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**SYSTEM RESPONSIVENESS
AND THE EU ETS**

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Summary

About the authors

Dipl. math. Sascha Kollenberg is a Research Fellow at the Chair for Energy Trading and Finance at the University of Duisburg-Essen. After receiving his Diploma in Mathematics from the University of Bonn, he is now focusing on modelling of price containment mechanisms in carbon markets and their analysis via optimal stochastic control. Sascha's other research interests include market illiquidity and optimization of numerical methods for finance.

Dr. Luca Taschini is a Research Fellow at the Grantham Research Institute on Climate Change and the Environment at LSE working mostly on the theory of market-based mechanisms, energy economics and technology change. His current research aims to understand both theoretically and practically the functioning and design of markets for permits, including questions of price containment mechanisms, participation restrictions, the linkage of markets and the investigation of policy controls able to promote technology deployment.

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Abstract

SYSTEM RESPONSIVENESS AND THE EU ETS

Whether the European Union Emission Trading Scheme (EU ETS) needs to be reformed – and if so how – is a hot topic in European policy debate.

Reform discussions were prompted by a marked and persistent drop in the price of European Union Allowances (EUAs) from €30 in January 2008 to €4.50 in July 2013. There is broad consensus that the weak price of EUAs has been caused by a combination of the economic recession; the overlap with other policies, such as renewable energy policy and energy efficiency policy; a pronounced short-termism;¹ and the general uncertainty about long-term emission targets within the EU and internationally (Aldy and Stavins, 2012; Neuhoff et al., 2012; Egenhofer et al., 2012; Van den Bergh et al., 2013; Piris-Cabezas and Lubowski, 2013).

There appears to be much less consensus on whether the current low price is *per se* a problem that warrants regulatory reform. Differences of opinion on this point originate partially from different perceptions about the implicit objectives of the EU ETS. For some, the EU ETS was established to achieve greenhouse gas emission reductions at least cost. Others expected the EU ETS to not only deliver greenhouse gas emission reductions, but also to provide a price signal that will induce technological innovation.

There is an ongoing debate about whether stimulating low-carbon investment is a stated aim of the EU ETS. This has made the debate about its reform a polarised, political topic and distracted from the real issue: the lack of *responsiveness* in the system. This policy paper argues that a reform of the EU ETS is justified whether or not one believes that stimulating low-carbon innovation is an objective of the EU ETS. In particular, the paper argues that a large part of the problem is that businesses believe that the price of EUAs will remain low even when the European economy

returns to growth, because the regulator (the European Commission) is unable to respond to downward price shocks by withdrawing permits.²

Intuition suggests that making the system more responsive to changes in the economic circumstances has economic appeal. This is supported by academic research which shows that loosening the emissions cap when the price of EUAs is extremely high and tightening it when the price is extremely low, could lower the expected cost of achieving emission reduction targets.³

In a bid to respond and restore credibility in the EU ETS, the European Parliament has passed proposals to temporarily withhold, or backload, 900 million EUAs from the system. However, analysis in this paper shows that backloading is insufficient; although it means that EUAs will be scarcer in the short-term, there is no impact on the (long-term) market price expectation. One-time measures to reduce the EUA surplus are insufficient even if EUAs are removed from the market permanently, because they treat the symptom – weak price – rather than the cause – a lack of responsiveness.

There are a wide range of conceivable mechanisms that could be used to make the EU ETS more responsive to changes in economic circumstances, technological advancement and overlapping policies. A supply management system that can add and withdraw permits from the market, based on an agreed set of rules, is appealing to a broad range of stakeholders because it would require minimal intervention in the market. The rules that would guide such a system, however, are still under discussion.

Two options seem viable: a rules system based on a volume trigger or a rules system based on

1 Short-termism indicates an excessive short-term focus by some corporate leaders, investors, and analysts combined with insufficient regard for long-term strategy. Such view can undermine the market's credibility, and discourage long-term investments.

2 The EU ETS has a provision for the event of excessive price; Article 29a, accounts for the possibility to make available allowances when „for more than six consecutive months, the allowance price is more than three times the average price of allowances during the two preceding years“.

3 This is analogous to the cost advantage of quantity over prices identified in the academic literature (Weitzman, 1974; Hepburn, 2006; Newell and Pizer, 2008).

a price trigger. This policy paper argues that price-based triggers are more transparent, less open to manipulation and easier to regulate than volume based triggers.

This paper gives an overview of how a rules-based reserve management system could be designed using a price-based trigger.