

POLICY PAPER

The EU Emissions Trading System: Time for a radical overhaul?

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- Calls for the reform of the EU ETS have been numerous over the past years and the current wave of hopeful optimism stemming from the Paris Agreement could provide a timely impetus for more efficient reform measures to be put into place. However, a sizeable political will is necessary both on the side of the Commission, as well as that of the Member States.
- This policy paper proposes a set of recommendations, which would help to overcome some of the system's most serious inefficiencies, namely its inflexibility, the problem of allowance overallocation and continuously low prices of CO2 emissions, while keeping in mind the need to strike a balance between EU's ambitious action on climate change while not jeopardizing its economic competitiveness.





Introduction

With the EU being one of the first major economies to sign, though not yet ratify, the Paris Agreement – the first ever universal, legally binding global climate deal - in April and openly calling for the Agreement to be ratified and put into force 'swiftly' 1, its primary tool for decreasing greenhouse gas emissions is once again poised to come to the limelight. It is not the first time that the EU's primary tool for emissions abatement, the Emissions Trading Scheme (given the unflattering sobriquet 'Extremely Troubled Scheme' by The Economist), 2 comes under scrutiny in its 11-year existence. Calls for its reform or even a radical overhaul have been numerous over the years³ and the much-lauded Paris Agreement provides for a timely and symbolic opportunity, particularly after the US and China recently ratified it as well, to finally proceed with an effective restructuring. However, given the current preoccupation of the EU with a multitude of other crises, ranging from economic to political to societal, coupled with past failures to reach consensus on ETS reforms by all the member states, the likelihood of maintaining the 'business as usual' approach is unfortunately as high as ever. Why is the current state of ETS undermining the EU's selfproclaimed climate leadership position? And what blockages need to be overtaken in order to make it a well-functioning system? This paper answers these questions and offers recommendations on how the ETS should undergo a revision in order to be up to the challenges of global climate change.

http://europa.eu/rapid/press-release IP-16-1485 en.htm.

http://www.tandfonline.com/doi/abs/10.1080/14693062.2014.965 657, and Carraro, C. (Ed.), "The European Emissions Trading System (EU ETS): Ex-Post Analysis, the Market Stability Reserve and Options for a Comprehensive Reform", Nota di Lavoro, 2014, pp. 12-26. Available at:

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2499457.

EU ETS: A pioneer in carbon pricing

Given the failure of the previous COP negotiations, the outcome of the recent COP21 in Paris has sparked new hope among the international community. Boosted by the general optimism, EU officials have already begun negotiating the concrete measures pursuant to the implementation by 2020 of targets set by Paris Agreement into EU directives. 4 However, in order to be able to meet the proclaimed pledge of 'holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above preindustrial levels'5, along with the EU's own target of cutting at least 40% of greenhouse gas emissions (from 1990 levels) by 2030, the EU is facing a nigh-insurmountable challenge that demands effective use of all of its climate policy tools; the most important being the ETS.

The ETS, with its 31⁶ participating countries, is the world's first and largest tool for reducing greenhouse gas (GHG) emissions. Having come into force in 2005 in order to fulfill the carbon reduction targets set out in the Kyoto Protocol and the EU's own 2020 energy strategy, it now covers approximately 45% of total EU emissions with over 11,000 carbon-emitting installations being subject to the system. ⁷ The EU estimates that the ETS participating sectors will have cut their GHG emissions by 43% by 2030, while non-ETS sectors only by 30%.8 Along with its GHG reduction purpose, it is also intended to promote more longterm investment into low carbon technologies. The ETS is

¹ "Paris Agreement Signing Ceremony in New York – The EU Calls for Swift Ratification", European Commission Press Release, 2016.

[&]quot;Extremely Troubled Scheme", The Economist, 16 February 2013. Available at: http://www.economist.com/news/finance-andeconomics/21571940-crunch-time-worlds-most-important-carbonmarket-extremely-troubled-scheme.

³ See for example: Grosjean, G. et al., "After Monetary Policy, Climate Policy: is Delegation the Key to EU ETS Reform", Climate Policy vol. 16, no. 1, 2016. Available at:

⁴ See: "Paris Agreement – Key Elements", European Commission. Available at:

http://ec.europa.eu/clima/policies/international/negotiations/paris

[/]index_en.htm.

5 "Paris Agreement", United Nations, 2015, Article 2 (1.a). Available

http://unfccc.int/files/essential_background/convention/applicatio n/pdf/english paris agreement.pdf.

⁶ Currently, the ETS participating countries encompass the EU28 plus Iceland, Liechtenstein and Norway.

[&]quot;The EU Emissions Trading System (EU ETS) - Overview", European Commission. Available at:

http://ec.europa.eu/clima/policies/ets/index_en.htm.

[&]quot;2030 Climate and Energy Framework - Overview", European Commission. Available at:

http://ec.europa.eu/clima/policies/strategies/2030/index_en.htm.



based on a cap-and-trade principle, which means the European Commission sets a cap on the levels of CO2 permissible to be emitted by the EU as whole. Afterwards, a given number of European Emission Allowances (EUAs) are issued to reflect the set cap.⁹

These allowances are then distributed among the EU member states in two rounds. Firstly, each country receives a certain amount of allowances in the free allocation phase as well as a number of set aside allowances from the New Entrants Reserve. 10 The rest, approximately 43% of all the allowances, are distributed based on the following calculation: 88% of these allowances are distributed on the basis of the country's share of verified emissions from EU ETS installations in 2005 or the average of 2005-2007, whichever is highest. 10% are allocated to less wealthy member states to help them reduce carbon intensity of their economies, while the remaining 2% are given as a "Kyoto Bonus" to countries who have cut emissions by more than 20%. 11 A market exchange space is in place to enable the trading of the allowances at a floating market price (as opposed to carbon tax schemes where the price of carbon is fixed by the state). The trading cycles are predetermined, with the current, third, cycle running from 2013 to 2020.12

Inflexibility and over-allocation

Several short-term changes have already been implemented in the run of the current project in order to address the apparent inefficiencies that were revealed

during its first two phases. The greatest inefficiency has proven to be the inflexibility of the system ¹³, which combines a government-regulated activity with a free market mechanism. Unlike usual exchange markets, the emissions exchange market gives free rein to the Commission (in consultation with the relevant sectors and stakeholders) to set the volume of the allowances, while their price remains subject the laws of supply and demand. However, the Commission must respect the Council's conclusions determining the exact number of allowances in the system; thus the Commission itself cannot influence the ambition of the ETS. This half-managed exchange has over time resulted in a chronic excess of the allowances¹⁴, which has in turn negatively affected their price.

After the scheme's introduction in 2005, the initial price stabilized around 20 EUR per ton of CO2, even briefly reaching 30 EUR in 2006. However, it then started dropping dramatically, hitting the absolute low point of near zero in 2007/2008 and only slowly trudging back up. Towards the end of Phase II in 2013, the price of one EU Allowance unit was at mere 5 EUR per ton of CO2,¹⁵ while the estimated environmental cost of one ton of carbon is at least 30 EUR¹⁶, let alone its social cost.

In order to tackle this malfunction, the Commission introduced a one-off solution at the beginning of Phase III, in the form of 'back-loading', which was supposed to postpone the distribution of 900 million EU Allowance units until the end years of Phase III (i.e. 2019-2020). The Commission has since agreed that these will be re-inserted

 $^{^9}$ European Emissions Allowances (or EUAs) are the official units used for trading in the EU ETS. Each EUA represents one ton of CO2 that the holder is allowed to emit.

¹⁰ Interview with Jan Tůma, head of emissions trading unit, Ministry of the Environment of the Czech Republic.

¹¹ "EU ETS Auctioning", European Commission. Available at: http://ec.europa.eu/clima/policies/ets/auctioning/index_en.htm.

 $^{^{12}}$ Phase I ran from 2005 to 2007, Phase II from 2008 to 2012, and Phase IV is going to run from 2021 to 2030.

¹³ See for example: Laing, T. et al., "Assessing the Effectiveness of the EU Emissions Trading System", Centre for Climate Change Economics and Policy Working Paper No. 126 & Grantham Research Institute on Climate Change and the Environment Working Paper No. 106, January 2013. Available at:

http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2014/02/WP106-effectiveness-eu-emissions-trading-system.pdf.

¹⁴ Currently, there are 2 billion extra allowances in circulation, which is roughly the same as the entirety of the EU ETS sectors' emissions in 2005-2007, as well as the EU ETS cap set for 2008-2012.

 $^{^{\}rm 15}\,{\rm See}$ statistics of European Emission Allowances on the Global Environmental Exchange, EEX. Available at:

https://www.eex.com/en/market-data/emission-allowances/spot-market/european-emission-allowances#!/2013/07/17.

¹⁶ "Effective Carbon Rates on Energy", OECD, 2015. Available at: https://www.oecd.org/tax/tax-policy/effective-carbon-rates-on-energy.pdf.





into Phase IV's Market Stability Reserve (MSR)17, a novel system that will be elaborated upon in the next subsection. It is clear that neither will solve the problem of oversupply in the long run; reintroducing the allowances later will only postpone the market deformation into the future. Furthermore, there is little indication that the back-loaded allowances will fulfill their purpose and be sold at a higher price in Phase IV, as the market trends estimate the prices to remain low. 18 Similarly, it is estimated that the MSR, although having its merits, will have little to no impact on the integral issues of the ETS, as it only ever comes into effect in case of gross oversupply and thus does not address the inefficiencies continuously. 19

Among the root causes are not only the inflexible combination of the market- and state-run approaches, but also the aforementioned consultations of the Commission with the affected industries. Due to this practice, the volume caps have never been set low enough to affect the largest emitters. It has also resulted into some sectors being allocated disproportionately more allowances than others as many member states deliberately allocated too many allowances to some of their crucial industries in order to protect their competitiveness, partly in response to national industry lobbying.²⁰ This over-allocation, coupled with the unpredictable economic slow-down caused by the financial crisis, are the two main reasons the price of allowances is now too low to have the desired effects of forcing emitters to invest into less carbon-intensive solutions.

Lack of commitment from third countries and lack of EU leadership

In addition to the above stated fallacies of the system itself, the lack of global commitment to effectively combat climate change and curb GHG emissions presents additional obstacles to the optimization of the system. The EU cannot generate the necessary political will to make its system more ambitious if it means widening the gap between the EU and third countries, as it would exacerbate the already substantial threat of carbon leakage.²¹

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However, despite potentially wielding considerable influence, the EU is not exercising its power to apply concrete, noticeable pressure on third countries to fulfill their climate obligations. This makes for an unfortunate some would say convenient - stalemate where attempts to revise the ETS are facing hard circumstances, in part also because several parties have a vested interest in maintaining the status quo. That being said, with the US and China recently ratifying the Paris Agreement, the EU is less able to refer to third countries when justifying lack of progress - particularly when the EU has yet to ratify the Paris Agreement.

¹⁷ http://ec.europa.eu/clima/policies/ets/reform/index_en.htm

¹⁸ Acworth, W., "Can the Market Stability Reserve Stabilise the EU ETS: Commentators Hedge their Bets", DIW Roundup Politik im Fokus 23, 5 June 2014. Available at:

https://www.diw.de/de/diw 01.c.465890.de/presse/diw roundup/ can the market stability reserve stabilise the eu ets comment ators hedge their bets.html

¹⁹ Carraro, C. (Ed.), "The European Emissions Trading System (EU ETS): Ex-Post Analysis, the Market Stability Reserve and Options for a Comprehensive Reform", Nota di Lavoro, 2014, p. 15-17.

²⁰ "Over-allocation of emission allowances in the EU", University of Groningen. Available at:

https://www.futurelearn.com/courses/energytransition/0/steps/10202.

²¹ Carbon leakage occurs when industrial activities are outsourced to second countries with laxer environmental regulations in order to avoid paying the price for carbon in the first country. The overall volume of emitted carbon remains or even increases, yet the adequate price is not paid.



Phase IV: Time for more radical solutions?

So far, several proposals are being considered by the Commission for Phase IV to address the underlying problems explained above. Foremost is the creation of a Market Stability Reserve (MSR), intended to change the amount of annually auctioned CO2 permits based on the amount of CO2 permits in circulation.²² Each year, 12% of the allowances in circulation would be placed in the reserve, provided the number of allowances in the two previous years exceeded 833 million. At the same time, if there were less than 400 million allowances in circulation, the reserve would release 100 million allowances onto the market. The system is automatic, thus without political interference.²³ Additionally, a reduction factor at which the number of available allowances is decreased each year will rise from 1.74% in Phase III to 2.2% during Phase IV, thus ultimately cutting down 43% of the EU CO2 emissions in the ETSaffected sectors compared to 2005.24 Aside from obviously incentivizing the reduction of emissions, the intention of decreasing the cap is to lower the threshold at which it becomes necessary for businesses to purchase allowances.

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Despite being steps in the right direction, neither of these proposed initiatives will completely rectify the current developments and facilitate the desired outcome in a timely and decisive manner. It does not address the root problem of the system being too rigid and unresponsive to unforeseen externalities, such as economic fluctuations, technological discoveries or changing oil prices, nor does it address the fundamental problem of collusion with actors whose interests in sustainable climate developments are secondary to having a leeway in CO2 emittance. 25 Additionally, the EC has not elaborated – despite inquiries – on how it arrived at its 833 and 400 million estimations, paving the way for speculations that lobbyists have influenced the numbers.²⁶ While it is commendable that the system is unbiased and removed from potential political whims, the number 833 is simply too high for the MSR to achieve its desired effect; it is almost half of all EU ETS emissions during the 2008-2012 period.

The current revision agenda

The current agenda for ETS revisions comprises of three key elements: preventing carbon leakage; establishing financial mechanisms for innovation and modernization; and simplifying the system in order to make it less of an administrative hassle particularly to smaller emitters.²⁷ All three points are admirable and steps in the right direction, with the last point being of little contestation. The two former, however, remain politically

 $^{^{\}rm 22}$ "Decision of the European Parliament and of the Council concerning the establishment and operation of a market stability reserve for the Union

greenhouse gas emission trading scheme and amending Directive 2003/87/EC", COM(2014) 20 final, 2014/0011 (COD), 2014, p. 6-7. Available at:

http://www.ipex.eu/IPEXL-

WEB/dossier/document.do?code=COM&year=2014&number=20& extension=null.

[&]quot;ETS Market Stability Reserve – At a glance", European Parliament, 2015. Available at:

http://www.europarl.europa.eu/RegData/etudes/ATAG/2015/5643 62/EPRS_ATA(2015)564362_EN.pdf.

²⁴ See: "Decision of the European Parliament and of the Council concerning the establishment and operation of a market stability reserve for the Union

greenhouse gas emission trading scheme and amending Directive 2003/87/EC", 2014, and "EU ETS linear reduction factor (LRF)", Emissions - EU ETS.com. Available at: http://www.emissionseuets.com/linear-reduction-factor-lrf.

25 "Researchers criticise European ETS", ABC News, 2011. Available

at: https://www.youtube.com/watch?v=EciEI7avmuU.

While it is a conjecture, it would be consistent with general practices of lobbyists, coupled with the fact that the Commission has yet to clarify how it arrived at said numbers. See: Fagan-Watson, B., "Big business using trade groups to lobby against EU climate policy", The Guardian, 15 April 2015. Available at: https://www.theguardian.com/sustainable-

business/2015/apr/15/big-business-trade-groups-lobby-againsteu-climate-change?CMP=share btn tw.

27 Interview with 1-- To

Interview with Jan Tůma, head of emissions trading unit, Ministry of the Environment of the Czech Republic.



contentious: the EU is on a knife's edge here as pushing for the increase of emission prices would mean increased risks of carbon leakage and potential blow to EU's competitiveness, while refraining from taking any action whatsoever would render its pledges to combat climate change hypocritical. Curbing carbon leakage is essential, but as long as corporations and lobbyists remain influential, it is likely that the EU will err on the side of caution and opt for maintaining a high supply of allowances in order to avoid an exodus of economic powerhouses to third countries less committed to environmental protection.

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Recommendations

This paper proposes several recommendations to address the above stated shortcomings of the ETS:

First and foremost, more ambitious and decisive climate goals than the ones laid out in the Paris Agreement are a simple necessity, as indicators of their insufficiency have are already arisen.²⁸ Simple

as it may sound, the urgency of reversing the current climate trends cannot be overstated, and more ambitious climate goals are the foundation upon which further reforms shall be based. Although it is unrealistic to expect a new agreement of sufficient ambition any time soon - Paris being unique and recent – it is possible to adjust the tools used to achieve the existing aims (such as the ETS) to better cope with the deteriorating climate change situation.

One such way could be expanding the ETS to include more sectors, as sectors within the ETS have decreased their emissions considerably compared to non-ETS sectors. The global shipping sector would be important to include since it would also mitigate carbon leakage, and such an expansion could draw on the lessons already learned from the experience of expanding the ETS into the aviation industry.

Secondly, limiting corporate influence in the process of setting the allowance cap is essential in order to reach a lower volume of permissible emissions. 29 While a sustainable marriage between economic competitiveness and progressive climate policies is a necessity, the scales are currently tipped in favour of business development, which is also reflected by the European Parliament, which has blocked past attempts at reforming the ETS due to opposition from large energyintensive corporations. 30 Completely disentangling corporate interests from the setting of the allowance cap is arguably unachievable. However, according to IKEA's chief sustainability officer Steve Howard, "there is a silent majority of businesses that want to see effective leadership from government on climate change"31, denoting a potential market for strong leadership on climate change from big corporations.

²⁸ "Scientists warn mankind will miss crucial climate change target eight months after agreeing it", The Independent, 7 August 2016.

http://www.independent.co.uk/environment/scientists-warnmankind-will-miss-crucial-climate-change-target-eight-monthsafter-agreeing-it-a7177556.html

²⁹ A study conducted by Carbon Disclosure Project found that 77% of Global 500 companies used trade associations to lobby against progressive EU climate policy. The study also found that several trade organizations were vehemently opposed specifically to ETS

reforms. Source: Fagan-Watson, B., "Big business using trade groups to lobby against EU climate policy", The Guardian, 15 April 2015.

 $^{^{\}rm 30}$ "ETS, RIP?", The Economist, 18 April 2013. Available at: http://www.economist.com/news/finance-andeconomics/21576388-failure-reform-europes-carbon-market-willreverberate-round-world-ets.

³¹ Fagan-Watson, B., "Big business using trade groups to lobby against EU climate policy", The Guardian, 15 April 2015.



Thirdly, we propose the introduction of 'cumulative diminishing returns' on the buying of allowances. If an actor buys more allowances than its verified emissions for the past two years, it would be subject to cumulative diminishing returns during the initial auction, receiving fewer and fewer allowances while the price remains unchanged. This would serve several purposes: it would ensure that allowances are primarily bought by the emitters needing them rather than by middlemen such as banks, thus also decreasing the susceptibility of the allowances to become subject of **speculation.** It would ensure that corporations would consider investing into low-carbon solutions while expanding rather than buying even more allowances at an incrementally increasing price. This proposal would directly tie the allowances to verified emissions of the affected installations, making them more aligned with their original purpose rather than a mere commodity.

This approach is admittedly heavy-handed and the Commission would run a significant political risk by fundamentally interfering with a system designed for minimal interference. However, the cumulative diminishing returns would only apply to the initial auctioning, not the subsequent trading on the market. Coupled with the drastic lowering of allocations proposed above, the price of allowances would reach desirable levels³², fulfilling their original purpose. Additionally, this system would make it financially unsustainable for non/low-emitters, such as banks, to buy up allowances, making them go to their intended recipients instead. Furthermore, the added revenue from both the higher price and the initial auctions could be utilized to subsidize low carbon transition for the emitters.

Lastly, introducing a price collar set by the Commission would be advisable, establishing minimum and maximum price threshold for the

allowances and thus ensuring a more stable and predictable market.

While this would not fundamentally change the basis of the scheme and its inflexibility, it is necessary that the Commission levy a tighter control over an otherwise free market-based system. The Commission itself has acknowledged this in its special audit report on the ETS, in which it notes that there is insufficient EU-level oversight of the ETS market to make it fulfill its ambitions, but whether this reckoning will translate into tangible changes remains to be seen. 33 For now, the EU Allowances have been recognized as a 'financial instrument', meaning they will fall under the EU Financial Markets Regulation, which should impact trading, market oversight and general security³⁴, but whether it empowers the ETS with more ambition is uncertain.

Nevertheless, the aforementioned recommendations would mitigate the system's main defects and ensure it manages to uphold its key objectives.

Observations on the Czech situation

While not being prominently present in the Czech public debate, the ETS is seen rather positively among the affected actors. Especially thanks to the economic transformation in the 1990s and the burden-sharing principle of the EU, the Czech Republic has been a net beneficiary of the system. The Czech Republic was among the countries who were over-allocated their emissions allowances in trading Phases I & II, meaning Czech installations could engage in selling them rather than buying. However, the trend of over-allocation is coming to and end for the Czech Republic and if the proposed reforms succeed in their envisaged goal of pushing the price of

http://ec.europa.eu/clima/policies/ets/oversight/fag_en.htm.

 $^{^{\}rm 32}$ While this would reduce the carbon market liquidity and thus lead to a lowering of the price due to the majority of the current traders and speculators being non-compliers and/or non-emitters if this proposal was implemented in isolation, it will not do so if coupled with the other proposals, first and foremost a drastic reduction of the allowances.

³³ "The integrity and implementation of the EU ETS", Special Report No. 06, European Court of Auditors, 2016, p. 18-24. Available at: http://www.eca.europa.eu/Lists/ECADocuments/SR15 06/SR15 0 6 EN.pdf.

[&]quot;Ensuring the integrity of the European carbon market", European Commission. Available at:



allowances up, there is a potential problem in the air. Since carbon has been cheap for Czech emitters, there hasn't been enough incentive to transfer to less carbon intensive energy sources.35

The Czech case thus proves right the fears of experts³⁶ who warn that CO2 price instability and volatility will have an adverse effect on investment into low- or zero-carbon solutions. Indeed, a rise in the price of EUAs from the current 5 EUR to around 15 EUR would not make most Czech industrial producers happy, but if an efficient system of compensation is put into place³⁷, the long-term economic effects could be less severe than the current uncertainty.

Conclusion: An overhaul in sight?

The ETS could and should work better, as this paper outlines. Regrettably, reforms depend on the member states, and the inability of the EU member states to reach consensus on ETS reforms in the past risks relegating the scheme to irrelevance. Hopefully, with the renewed commitments to sustainable climate goals the EU has pledged itself to during COP21, the current environment for reforms might be more conducive than it had been in the past.

It is unlikely that the fundamental contradiction between the EU's 'ambitious' climate pledges and the ETS the fact that it caters to political and economic interests even though the climate interests should ideally have the primacy - can be wholly eliminated. However, the recommendations of this paper, coupled with the Commission's own proposals for Phase IV reforms, could imbue the ETS with an adequate power to match the EU's climate ambitions.

The upcoming implementation of the Market Stability Reserve, scheduled to enter into force on January 1st 2019, will be a watershed moment that will likely dictate the future direction and relevance of the ETS. While skepticism abounds on its actual impact, its success or failure will likely give rise to renewed reform attempts, either through positive momentum or as acknowledgement that more radical changes are necessary. The climate's rapid and more visible deterioration might provide political impetus for reforms, the extent of which is yet uncertain. However, nothing indicates that the obstacles that ETS reforms have historically faced will abate. Thus, future reforms will likely have to fall within the framework of the existing system rather than fundamentally reframing it - a reality taken into consideration by the recommendations of this paper, which has striven to strike a balance between the necessity to maintain economic competitiveness, while successfully realizing the EU's ambitions of 'leading by example' in combatting climate change.

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http://www.brattle.com/system/publications/pdfs/000/004/713/ori ginal/Volatile CO2 Prices Discourages CCS Investment Celebi G raves Jan 2009.pdf?1378772123.

³⁷ Currently, 50% of ETS revenues goes to the Ministry of Trade and Investment, which then re-distributes them among the industries most affected by the state-warranted prices of electricity. The other 50% is used to finance energy-savings of Czech households.

³⁵ ČEZ, major Czech energy generating company, has for example invested into a gas-fired power plant, yet it is not making any use of it because with the low price of allowances it isn't economically viable to divest from carbon.

³⁶ See for example: Celebi, M. and Graves, F., "Volatile CO2 Prices Discourage CO2 Investment", The Brattle Group, January 2009. Available at: