ENERGY OUTLOOK

Year VI n°17 - June 2021

ETS CO2 Outlook

Osservatorio energia
REF4E

The Market Stability Reserve EU mechanism (MSR) balances 2020 Covid-related excess supply-demand surplus, supporting the CO_2 price in the short-term and limiting the downside risk also in the event of commodities and gas prices move lower. **A stabilization of the ETS CO_2 above 40 €/MWh guarantees the coal to gas switching at least for average efficiency thermal plants till year 2025** should the PSV remain below 22.5 €/MWh and Coal average near 80 $/ton.

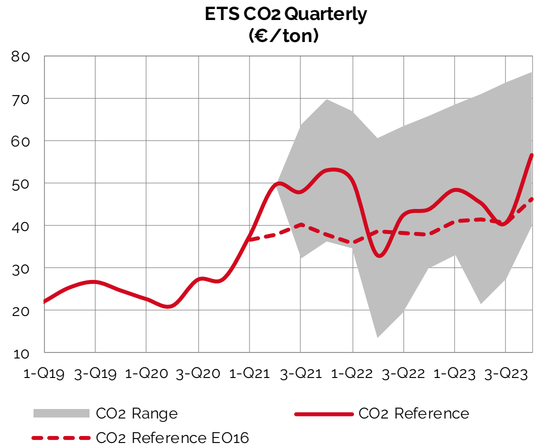
FRAME OF REFERENCE AND METHODOLOGY

The REF-E energy outlook and the special focuses are elaborate by REF-E experts on the base of our models and market knowledge. A suite of econometric and structural models, as well as our expert sensitiveness and detailed knowledge of regulation, accurate monitoring of market outcomes underlie our elaborations.

A Reference scenario is built to represent the most probable market equilibrium given the BAU conditions and most likely evolutions (such as known market developments or approved regulatory improvements). A Thermal Renaissance framework refers instead to a scenario where the decarbonisation process slows down significantly or fails in respect to BAU targets while a Green Revolutions scenario assumes a very favourable decarbonization framework. Thermal and Green scenarios mainly differ on the mid to long-term perspectives. In a shorter perspective we refer to High scenario and Low scenario where short term market conditions drive high or low the commodity prices (temperatures and climate, market congestions, etc).

A TIGHT COMMODITIES MARKET ADDS TO EU CLIMATE AMBITIONS IN SUPPORTING THE ETS PRICE

The CO2 uptrend remains in force, with quotations having moved above the key psychological threshold at 50 €/ton since the beginning of May. **The ETS Phase 4** (covering the 2021 to 2030 period) **chick off in January, demand recovery, the generalized uptrend developed by fuels and significant buying interest from investment funds** combined in supporting the market. The CO2 sharp up-move is coherent with the overall commodities and financial markets upward trends, with speculative long positionings of investment funds and specs adding fuel to the underlying bullish sentiment, with net long positions having grown till the end of April and compliance entities demand having increased in May. The ongoing economic recovery supports power and heating demand growth expectations.

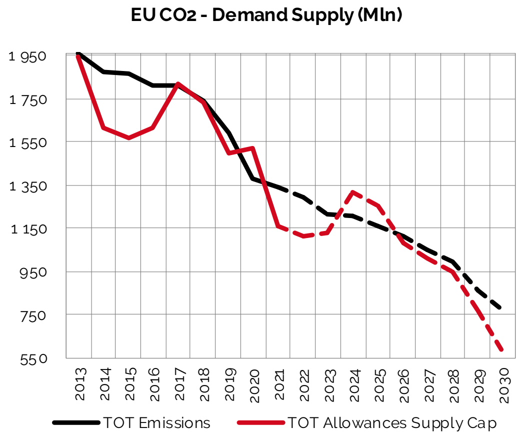


Source: REF-E elaborations

In year 2021 the CO2 price will average above 45 €/MWh, following the recent sharp up-move. The 2022 reference still lies below 45 €/ton though. Both forecasts were revised higher compared to our previous Energy Outlook ([BRENT COAL & CO2 OUTLOOK MAR 2021]). While the EU Commission commitment to reaching the 2050 55% emission reduction target supports a structural medium to long term upward trend, the short-term acceleration is in fact related to the short-term overall commodities and particularly gas market tightness, which may ease should weather and supply conditions normalize. A particularly aggressive regulatory reform of the ETS System may instead lead to a *Green* Scenario, with the CO2 price averaging above 55 €/ton in 2021 and above 60 €/ton in 2022. The *Thermal* Scenario implies instead a failure to put in place a reform leading to a complete coal to gas switching.

Our Reference scenario is based on the current regulation framework, with the Market Stability Reserve (MSR) mechanism balancing last year excess supply-demand balance[1] and consequently expected to support the CO2 price in the short-term. This would also limit the downside risk should commodities and gas prices move lower. This scenario also assumes the CO2 guaranteeing the coal to gas switching at least for average efficiency thermal plants till year 2025 and leading to the switching from the most efficient coal plat to the less efficient gas production by year 2030. However, a revision of the ETS System following the EU Parliament approval of the 55% emissions reduction target is in the pipeline and may lead to further upward revisions of the CO2 price projections.

[1] Each year, the Commission publishes by 15 May the total number of allowances in circulation, which works as an indicator on whether and how many allowances will be placed in the reserve. With year 2020 total number of allowances having exceeded the 833 million tons threshold, allowances equivalent to almost 379 million tons will go to MSR.



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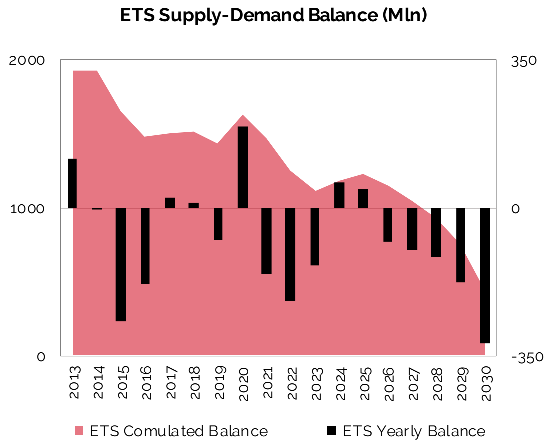
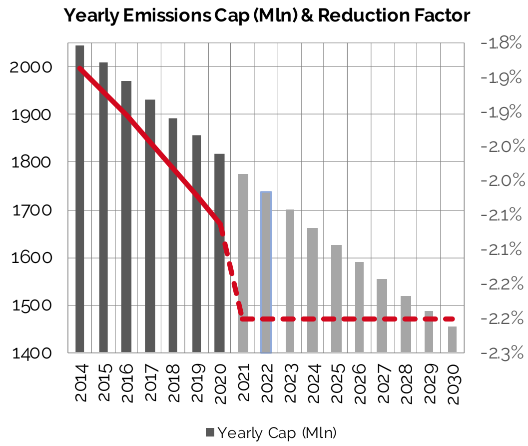


Source: REF-E elaborations

Potential EU Climate Plan related developments of the ETS System

Last September release by the EU Commission Plan for Energy and Climate, including the revision of the emission reduction target (as of year 1990) to 55% by 2050 from the previous 40% and a clear confirmation of the EU ETS System[2] as a key instrument for reaching the above objective raised expectations as to a system reform being proposed to the EU Parliament by June. Expectations of the latter reform to come strengthening of the ETS System by make the CO2 market tighter.



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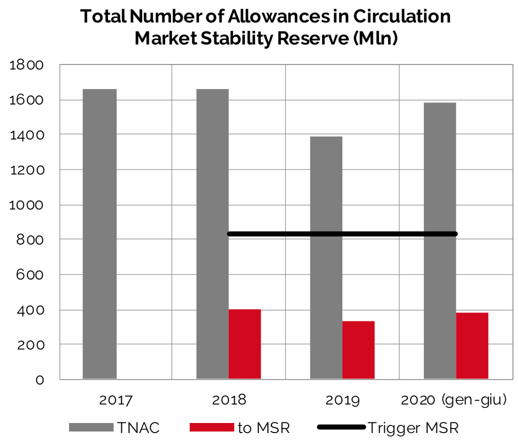
The ETS reform debate in 'Fitfor55'[3] legislative package to make the system more effective in leading to a green transition focuses on the following areas of intervention:



Source: REF-E elaborations

- **Phase 4 linear reduction factor (LFR):** since the beginning of Phase for in Jan-21 the total number of emission allowances is reduced by 2.2% each year and the LFR should be increased to 2.4% by year 2024 at the earliest. The current LFRs were defined based on a 40% overall emission reduction target by year 2030 though, which makes an upward revision very likely.
- **Market Stability Reserve (MSR):** should the Total Number of CO2 Allowances in

2 The EU ETS works on the 'cap and trade' principle. A cap is set on the total amount of certain greenhouse gases that can be emitted by the installations covered by the system. The cap is reduced over time so that total emissions fall.

3 The '55' refers to the 55% net emissions reduction target for 2030 that EU leaders signed off on last year. The aim of the 'Fit for 55' package is to update the EU's 2030 climate and energy laws to reflect this higher target compared to the previous target at 40% emission reduction compared to 1990 levels.

Circulation (TNAC) exceed 833 million tons, a percentage of the TNAC is put in reserve instead of being auctioned. Between 2019 and 2023 the percentage intended to go in reserve for now is 24%. Should the MSR be revised more stringently, both the 833 thresholds could be lowered or the 24% portion of allowances to be put in reserve be raised.

- **Auction share versus free allocations:** 57% but flexible up to 60% allocations are auctioned and 40% freely allocated, with a path to reduce the latter by 10% for sectors not on the carbon leakage list by 2026. A consultation was promoted by the EU Parliament and regulation proposals should be presented by June about the sectors classification, free allowances allocation and carbon border issues under the new 55% emissions reduction target.
- **Aviation and Shipping:** 15% of the aviation sector emission permits is auctioned, while shipping is not submitted at all for now. For both sectors new and or revised regulation proposals should be presented to the European Parliament by the end of June, with focus on the 55% new emission reduction target. Free allocations to the aviation will possibly be reduced, although the recent pandemic-related deep crises of the sector may be considered in the short-term. As of the shipping sector, the EU Parliament aims at accounting CO_2 emitted in the Union ports and during voyages to and from Union ports from 2023.

The **Greens proposal** to the EU Parliament, which we have partially incorporated into our *Green* scenario assumptions, is very stringent and coherent with a 65% emissions reduction target by year 2030, which is seen as necessary to keep the EU in line with a 1.5°C-compatible growth path. In this perspective the following boundaries and targets should be set for the CO_2:

- a 50 €/ton floor from 2023
- a 150 €/ton target by 2030
- a 195 €/ton target by mid 2030s

The main ETS revisions should cover:

- the ending of free allocations
- inclusion of shipping and full aviation
- investing the ETS revenues back into climate action

The UK ETS new market and its impact on the old EU ETS

The UK Emissions Trading Scheme (UK ETS) replaces the UK's participation in the EU ETS from Jan-21 and its design aims at providing continuity of emissions trading for UK businesses. The system is in fact based on the **cap-and-trade** principle and is expected to provide a significant contribution to the 2050 net zero emissions target.

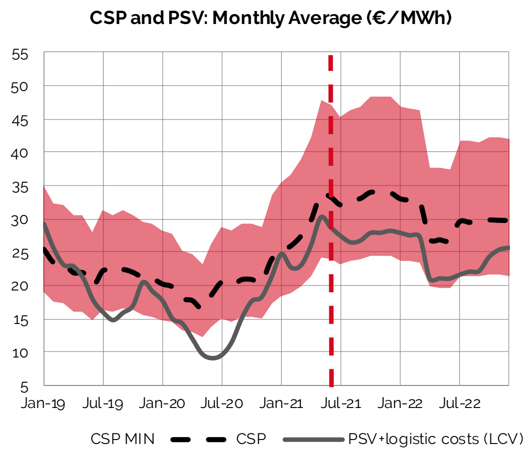
The UK ETS will apply to **energy intensive industries, the power generation sector and aviation** and **auctioning** is the primary means of introducing allowances into the market. Participants will also be able to trade UK ETS emissions allowances on a secondary market. Allowances not sold in an auction are redistributed across the following four auctions up to 125% of those auctions' original number of allowances. Above this limit, allowances will transfer into the **market stability mechanism account**.

In the UK system there is also **a Cost Containment Mechanism (CCM)** for the UK government and devolved administrations to address significant extended price spikes in the market. The interventions can include redistributing allowances between the current year's auctions, bringing forward auctioned allowances from future years to the current year, drawing allowances from the market stability mechanism account, auctioning up to 25% of the remaining allowances in the New Entrants Reserve.

The EU ETS price is seen as the natural reference for UK auctions price and allowance traded price, since large price differences would lead to arbitrage for those holding both allowances. European utilities operating in the UK may in fact have purchased EUA to hedge for their UK forward power generation. This may put some downward pressure on the EU CO_2 price in the short-term, should some of the latter buyers off-load their hedged EUAs after they have secured the UK ETS.

High CO_2 Prices Would Support the Coal to Gas Switch Accelerating the Green Transition

The recent CO_2 up-move increased the cost of operating coal plants, making them less profitable to run compared to gas equivalents, which is made evident by the PSV having stayed below the average Coal to Gas Switch Price. The average efficiency gas generation remained in fact economically preferable compared to the coal one despite gas prices having moved sharply higher over the same period.



Source: REF-E elaborations

In our *Reference* scenario the CO_2 price maintains the economic competitiveness of the average efficiency gas fired combined cycles plants higher than the average efficiency coal ones both in year 2021 and 2022. The switching from high efficiency coal plants to low efficiency gas plants will be guaranteed in the longer-term, should the CO_2 quotations move upward towards 70 €/MWh and the Italian gas price stabilize near 20 €/MWh.

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REF-E Srl u.s.
via Vincenzo Gioberti 5 - 20123 Milano
C.F./P.IVA/Reg.Imprese MI 07642420967
REA Mi 1973946 - Cap. Soc. 38.400 € int.vers
Società diretta e coordinata da Cerved Group S.p.A

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