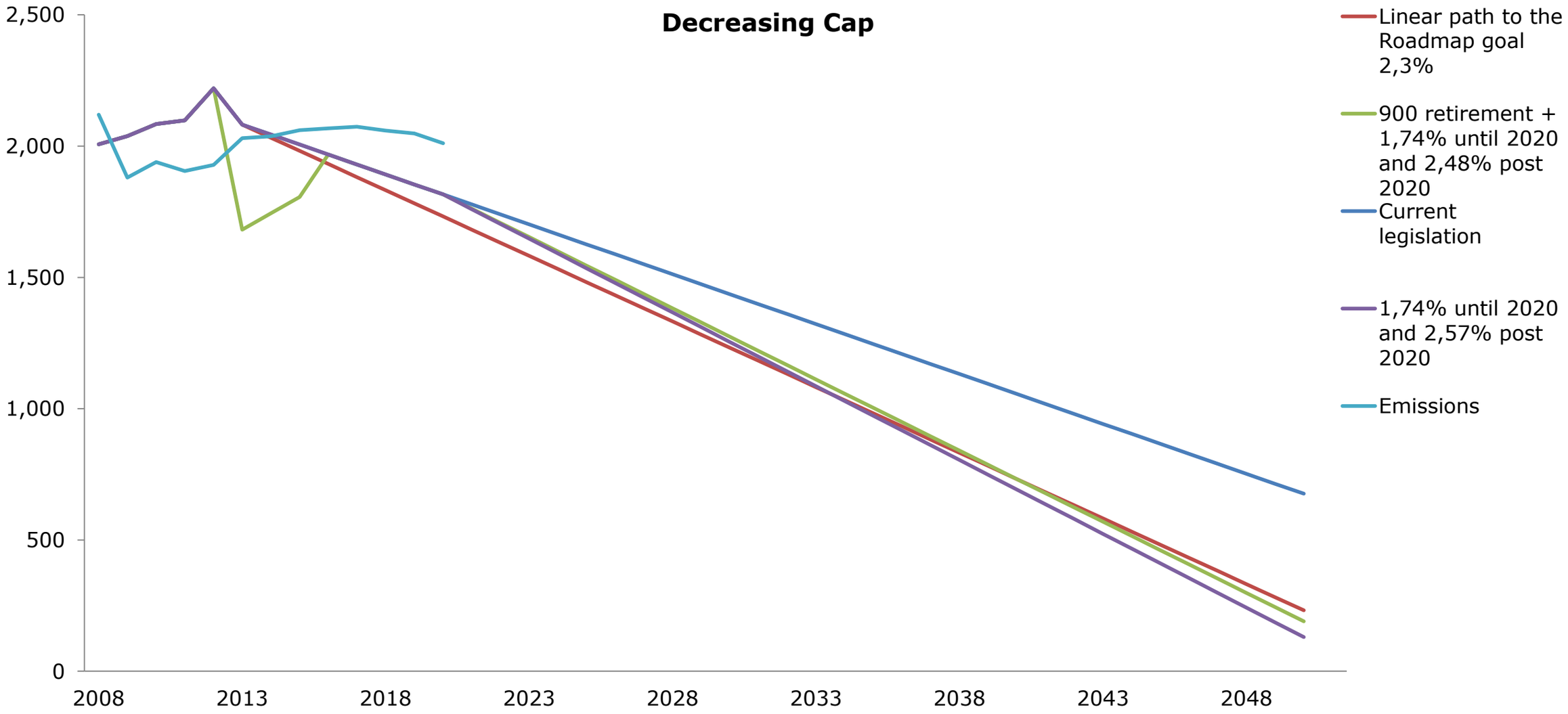


- Current legislation implies a **cumulative cap of about 52 billion EUAs** from 2013 to 2050
- In order to stay on the Roadmap trajectory we need to **decrease that total supply to about 44 bn,** equal to a reduction of more than **8 billion EUAs**

Preliminary

Assessing different scenarios for cap reduction

$MtCO_2$ eq



- In order to stay on the Roadmap trajectory we need to introduce a linear reduction factor of **2,3%, starting from 2013 to deliver -46% in 2030 and -90% in 2050**
- In alternative to the linear reduction starting in 2013, we can imagine **a one-off cancellation of 900 million EUAs** (about 10% of the total adjustment needed), and then to introduce a **linear reduction factor equal to 2,48% from 2020**

Flexibility in the supply-side management
Options for discussion

Supply side management	Rationale	Description	Pros
1. Based on the historical excess of liquidity	• The market naturally tends to have a surplus to enable hedging and intertemporal balance • The mechanism ensures to stay within an optimal range of market surplus	• If the cumulative surplus exceeds a maximum threshold in year (t) a fixed percentage of that surplus will be deducted from the cap of year (t+2) • If the cumulative surplus goes beyond a minimum threshold in year (t) the cap of the year (t+2) will be increased by a fixed percentage	• Based on ex post adjustments • Based on official data (year surplus) • Higher stability and predictability • Avoidance of politic and private pressures • Easy to implement
2. Based on a emission intensity target	• Decoupling decabonization effort from the economic cycles	• Each sector covered by the EU ETS will have a carbon intensity target in line with the objective of decarbonization • The amount of allowances for each sector will be calculated multiplying the production (ex post) for the emission intensity target (which will decrease overtime) • The overall supply of allowances will be subject to a minimum and a maximum thresholds to ensure coherence with the long term reduction goal	• Based on ex post adjustments (ex post official data on production) • Higher stability and predictability of the system • Avoidance of politic and private pressures • Applicable also to industrial sectors

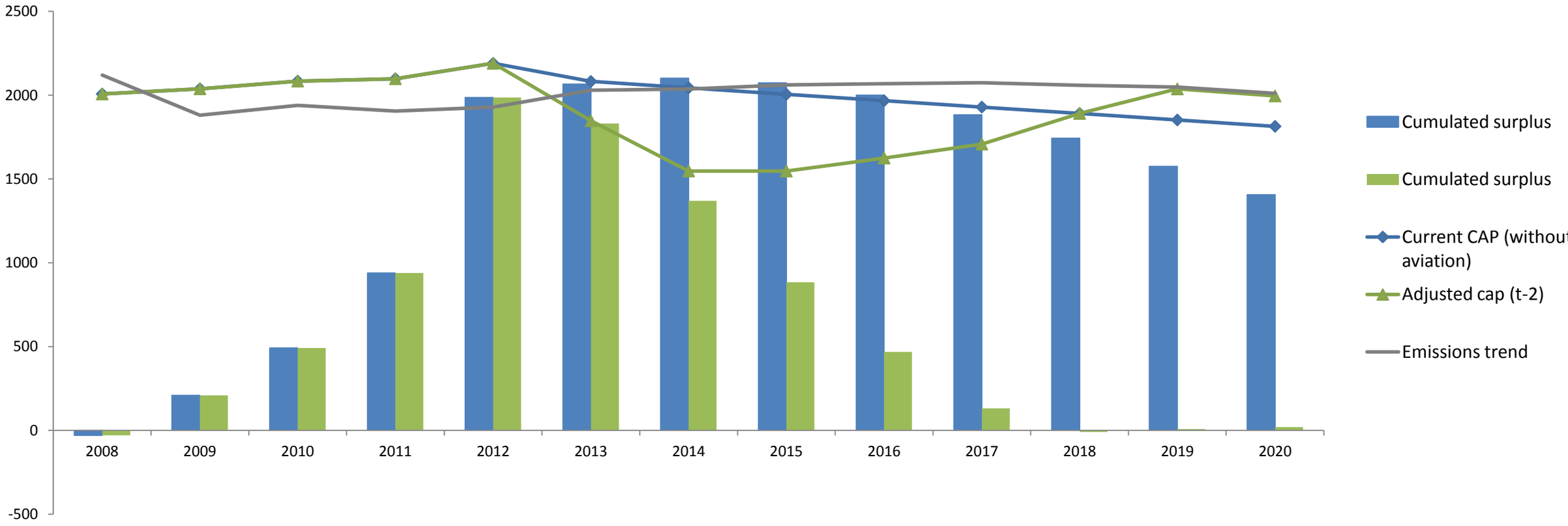
Preliminary

Flexibility in the supply-side management

1. Ex post supply adjustment based on clearly and pre-defined rules

- **In case of market unbalance caused by a huge oversupply:**
  - Threshold for intervention: (cumulative surplus year (t -2) – cap reduction expected (t-1) > 40% Cap year (t)
  - Cap Adjustment mechanism: Revised Cap (t+2) = Cap(t+2)' = Cap(t+2) – (1/4) * Cum. Surplus (t-2)

- **In case of market rebalance :**
  - Threshold for intervention Cumulative surplus year (t-1)<10% cap year(t)
  - Cap Adjustment mechanism: Revised Cap(t+2) = Cap(t+2)' = Cap(t+2) + 10% * Cap(t+2) (granted that there is a sufficient reserve)



- **With such ex post adjustment mechanism the cumulative surplus yearly will be kept between 10% and 40% of the cap expected for the 2nd year in advance, with a 20% resulting level after each adjustment**

- **Considering historical data, the 1st year in which the cumulative surplus is > than 40% of Cap(t+2) is 2011. this results in a change in a reduction of 2013 cap beyond**

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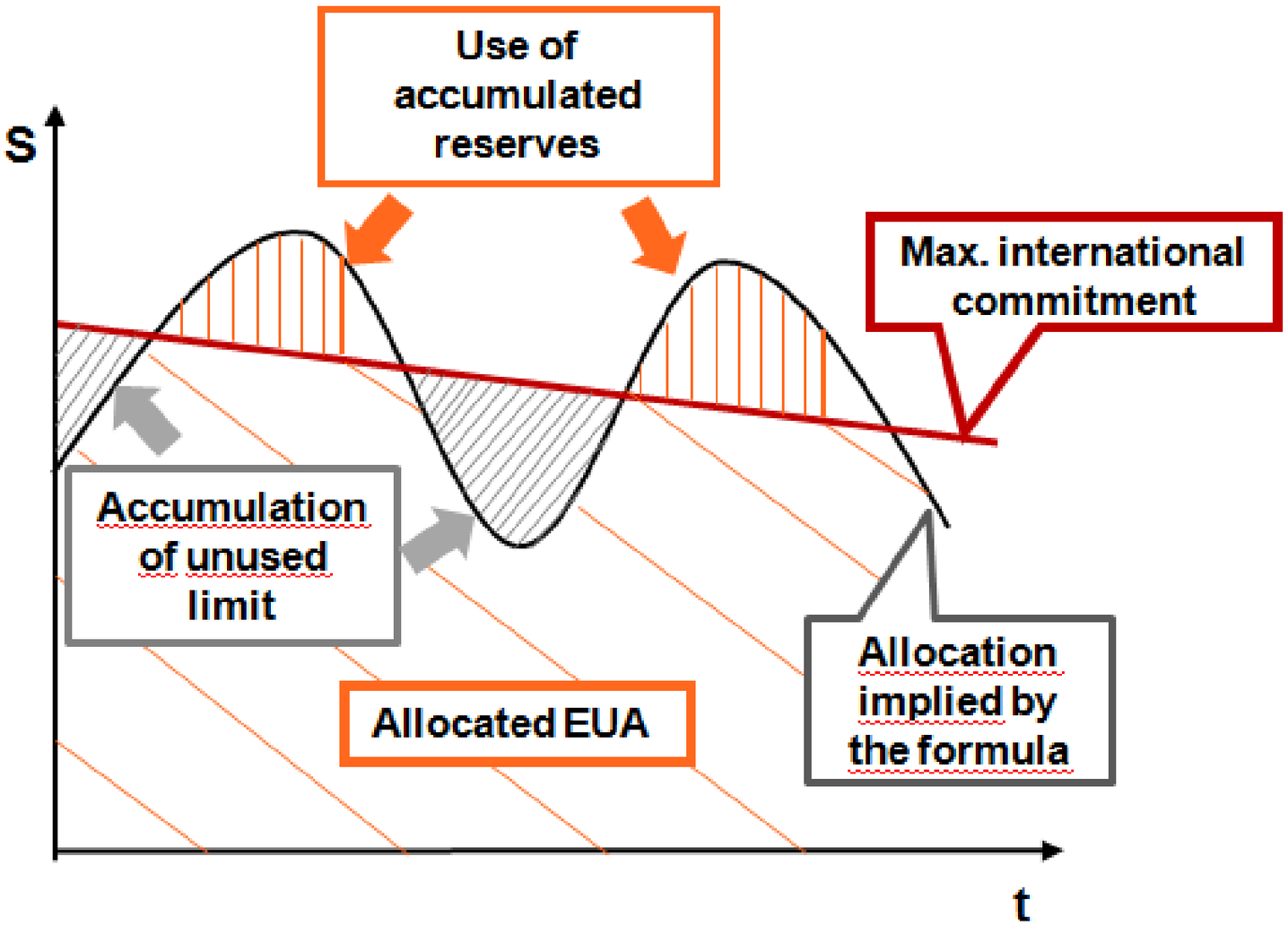
Supply-side management
2. CO2 intensity target based

- The limit is not applied in case of a GDP drop, the system stabilizes prices against collapse and it keeps the pace of decarbonization
- The stabilization is incomplete in case of a substantial GDP boom
- Several possibilities of implementation (i.e. reserve fund, automatic intensity adjustment)



- The Reserve fund:
  - A reserve fund is set up at the beginning (analogy of current NER)
  - The difference between the commitment and the auctionned volume would go to the fund in the recession
  - In case of a boom, volumes from the fund would be used up to its remainder

Preliminary

Supply-side management

2. CO2 intensity target based

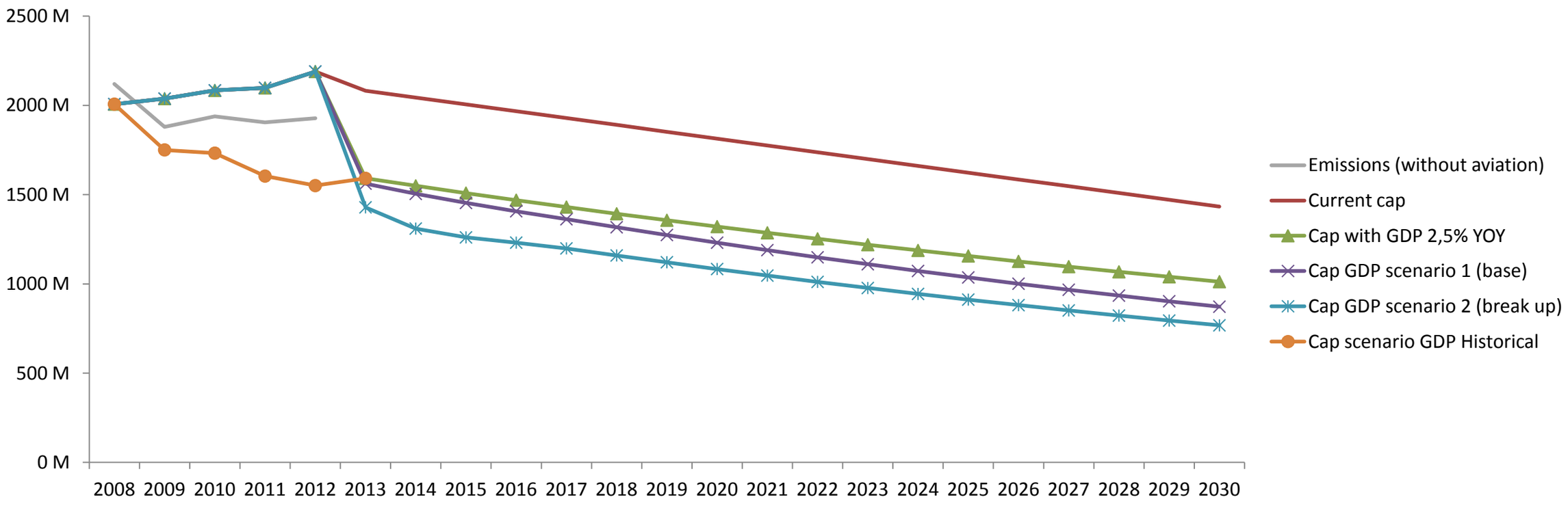
EMISSION VOLUME = PRODUCTION x EMISSION INTENSITY

CO2 intensity for every sector calculated using the ratio between allowances and real emissions in 2008 and multiplying this value for the ratio between emissions and production in 2008 for every sector

Starting Point Co2 Intensity Power sector: [Total cap 2008/Emissions 2008] x [Power sector emissions 2008/Power sector Production 2008]

For the following years **CO_2 intensity** will decrease linearly starting from the sectoral average carbon intensity with a reduiction of 5% YOY (or from a lower value in order to build up an initial Reserve)

Cap is defined with the following formula: Cap (t+1) = [**Prod. (t)** x **GDP estimated (t+1)]** x **CO_2 sector intensity**



Notes: Data sources: Historical Production and emissions by Bloomberg

With such ex post adjustment mechanism in the period 2009-2012 the total allocation sector would have been 1,7 Gton lower

Concluding remarks

- The EU ETS is on the brink of collapse, might it survive after 3-4 years at 2-3 euro prices?
- ETS targets need to be aligned with long-term objectives, including a short-term retirement of allowances for an immediate market rebalancing
- ETS role as the cornerstone climate policy tool shall be reinforced, ensuring that other policies do complement and enable the achievement of the climate objectives
- Supply-demand balance is key for proper market functioning, requiring a transparent, predictable mechanism to adjust regulated supply in the short term