

CARBON MARKET ANALYST



Winds of Reform: Examining the design parameters of the Market Stability Reserve

04 March 2014

TO THE POINT

With an early implementation of the Market Stability Reserve in 2017, the average EUA price over 2014-2020 could rise by around 39%, compared to an implementation in 2021 as proposed by the Commission. Early implementation will likely cause a decline of the market surplus beginning already in 2017. The surplus would decline more gradually, giving market participants more time to prepare for the abatement needed to meet EU's climate targets for 2030 and beyond, therefore likely leading to higher inter-temporal efficiency compared to an implementation of the reserve in 2021.

Transferring the 900 million backloaded allowances to the reserve will likely have an identical effect on the market balance as a permanent cancellation in the time frame up to 2030. If the backloaded allowances are transferred to the reserve in 2019 and 2020, they will likely remain there until 2030. This scenario helps avoid the disruption of the market balance resulting from the return of the 900 million backloaded allowances.

The market surplus is relatively insensitive to changes in the trigger levels, according to results from our model. In comparison, changing the size of the annual adjustment - i.e. how many allowances are removed from or released into the market each year – could have a greater impact on the market surplus.

In the event of another financial recession, the implementation of the Market Stability Reserve will likely support the market balance and the carbon price, as opposed to a scenario featuring the current design of the EU ETS, in which supply is inflexible.

The impact on the market from changes to the Market Stability Reserve proposal could be greater than that of changes to the 2030 GHG or renewable targets. A failure to implement the proposal could lead to 33% lower average EUA price over 2021-2030. In comparison a 35% GHG target likely translates into a 10% lower average EUA price over the same period.

Commencing the Market Stability Reserve in 2017 and transferring the 900 million backloaded allowances to the reserve may help achieve the Commission's goal of avoiding high carbon lock-in. The average 2014-2020 price could rise by approximately 57% as a result, compared to our base case.

CONTENTS

- 2 Introduction
- 3 Effects of an early implementation of the reserve in 2017
- 4 Changes to Article 2: the fate of the backloaded allowances
- 5 Changes in the trigger levels
- 6 Changing the size of the automatic adjustments
- 7 Response to demand shocks
- 8 Conclusions
- 9 Contacts



Introduction

As part of the 2030 climate and energy framework proposals published on 22 January this year, the European Commission has proposed structural reform of the EU ETS in the form of a Market Stability Reserve (MSR) - an automatic mechanism which will adjust market supply depending on fluctuations in demand. The mechanism will have two main purposes according to the impact assessment accompanying the proposal - 1) reduce the current oversupply of allowances and 2) make the EU ETS more resilient to demand-side shocks in the future. By achieving these objectives, the Commission aims to increase the inter-temporal efficiency of the ETS and prevent the EU from locking its energy infrastructure in high-carbon assets.

Discussions on the MSR proposal kicked off at an EU Environment ministers meeting on 3 March. Due to the European elections, we expect the conventional co-decision procedure between the Union's two lawmakers - the Parliament and member states in Council to practically start sometime around late 2014 or early 2015. This will likely be followed by one or two years of deliberations until the proposal can become law.

In this report, we provide a sensitivity analysis which looks into how changes to the Commission's proposal will impact the market surplus and the EUA price. We provide several scenarios which change one or two parameters in the current proposal at a time, while keeping all other assumptions constant. We compare these scenarios to the market surplus and the EUA price path reflecting the Commission's proposal as it currently stands. See the textbox on this page for an introduction into the Commission's proposal.

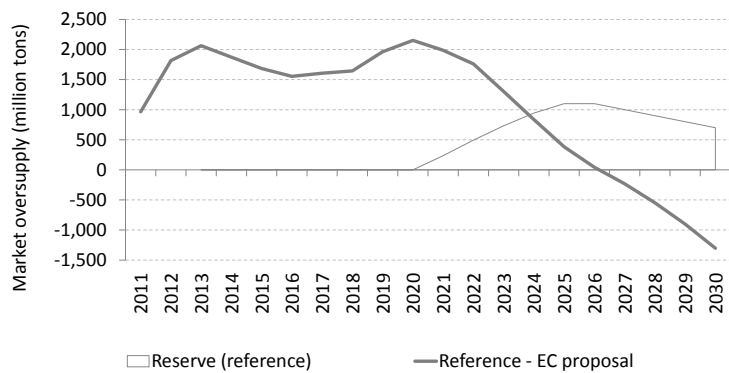
Reference scenario

As a basis for comparing different designs of the MSR, we present our base case forecast of the market surplus, which reflects the proposal as proposed by the Commission (Figure 1). In the reference scenario, we foresee the surplus increasing

late in phase 3 as the backloaded allowances return to the market. The market surplus begins to decline in 2021 and is eventually used up in 2027, when the market turns short. At this point market participants are required to abate emissions to balance the market.

Figure 1: Market surplus with MSR proposal

Reflects TRPC base case assumptions with the proposed MSR and 2030 targets.



The Market Stability Reserve proposal explained

The Market Stability Reserve functions as an automatic adjustment of the annual auctioning volumes. The basis for the annual adjustments is the **market surplus** (also referred to as "allowances in circulation") defined as: the allowances allocated since 2008 + international credits used for compliance since 2008 - verified emissions since 2008.

On 15 May of each year beginning in 2017, the Commission will publish an official estimate for the market surplus for the previous year.

The MSR will begin operating in 2021, according to the Commission's proposal. In 2021, 12 percent of the surplus recorded for 2019 (two years back) is withdrawn from the annual auctioning schedule and placed into the market stability reserve. In 2022, 12 percent of the surplus recorded for 2020 will be withdrawn and placed into the market stability reserve. This will be repeated every year until the surplus falls below **the upper trigger** of 833 Mt. The proposal also defines a **lower trigger** equal to 400 Mt. If the market surplus is below this number, allowances are returned to the market from the reserve in annual installments of 100 Mt.

Article 2 of the proposal foresees an additional adjustment in auctioning volumes to take place in 2020. This adjustment is equal to two-thirds of the difference between the auctioning volumes in 2020 and the average auctioning volumes in 2021 and 2022. This volume, which we estimate will be 421 Mt, will be withdrawn from the auctioning schedule in 2020 and released back in equal halves in 2021 and 2022.

In addition to the MSR proposal, our base case includes our assumptions on 2030 climate and energy targets and our expectations for future emissions growth. We assume a 40% GHG target and a 27% Renewable target for 2030, in line with the Commission’s proposal. Our emissions forecasts reflect a GDP growth of 1.7 percent on average in 2014-2020 and 1.9 on average in 2021-2030.

Early implementation

The European Commission proposes an implementation of the MSR from the start of phase 4, in 2021. The German environment minister Barbara Hendricks has suggested that the MSR could be introduced “considerably earlier” than 2021. During the Environment Council on March 3, the UK, Denmark and Sweden also voiced support for an early start of the mechanism.

Our expected timeline for the adoption of the MSR sees a possible entry into law sometime in early 2017 (for more details, read our report on the 2030 framework). This would allow for the possibility that the mechanism be brought into operation already in phase 3 and allowances be withdrawn from the market possibly as soon as 2017.

The impact of this scenario on the market surplus is depicted in Figure 2a. Implementing the MSR in 2017 addresses the accumulated oversupply sooner and the surplus begins to decline already in 2017. The surplus rises again in 2019 and 2020 as the backloaded allowances return to the market, but less dramatically than it does in the base case. The MSR will therefore alleviate the fluctuations in the market balance that result from the injection of the backloaded allowances at the end of phase 3. In 2020, an additional 421 Mt are

withdrawn from the auctions and reintroduced in equal halves in the next two years. This adjustment is in line with Article 2 of the Commission’s proposal, which calls for a certain auctioning volume of 2020 to be delayed to 2021 and 2022. This adjustment applies in both the base case scenario and the early implementation scenario.

In 2021 the surplus begins to decline gradually. In the early implementation scenario, the surplus is lower than in the base case all the way up to 2030 as the reserve

will likely have accumulated more allowances by that point. An early implementation would also result in a more gradual depletion of the market surplus, which would give market participants more time to prepare for the emission reductions necessary to meet EU’s climate target for 2030 and beyond.

The lower market surplus is expected to lead to higher EUA prices particularly in phase 3. Figure 2b shows the potential price path for EUA prices expressed in real 2010 Euros. The grey line

Figure 2a: Market surplus in early implementation scenario

MSR implemented in 2017. Allowances begin to be withdrawn in 2017.

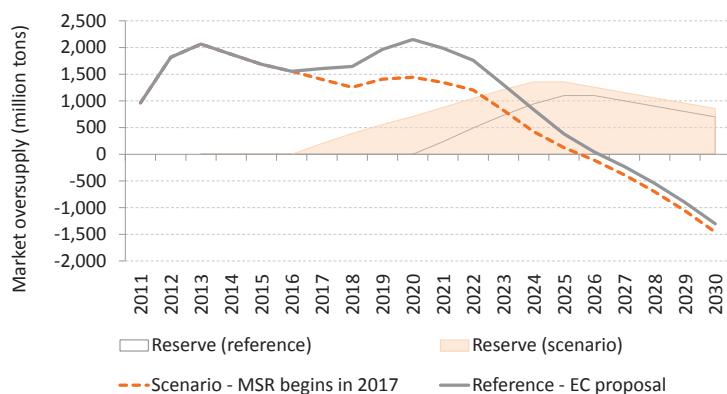
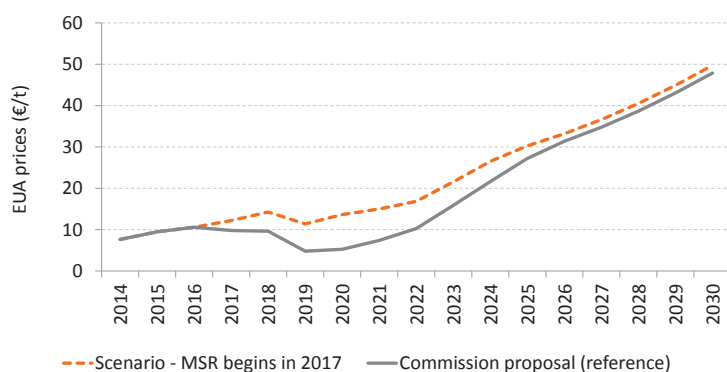


Figure 2b: EUA price path in early implementation scenario

MSR implemented in 2017. Prices in real 2010 Euros.



presents the price path resulting from the Commission's current proposal, which we expect to reach €48/t (€71/t in nominal terms) in 2030. Our price forecasting model estimates that the early implementation scenario causes the average 2014-2020 price to rise by around 39% and the average 2021-2030 price by around 13%, compared to a scenario featuring the Commission's current proposal. The two price paths will eventually converge as the reserve releases all allowances back to the market.

Changes to Article 2: the fate of the backloaded allowances

Article 2 of the Commission's proposal allows for a certain volume of allowances to be taken out of 2020 and reintroduced in 2021 and 2022 in equal halves. This reflects the Commission's intention to alleviate the large influx of supply that will result from the reinjection of the backloaded allowances in 2020. We estimate that under the proposal 421 Mt will be withdrawn from 2020 and 210 Mt will be added to the auctions in 2021 and 2022.

We expect the fate of the backloaded allowances to be part of the discussions on the Commission's proposal, which can make Article 2 a hot topic of debate going forward. The Commission has argued that "specific provisions are necessary to tackle a potential supply peak /.../ in 2020". Article 2 of the current proposal will smoothen the supply peak resulting from the return of the backloaded allowances. However, it may be contested by certain stakeholders, member states and Parliamentarians alike during the co-decision process, as it represents an interference with the already agreed backloading plan.

Figure 3: Market surplus after excluding Article 2

Excludes Article 2 of EC proposal which calls for transfer of allowances from 2020 to 2021 and 2022.

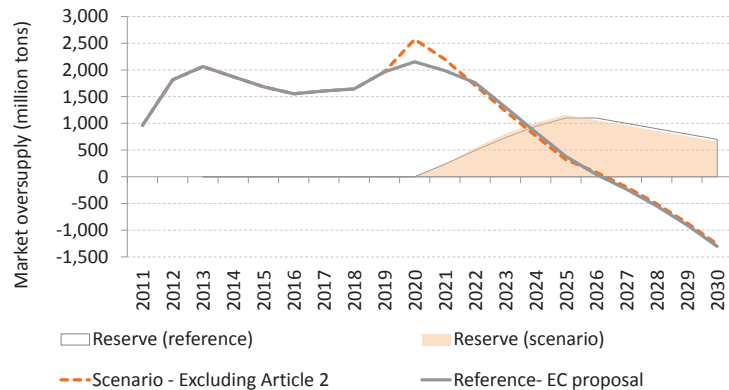


Figure 3 depicts a scenario where Article 2 is excluded from the Commission's proposal and 600 million tons are reintroduced in 2020 in line with the backloading decision. The exclusion of Article 2 would result in a sharp rise in the market surplus in 2020 to 2.6 Gt. In this scenario, the surplus eventually decreases as EUAs are placed into the reserve and the market surplus realigns with the base case in 2022. The influx of supply will likely lead to volatility in the EUA price, which is expected to be lower in 2020 and 2021 compared to the base case.

When it comes to the backloaded allowances, climate ministers in the UK and Denmark voice support for a permanent cancellation of these allowances. While this option appears unrealistic at this stage, a possible compromise may arise, in which a decision is taken to transfer the 900 million backloaded allowances into the reserve directly instead of returning them to the market. Currently 300 Mt are due to be released in 2019 and 600 Mt are due to be released in 2020 as a result of the backloading. We present a scenario in which these volumes are placed directly in to the reserve in 2019 and 2020. In this scenario, the MSR still begins

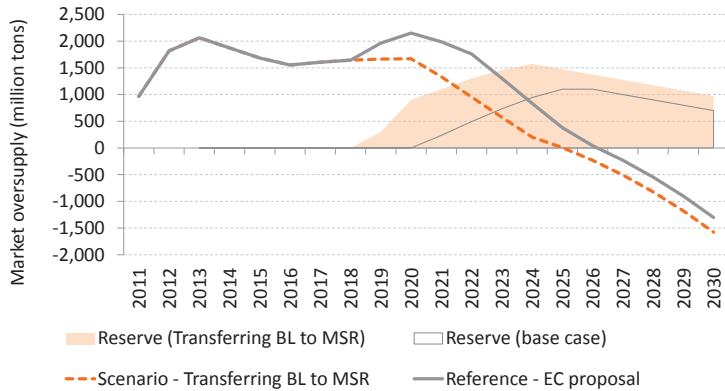
to take out allowances in 2021, as currently envisioned.

Figure 4a depicts the possible resulting impact on the market surplus. In this scenario, the surplus remains largely unchanged until 2020, after which point, it begins to narrow as a result of the implementation of the MSR. By 2030, the reserve will hold 975 million EUAs. This implies that the 900 million backloaded allowances will still be in the reserve in the entire time horizon up to 2030, according to our model. Therefore, transferring the backloaded allowances to the MSR will possibly have the same effect on the market surplus and the EUA price as a permanent cancellation of these 900 million allowances, in the timeframe up to 2030.

The transfer of the backloaded allowances to the MSR will likely avoid the spike in market surplus in 2020 and most likely lead to higher prices towards the end of phase 3. Our price forecasting model estimates that the average 2014-2020 price will be approximately 16% higher, and the average 2021-2030 price around 19% higher as a result (Figure 4b).

Figure 4a: Market surplus if backloaded allowances go into MSR

Instead of returning to the market, 900 Mt are transferred directly into the reserve in 2019 and 2020.



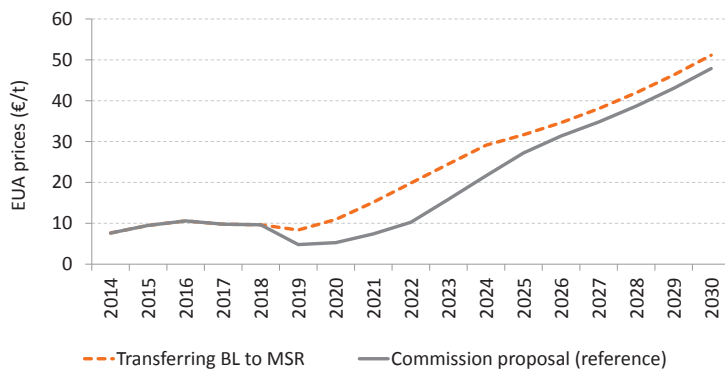
Two of the scenarios mentioned so far - transferring the backloaded allowances to the MSR and implementing the MSR in 2017 - may have complementary functions in addressing the market oversupply already in phase 3.

Figure 5 depicts the market surplus when both of these scenarios are implemented and all other assumptions are kept constant.

This combined scenario results in a gradual decrease of the market oversupply starting in 2017 and avoids any volatility at the end of phase 3. As a result the gradually declining surplus, the market will likely receive a signal for the need of low-carbon investments sooner than under the Commission's current proposal. Our price forecasting model suggests that the narrower market surplus could translate into an increase to the average 2014-2020 EUA price of around 57% compared to the reference and a rise of the 2021-2030 average EUA price of approximately 27%.

Figure 4b: EUA price path if backloaded allowances go into MSR

900 Mt transferred in the reserve in 2019 and 2020. Prices in real 2010 Euros.

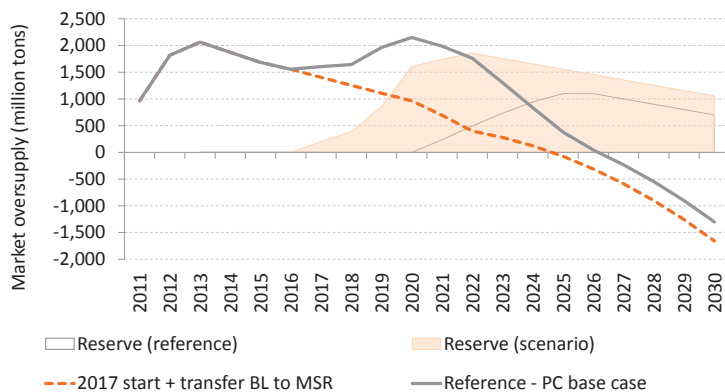


Changes in the trigger levels

The Commission's proposal has set an upper trigger level at 833 Mt (if the surplus is above this level, allowances are taken out of the market) and a lower trigger at 400 Mt (if the surplus falls below this level, allowances are returned to the market). The reasons behind the choice of these specific levels are not very clear. The Commission argues that the upper trigger should roughly represent the annual needs of power generators to cover EUA purchasing needs for future years. Power hedging patterns however are relatively opaque as not all operators make such data available, and varying assumptions about the magnitude of hedging can lead to different views on the "correct"

Figure 5: Market surplus in a high inter-temporal efficiency scenario

MSR begins to withdraw allowances in 2017. 900 mill backloaded allowances are transferred to the reserve in 2019 and 2020.



upper trigger level.

According to our model, the market is rather insensitive to changes to these trigger levels. As an arbitrary example, we present a scenario in which both trigger levels are changed to zero. In this case, allowances are withdrawn from the market until there is no surplus of allowances. Once the market reaches this point, allowances begin to be released from the reserve.

In this scenario, the surplus is likely to be only slightly lower than it is in the base case after 2025, as only a small amount of additional allowances are withdrawn from the market (Figure 6). Allowances begin to be returned to the market in 2027 (as opposed to in 2026 in the base case). Overall, the slightly narrower market surplus may translate into an approximate 3% increase in the average EUA price over 2021-2030.

The results presented here are partially a consequence of our assumption that market participants do not bank the surplus but use it as rapidly as possible to meet their compliance needs. If a significant portion of the surplus was banked farther into the future, the difference between an upper trigger level of 833 Mt and one at zero would be greater, implying a greater impact on the market than the one presented here.

Changing the size of the adjustments

The annual adjustments determine how many allowances are removed from the market or released back. The Commission's proposal specifies that 12 percent of the oversupply should be removed from the market each year the surplus is larger than the upper trigger of 833 Mt. The proposal also sets the amount of allowances to be returned into the

market at 100 million tons per year.

In the time horizon up to 2030, the market will likely be relatively more sensitive to size of the removals. As an arbitrary example we show the results from our model in a scenario where 20 percent of the oversupply is removed from the market and placed into the market stability reserve. The upper trigger level is kept at 833 million tons in this scenario and all other parameters remain unchanged.

This scenario likely results in a steeper decline in the market

surplus (Figure 7). More allowances are placed into the market stability reserve with around 400 Mt allowances withdrawn from the market each year in 2021 and 2022 (in comparison, removing 12 percent of the oversupply leads to an annual removal of around 250 Mt in the first two years of phase 4, according to our estimates). The market is relatively shorter towards the end of phase 4, requiring larger emissions reductions to balance the market. This scenario may drive the average 2021-2030 EUA price around 16% higher than in our base case.

Figure 6: Market surplus with changed trigger levels

Upper trigger changed from 833 Mt to 0 Mt and lower trigger from 400 Mt to 0 Mt.

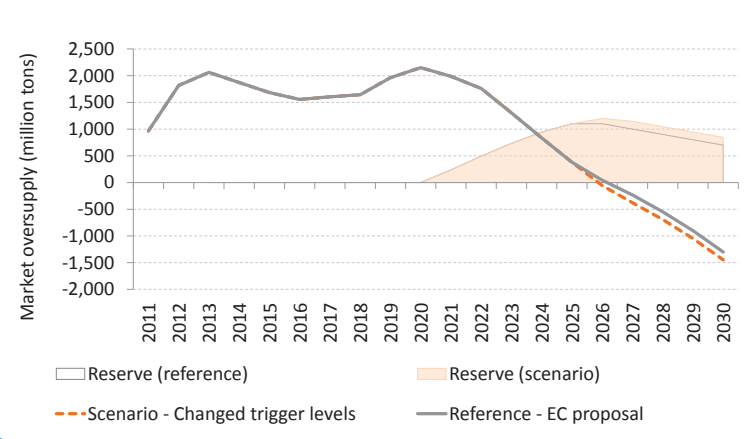
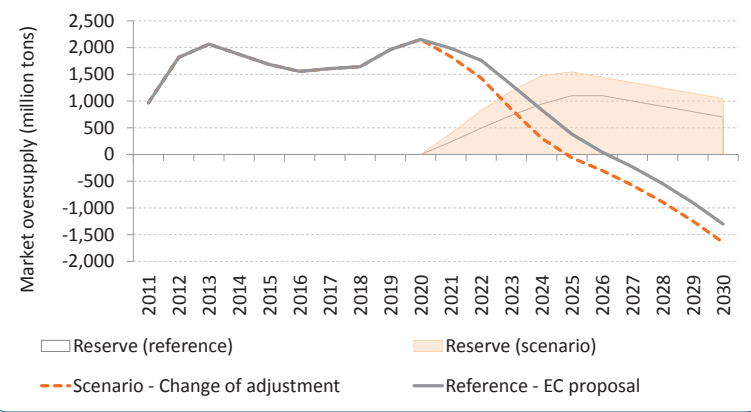


Figure 7: Market surplus with changed annual removals

The size of the annual removals is changed from 12 percent to 20 percent of oversupply.



A reduction of the annual adjustment from 12 percent to 5 percent will likely have a similar but opposite effect of increasing the market surplus in comparison to the base case reference and likely leading to roughly 17% lower average EUA price in the period 2021-2030, according to our price forecasting model.

In comparison, decreasing the size of the returning volumes has a lower effect on the price in the period up to 2030. A reduction of the annual volume to be released from 100 Mt to 50 Mt potentially increases the average 2021-2030 EUA price by 3%. An increase of this volume to 150 Mt would have a corresponding effect of a 3% decrease to the average EUA price.

Response to demand shocks

The financial crisis that began in 2008 now appears to be behind us, but future periods of economic volatility cannot be ruled out. One of the two main goals of the MSR proposal is to make the ETS more resilient to such demand side shocks. To test the current proposal, we have devised a scenario in which a financial recession unfolds in 2014 and follows the same pattern as the double dip recession the EU has seen over the past six years. EU GDP growth in 2014 is set at 0.5 percent, in line with 2008 growth and 2015 growth is set at -4.4, to mirror the contraction in 2009 (Table 1). A recovery follows before the economy falls into a recession again in 2018, as it did in 2012. Growth eventually returns to the 1.9 percent for the next decade as assumed in our base case forecast.

For this analysis, we have assumed that the MSR begins in 2014, with the first allowances withdrawn from the market already in 2014. This is a

hypothetical scenario, used purely for the purposes of showing how the MSR would react to the theoretical financial crisis described above.

Figure 8 depicts the impact of the described recession on the market surplus with the MSR (orange line) and without the MSR (black line).

In the absence of the MSR, a financial recession will likely lead to an expansion of the market oversupply that could reach almost 4 billion tons in 2020. In this case the oversupply would decline somewhat to around 3 billion tons by 2030. This long lasting surplus is likely to discourage market participants from holding allowances into the future and could result in extremely low carbon prices all the way up to 2030.

On the other hand, if an MSR mechanism is present as of 2014, it will likely prevent the expansion of the oversupply. In this case, we estimate that the MSR will remove 187 Mt per year on average from 2014 to 2020. The reserve will soak up some of the extra supply and reach a peak of around 3 billion tons in 2029. As a result the market surplus will not deviate far from the reference in phase 3. Our price

Table 1: GDP comparison

In 'Recession GDP' scenario, EU GDP growth from 2014-2018 is equal to the historical GDP from 2008-2012.

Source: IMF

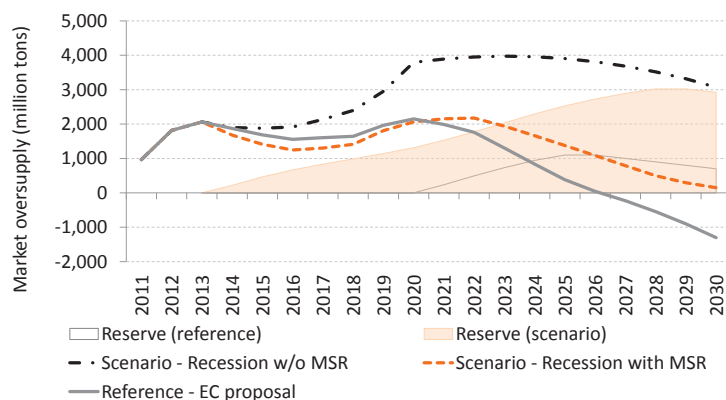
	PC GDP	Recession GDP
2014	1.3	0.5
2015	1.6	-4.4
2016	1.8	1.8
2017	1.8	1.7
2018	1.9	-0.3
2019	1.9	1.2
2020	1.9	1.9

forecasting model suggests that EUA prices would remain supported until 2018, but fall to relatively low levels between 2019 and 2022. After 2023, prices could begin to recover and possibly reach somewhere around €27/t in 2030.

The financial recession will still leave a mark on the market surplus in the long term, as can be seen from the way the orange line deviates from the base case reference in phase 4. This implies that while the MSR could prevent certain short term

Figure 8: Market surplus in a financial recession

Financial recession begins in 2014 and follows same annual GDP growth rate as the 2008 financial recession



fluctuations it will not be a cure for the long term effects of financial recessions.

This is partially caused by the fact that annual removals are based on a percentage of the oversupply, and therefore become smaller as the oversupply declines. If this were changed to a fixed absolute number, such as 200-250 Mt, the reserve can have a greater impact in the long term as well.

Another reason is the level of the lower trigger level, currently set at 400 Mt. If this trigger level were reduced or changed to a negative number this would imply that allowances would be returned to the market farther out in time. In the case of a financial recession such as the one described here, this may help support the carbon price for a longer time horizon.

Conclusions

Implementation of the MSR in phase 3 avoids disruptions in the supply/demand balance which would result from the rapid return of 900 million allowances to the market in 2019 and 2020. As we have argued in previous analyses, this option enhances the inter-temporal efficiency of the EU ETS. Commencing the MSR in 2021 but transferring the backloaded allowances into the reserve could achieve a similar goal, but will likely lead to a longer period of low prices, as the EUA price may remain around €10/t up to 2020.

A possibility to combine these two options also exists, and would result in a gradual decline of the surplus starting in 2017. This will likely be coupled with a steady rise of the EUA price, avoiding any volatility around 2019-2020. This option may help avoid high carbon lock in to a greater extent than the Commission's current proposal. It

will however also likely result in a significant rise in the carbon price already in phase 3. The interference with the recently adopted backloading decision could also draw some objections from several member states, Parliamentarians and stakeholders.

Changing the size of the adjustments could also have significant impact on the market, depending on the size of the adjustments. In comparison, changing the trigger levels will likely lead to relatively small changes in the supply/demand balance and the EUA price.

The impact on the market from changes to the MSR proposal could be greater than that of changes to other aspects of the Commission's 2030 climate framework. As our previous report showed, a 35% GHG target for 2040 could decrease the average 2021-2030 EUA price by 10% compared to our base case forecast. A potential increase of the RES target to 30% on the other hand can translate into 13% lower average EUA price over the 2021-2030 period. By contrast, failure to adopt the Commission's MSR proposal will likely lead to a 33% lower EUA price in this time period compared to our base case. Changing the design parameters of the MSR - such as the size of the annual adjustments in auctioning volumes as well as the timing of implementation - could also result in larger effects on the carbon price than changes to the 2030 targets.

Contacts

EDITORIAL ENQUIRIES

Emil Dimantchev
emil.dimantchev@thomsonreuters.com
Tel +47 23 31 65 08

SALES ENQUIRIES

Thomson Reuters Point Carbon Sales Team
For further information about the products please use the form

https://forms.thomsonreuters.com/commodities_energy/

OTHER ENQUIRIES

Thomson Reuters Point Carbon, Norway
(Head Office of TRPC)
Dronning Eufemias gate 16
0191, Oslo
Norway
Tel +47 22 40 53 40
tr_pca_carbonmarkettrader@thomsonreuters.com

WEBSITE

www.pointcarbon.com
www.thomsonreuters.com

London

Thomson Reuters (Head office of the TR group)
The Thomson Reuters Building
30 South Colonnade, Canary Wharf
London E14 5EP
United Kingdom
Phone: ++44 (0)20 7250 1122
Fax: +44 (0)20 7253 7856

Washington D.C.

Thomson Reuters Point Carbon North America
1100 13th Street NW, Suite 200
Washington, DC 20005
carbonresearch@thomsonreuters.com

Sales enquiries

Americasnewbusiness@thomsonreuters.com
Tel +1.877.365.1455

Kiev

Thomson Reuters Point Carbon Kiev
3 Sportyvna Ploscha
Entrance IV, 4th floor
Olymp Business Center
01601 Kiev
Ukraine
Tel: +38 044 583 55 48
Fax: +38 044 583 55 49

OFFICES

A POINT CARBON PUBLICATION

Copyright © 2014 All rights reserved. No portion of this publication may be photocopied, reproduced, scanned into an electronic retrieval system, copied to a database, retransmitted, forwarded or otherwise redistributed without prior written authorisation from Thomson Reuters. Breach of these terms is illegal and punishable by fines up to € 50 000 per violation. See Point Carbon's "Terms & Conditions" at www.pointcarbon.com

The data provided in this report were prepared by Thomson Reuters Point Carbon's Trading Analytics and Research division. Publications of Thomson Reuters Point Carbon's Trading Analytics and Research division are provided for information purposes only. Prices are indicative and Point Carbon does not offer to buy or sell or solicit offers to buy or sell any financial instrument or offer recommendations to purchase, hold or sell any commodity or make any other investment decision. Other than disclosures relating to Point Carbon, the information contained in this publication has been obtained from sources that Point Carbon believes to be reliable, but no representation or warranty, express or implied, is made as to the accuracy or completeness of this information. The opinions and views expressed in this publication are those of Point Carbon and are subject to change without notice, and Point Carbon has no obligation to update either the opinions or the information contained in this publication.

Thomson Reuters Point Carbon's Trading Analytics and Research division receives compensation for its reports. Point Carbon's Trading Analytics and Research division reports are published on a subscription basis and are not issued at the request of any client of Thomson Reuters Point Carbon.

POINT CARBON



THOMSON REUTERS