PRELIMINARY
DOCUMENT FOR DISCUSSION

...cing flexibility in the EU ETS

...n for dynamic auction management

Working Document - May 15th, 2013 update

[redacted]

[redacted]ng a structural revision of the EU ETS scheme

Where is the problem?	Description	Possible solutions
1. 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
2. ETS 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
3. 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 on the basis of accumulated surplus

[redacted]echanism
[redacted]ilding blocks

Rationale

- Supply-Demand balance is key for proper market functioning
- The EU ETS needs a **transparent, predictable and dynamic mechanism to adjust the annual supply, without affecting the reduction pathway toward long term targets**

The concept of the "optimal surplus band"

- The **market naturally tends to have a surplus** to enable hedging and inter-temporal balance
- **Excessive level of market surplus affects prices and threatens the effectiveness of the scheme** in promoting short term abatements and long term investments in low carbon technologies
- The proposed mechanism ensures to stay within a sustainable range of surplus ensuring **price stability and predictability**
- **The level of sustainable surplus in the market is based on near-term auction schedule** to enable operators with "short positions" to manage the price risk of forward contracts. Current forward EUAs purchasing volumes are mainly associated with power sector's auction exposure. As other sectors will become increasingly exposed to auctioning, their forward contracting needs are expected to grow

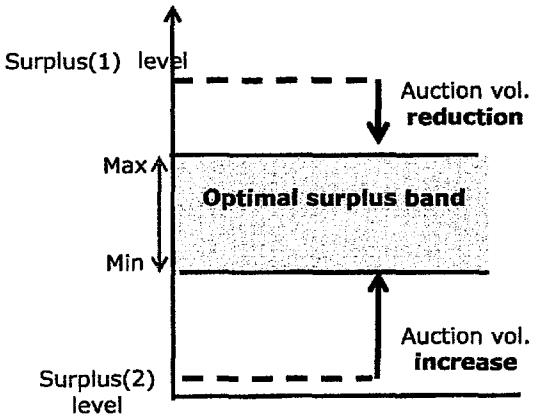
– forward purchasing needs

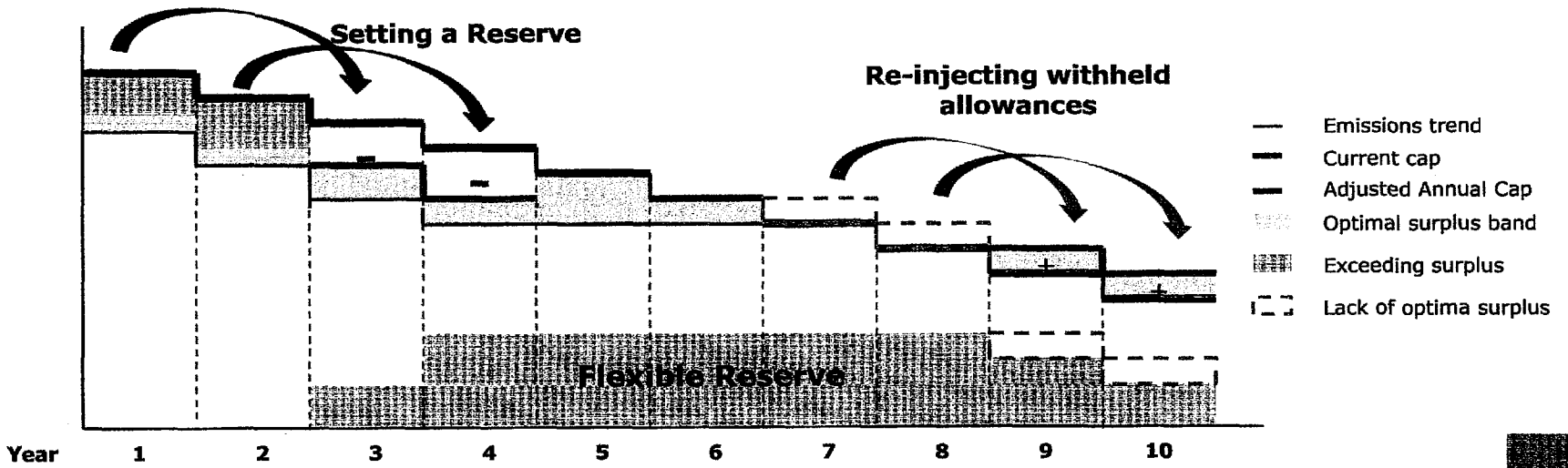
Data input and Scope

- The mechanism is based on **historical compliance data** related to cumulative surplus ("verified emissions" vs. annual Cap)
- The adjustment mechanism **would affect only auctioned volumes**

[redacted]echanism
[redacted]ability band in greater detail

- If the cum. surplus exceeds the "**max quantity value**" the difference between the surplus and the threshold would be deducted from future auction volumes
- If the cum. surplus goes below the "**min quantity value**" the difference between the threshold and the surplus would be added to future auction volumes
- An increase in the annual scheduled auction volume will be possible only if a reserve is available in order to preserve the environmental integrity of the mechanism
- Starting stability band thresholds could be:
  - Max = 100% of scheduled auction volume
  - Min = 80% of scheduled auction volume





[redacted]echanism
[redacted]r details

Timing

- The level of surplus cumulated within the system would be visible after the annual compliance of April each year
- According to resulting data auction volumes would be modified starting from the second half of the current year or from the next year (2 hypothesis)
- The total volume to be withdrawn/re-injected would **be spread on a monthly basis**, according to the scheduled auction calendar

Reserve management

- **Withheld allowances would not be cancelled**. They will be kept into the Reserve to be re-injected as soon as the cumulative surplus goes below the minimum threshold

Governance

- **An independent authority** could be in charge to simply verify the conditions required to implement the mechanism (no discretionary power) and, in case, modify auction volumes

Revision

- **The stability band may be reviewed periodically** based on actual trends of hedging related purchasing as well as actual observation of surplus levels

Dive 1: Determining the timing
e options

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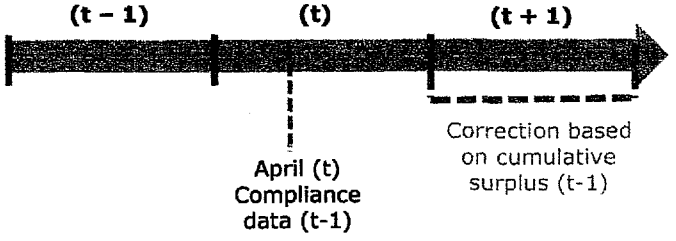
Hp.1. Annual based



If Surplus (t-1) > 100% of auction volume(t)

Auction' (t+1) =

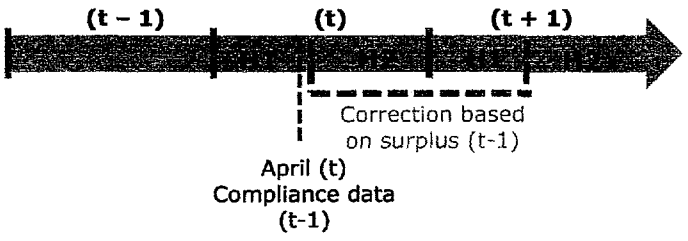
Auction(t+1) – [(Surplus (t-1) – 100% scheduled auction volume(t+1)]

If Surplus (t-1) < 80% of auction volume(t)

Auction' (t+1) =

Auction(t+1) + [(80% scheduled auction volumes(t+1) – Surplus (t-1)]

Hp 2. Double shot semestral (Double H)



Auction' (t) =
½ Auction(t) + ½ (Auction(t)- ½ [(Surplus (t) – 100% scheduled auction volume(t)]

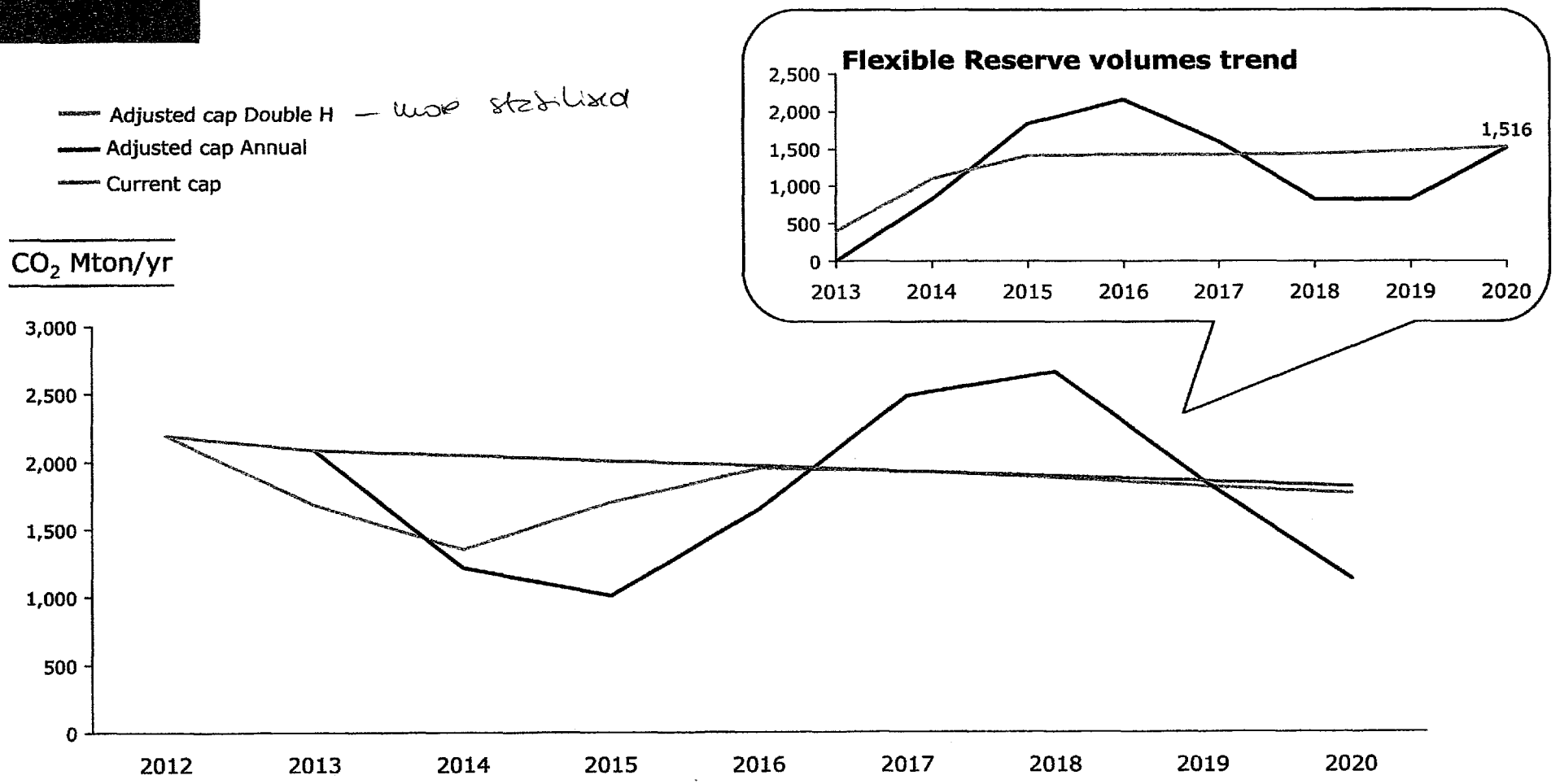
Auction' (t+1) =
½ Auction(t+1) - ½ [(Surplus (t) – 100% scheduled auction volume(t+1)] + ½ Auction(t+1)

Auction' (t) =
½ Auction(t) + ½ (Auction(t) + [(80% scheduled auction volumes (t) – Surplus (t)]

Auction' (t+1) =
½ Auction(t+1) + [(80% scheduled auction volumes (t+1) - Surplus (t)] + ½ Auction(t+1)

Dive 1: Determining the timing

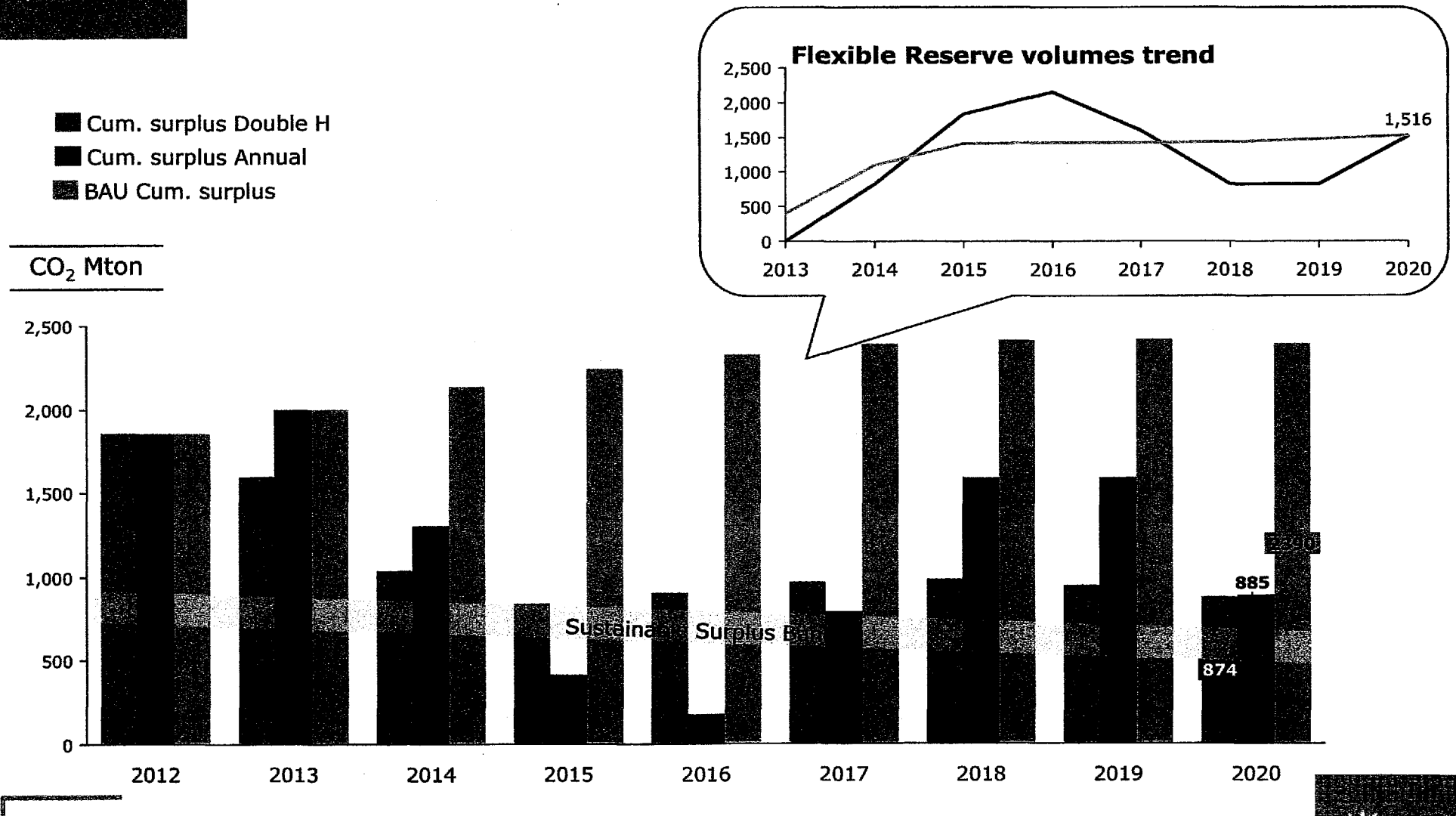
3 - Simulating dynamic allocation management in



Different cap adjustment timing lead to the same 2013-20 volumes withdrawn but the double H hypothesis presents lower variability maintaining an annual supply closer to original schedule

Note: base scenario Bloomberg emission forecast March 2013

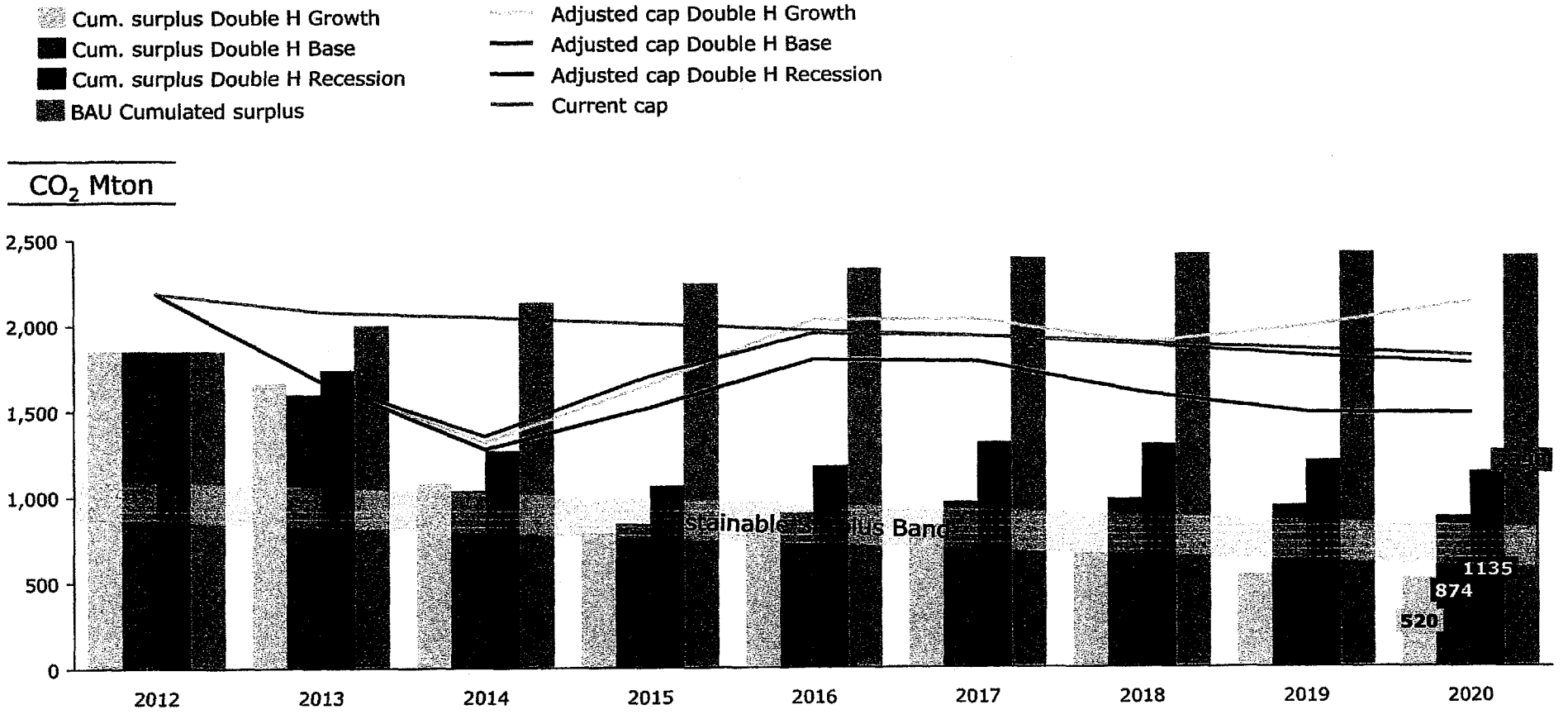
Dive 1: Determining the timing
3 – *Tracking the cumulated surplus*



Although more "abrupt" the Double H hypothesis implies higher and more gradual convergence

Note: base scenario Bloomberg emission forecast March 2013

Dive 2: Sensitivities
nt growth scenarios



Adjusted auctioned allocation reacts flexibly to economic cycles with part of the withheld allowances re-injected in 2018-20 in the market under the growth scenario

[redacted]ive 3: Determining the band

[redacted]ion between the allocation method and hedging needs

- **The proposed mechanism identifies the sustainable surplus band based on volumes of incoming auction schedule and "hedging needs"**; it can be conceived as a way to manage price volatility in the "post-free allocation era"

- **Current forward EUAs purchasing volumes are mainly associated with power sector's exposure to auctions:**
  - Historical data show that significant purchasing of forward EUAs in the power sector started at the end of phase 2 as auctioning allocation became imminent
  - Bloomberg and Point Carbon respectively estimate the quantity of allowances necessary to cover power sector's forward sales equal to 1.3 Gton and 0.8 Gton
  - The average of these two values could be used to define the sustainable surplus band used in dynamic auction management

- **An increasing exposure to auctions will lead to an increasing need for forward contracting.** A mechanism linking sustainable levels of market surplus with auction volumes will ensure a growing surplus to be available for operators according to a growing exposure to auctions of new sectors (in particular those sector managing long term contracts such as cement and steel)

80-100% of the scheduled auction volume could represent an appropriate stability band and ensure sustainable cumulated surplus levels

[redacted]ive 4: Governance

[redacted]ould be the most suitable institution to operate the mechanism?

Key criteria

a) Timing requested to appoint/create the body (legislative procedures such as Directive/Regulation amendment procedures
b) Timing to make the body "operative" (empowering, training, shaping competences)
c) Political acceptability and effectiveness of the appointed body

Possible solution

- **Technical implementation**: the Auction monitor staff (supported by official data of annual compliance) could be responsible for operating the mechanism modifying auction volumes
- **Periodical review**: Assessment and periodic adjustment of the surplus stability band could be performed via comitology procedure

[redacted]nges (1 of 3)

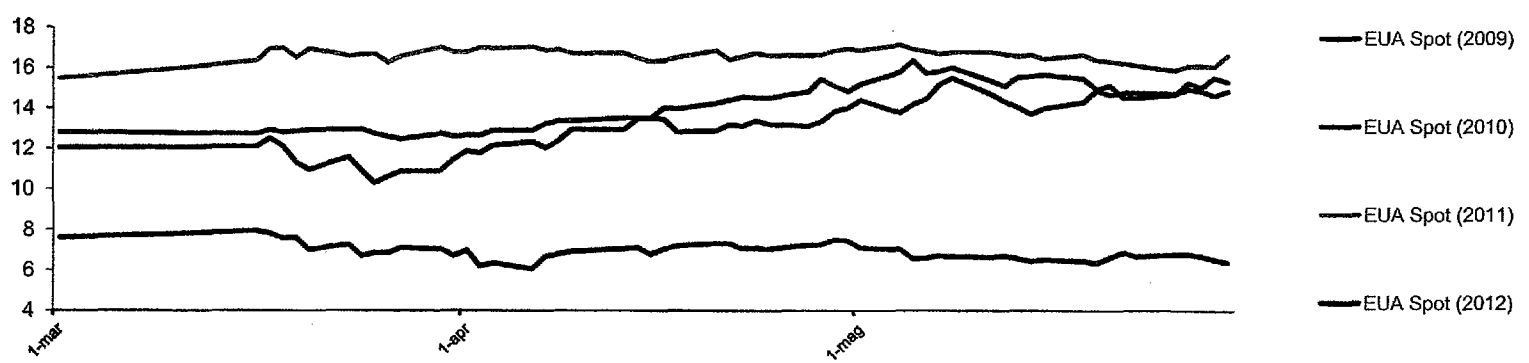
Q. Is there a risk exist that the May deadline of the auction mgt mechanism may further reinforce existing "April-May price shock" effects associated with the publication of verified emission data?

A. No, the risk does not appear significant as currently there do not appear to be "April price shock" effects associated with the publication of verified emission data; evidence indicates that operators and analysts known well in advance emissions data related to the current year; knowledge of emission trends is therefore progressively incorporated in market behaviors avoiding any risk of "April price shock"

Q. Could there by a risk that market operators may try to influence the mechanism by modifying emission levels?

A. Market fragmentation substantially mitigates the risk of strategic behaviors with an operator or group of operators trying to influence the mechanisms by modifying emission profiles

CO2 price trend is not affected by April data release



[redacted]nges (2 of 3)

Q. Could the mechanism be undermined by industrial operators holding back surplus due to either caution or attempts to manipulate prices?

A. No, it is true that the proposed mechanism considers the overall market surplus but modifies only auction volumes; however the risk is very limited as:

- Even though surplus is held by industrial sectors not directly affected by auction, an increasing carbon price led by market scarcity would induce operators holding surplus to sale extra allowances
- The increasing participation of the industrial sector in auctions will most likely progressively erode surplus held by industrial sectors, leveling the playfield
- The risk of price distortion induced by strategic behaviors would be mitigated by current EU ETS rules which allow to additional auction supply in case of "sharp and persistent price deviation from market fundamentals" (ref. art 29a Dir. 2009/29/CE)

Q. Why not satisfy forward contracting needs with financial/forward contracts? Is it necessary to have those volumes "physically" available on the market?

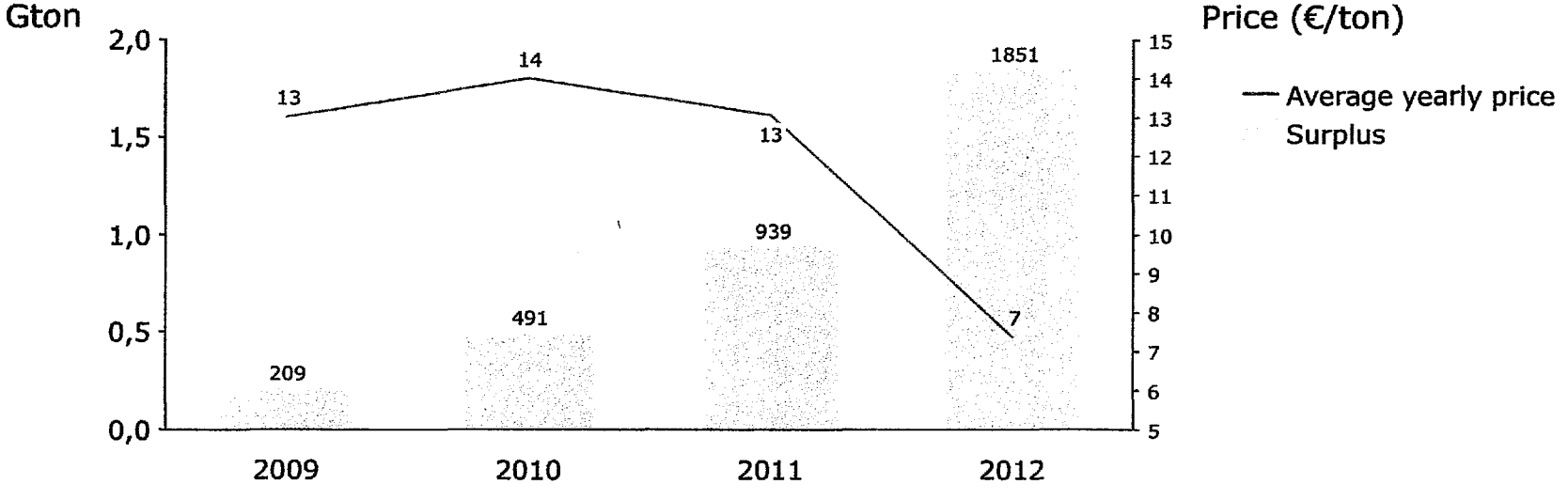
A. Yes it would be possible and such contracts are not incompatible with the "mechanism". The sustainable surplus range established by the mechanism is the range of surplus that the market can tolerate before starting to fail as it satisfy a real future demand. Surplus above the band may undermine the forward market as much as the spot market

[redacted]nges (3 of 3)

Q. Can we say that the introduction of a minimum and a maximum threshold for market surplus is equivalent to a price measure?

A. No, the two mechanisms are not equivalent as:

- A certain level of market surplus does not necessarily lead to specific prices
- Supply volumes are not the only price driver: prices are influenced also by expectations, regulatory decisions and exogenous contingencies
- Historical data show that even with surplus doubling, prices stayed stable (2009-2011) while, in 2012, the surplus doubled and prices halved for the combined effect of market expectations with the worsening of oversupply situation



[redacted] of the strengths of the mechanism

- ✓ It ensures an **optimal supply/demand balance**, guaranteeing higher market stability
- ✓ It's based on **consumptive official data** (no forecasts)
- ✓ It's based on **automatic adjustment**
- ✓ I's **easy to predict/implement**
- ✓ It's **reversible** (reserve management)
- ✓ It ensures an **optimal management of auction revenues for Member States**
- ✓ It preserves **price discovery**
- ✓ It preserves the system's ability to **follow economic cycles**

... but work is ongoing on the weaknesses ...

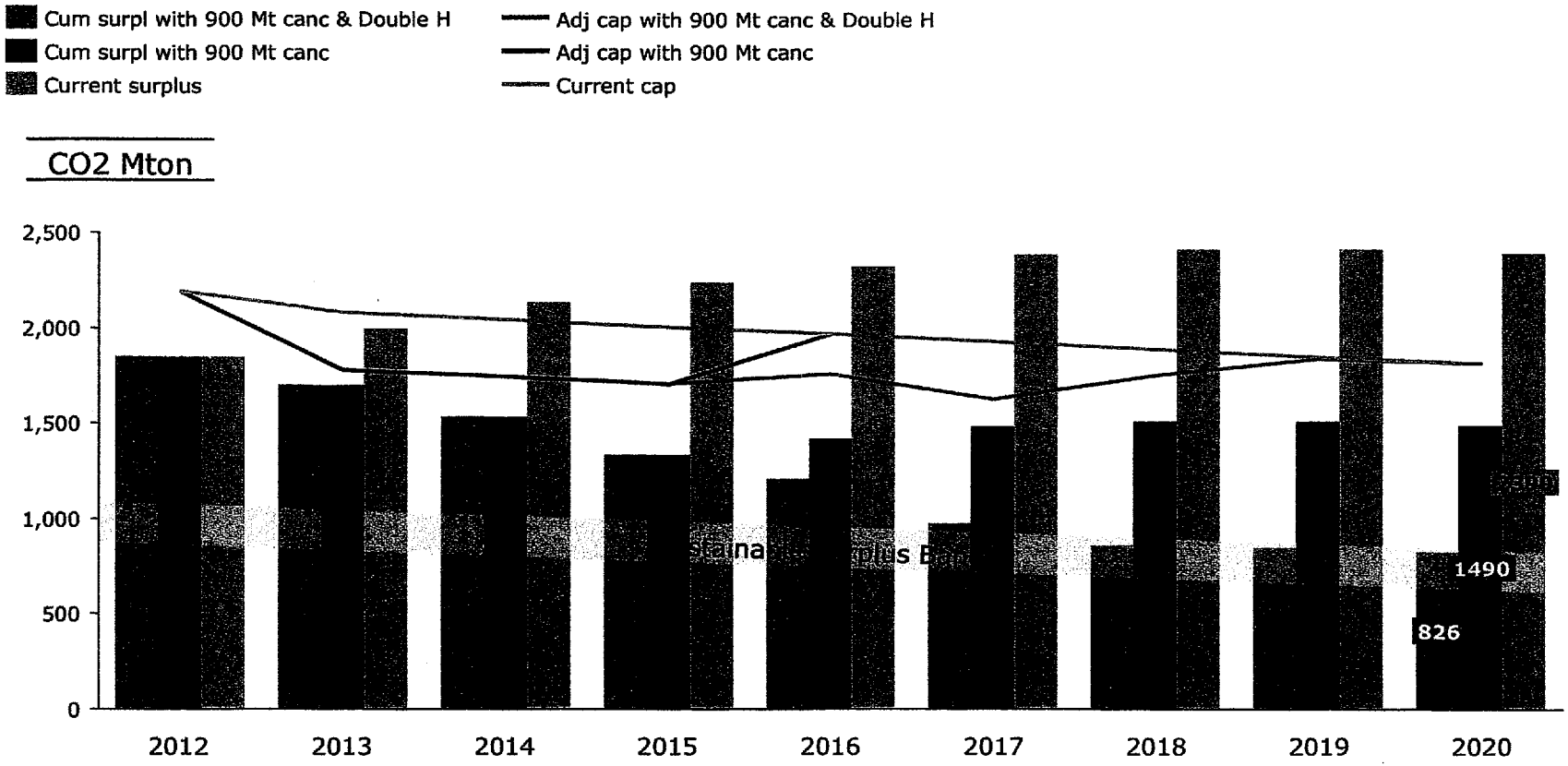
[redacted] up

[redacted]mary

Key points:

- **A certain level of surplus is acceptable for the market**: excessive surplus brings price implosion whereas insufficient surplus may lead to reduced liquidity and consequent price spikes
- **Adequate surplus levels play a key role for commodity based ETS sectors enabling to manage the risk of forward contracts by buying forward EUAs** (fixing EUA sourcing costs)
- The proposed mechanism ensures to stay within an optimal range of surplus ensuring **price stability and predictability**
- **The level of surplus allowed in the market is based on coming auction schedule to enable operators with "short positions" to manage the risk of next year contracts.** Current forward EUAs purchasing volumes are mainly associated with power sector's auction exposure, as other sectors will be increasingly exposed to auctioning, their forward contracting needs are expected to grow
- **The stability surplus band identified is 80-100% of the auctioned volume for the following year**
- **The stability band may be reviewed periodically** based on actual trends of hedging related purchasing as well as actual observation of surplus levels

Deep Dive 2: Sensitivities
Different policy scenarios



Implementing simple back-loading w/o structural measure is not enough

Dive 3: Determining the band
owing role of auctions

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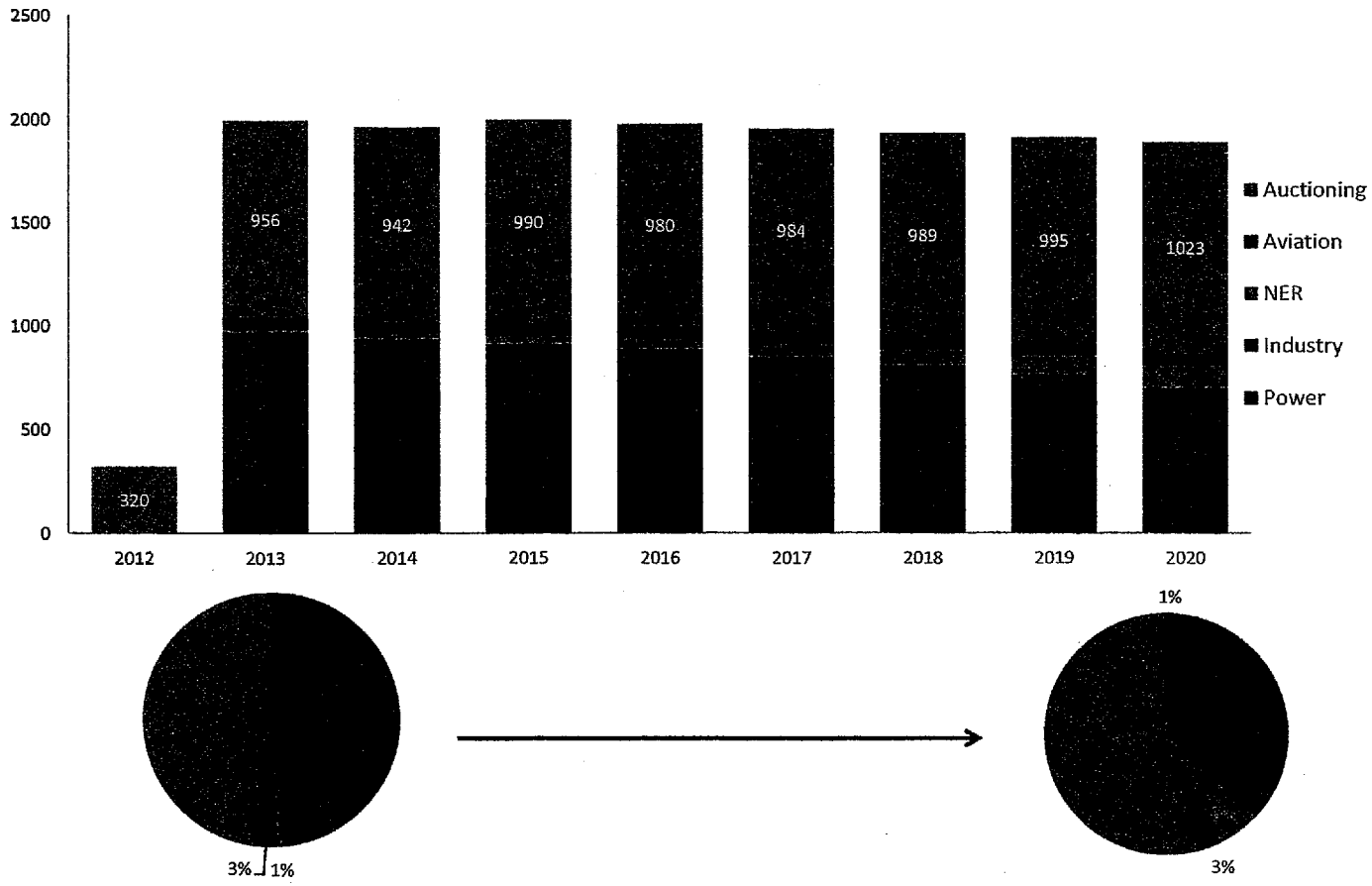
EU ETS Supply for phase 3

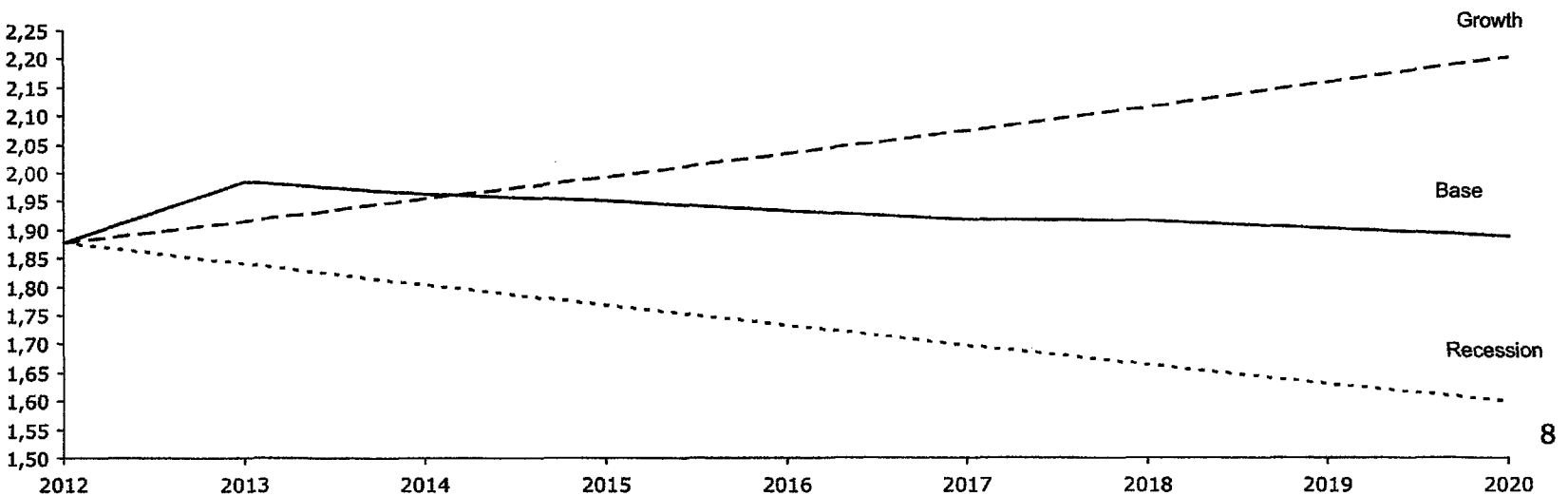


- **77% of EU industry** is deemed to be exposed to **carbon leakage** will receive 100% of free allowances up to 2020 (based on efficiency benchmarks)
- **The remaining installations that account for around 23% of industry sector emissions** will receive 80% free allocation in 2013 with this proportion decreasing to 30% by 2020

Auctioning will progressively become the reference rule for allowance allocation

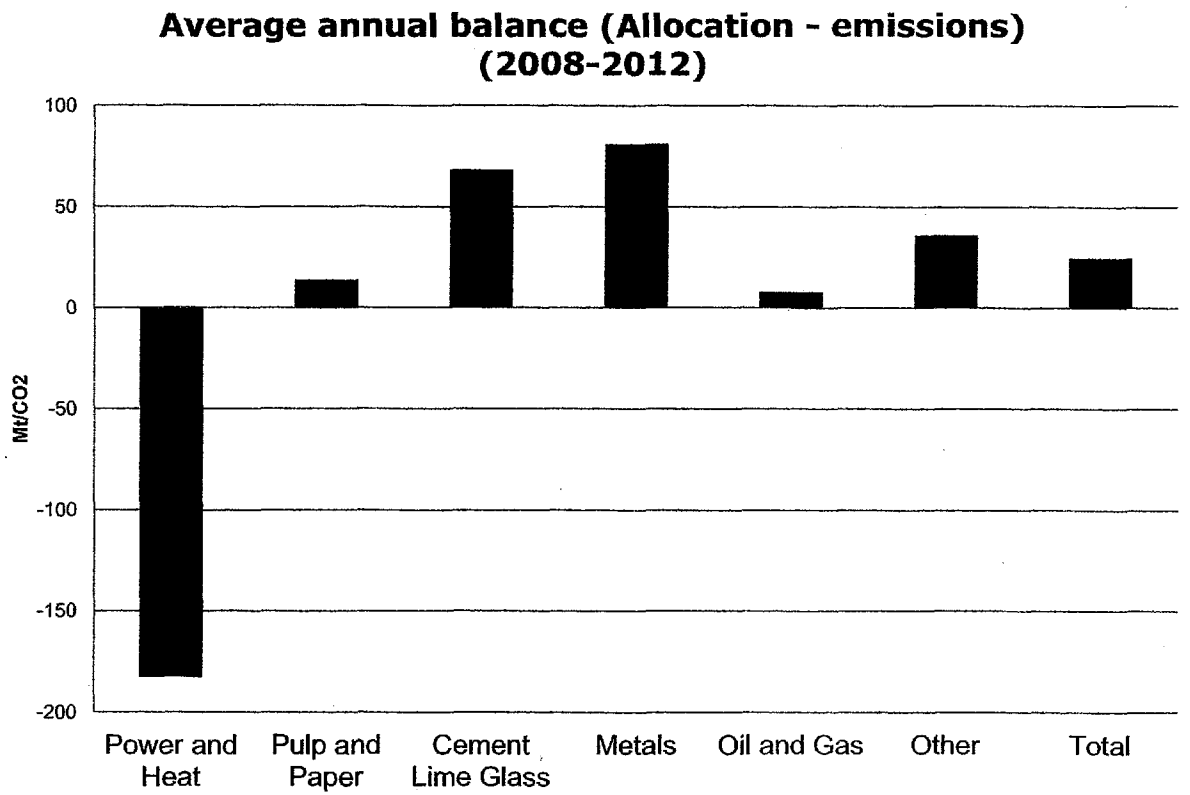
Source: Point Carbon 2013

[redacted]ssion trends



Emissions base scenario Bloomberg forecast March 2013, growth scenario +2% YOY starting from 2012, recession scenario -2% YOY starting from 2012

s/Deficit by industrial sector



Fonte : Dati EEA, 2012