



# On the borders of the market: EU emissions trading, energy security, and the technopolitics of ‘carbon leakage’



Kärg Kama

School of Geography and the Environment, University of Oxford, South Parks Road, Oxford OX1 3QY, United Kingdom

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## ABSTRACT

The difficulties of organizing emissions trading in line with the principles of economics have led economic sociologists to interrogate the significance of political compromises and technical conditions to the performance of markets. This article argues that sociological studies of ‘techno-politics’ should be complemented with a geographical perspective concerned with how such market experiments are territorialized in relation to wider socio-technically distributed practices. Focusing on the setup of a regionally concentrated and integrated European market for carbon, it investigates a particular compromise made between climate and energy policies in the post-2012 trading rules for the electricity sector: a nexus created between the risks of energy insecurity, competitive disadvantage, and ‘carbon leakage’. The resistance of EU border states to carbon pricing has enabled ‘carbon leakage’ to be re-conceptualized as a threat of transferring electricity generation to non-market suppliers, which reinforces state-centred strategies of carbon-intensive production. This case evidences three fundamentally spatial predicaments of technopolitics, contributing to geographical studies of marketization. Firstly, the politics of allocating emissions allowances is exacerbated by the territorial premises of the market that bring neoliberal forms of governing climate change into conflict with state sovereignty claims. Secondly, the technical aspects of calculating carbon exchange cannot be dissociated from other transboundary modes of circulation in the market region, such as electricity transmission networks. Thirdly, experiments with carbon marketization can have spatially differentiated effects, challenging the enclosure of market territory and creating a contentious ‘frontier region’ with distinct trading rules on the borders of the market.

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## 1. Introduction

The problem is that the frame or border of the economy is not a line on a map, but a horizon that at every point opens up into other territories (Mitchell, 2002, p. 292).

In a series of recent articles, Donald MacKenzie has noted that social science research has paid very little attention to how the evolution of markets for trading greenhouse gas emissions involves both political decisions and specific technical matters, or what he terms the ‘technopolitics’ of carbon market construction (MacKenzie, 2009a, 2009b, 2010). This paper takes MacKenzie’s point further by arguing that there is a need to add a spatial dimension to the analysis of technopolitics, contributing to the studies of ‘geographies of marketization’ (Berndt and Boeckler, 2012). Following recent work in economic sociology informed by Science and Technology Studies (STS), ‘marketization’ indicates the constructed, composite and dynamic nature of concrete markets in the making, whereby things such as emissions become commodified and enter into the processes of

economic calculation, valuation and exchange (Çalışkan and Callon, 2010). The geographical perspective employed here enables the design of carbon markets to also be understood as a fundamentally territorial exercise, which is being reproduced in relation to rival techno-political issues and expertise concerned with different logics of security.

The paper focuses on a recent shift in the EU carbon trading regime, which can best be witnessed in a Communication published by the European Commission in May 2010. The Communication explores the possibility of moving beyond the objective to cut 20% of EU emissions by 2020 in light of the economic crisis and analyses the potential side-effect of outsourcing carbon-intensive production to non-EU countries. This is known in the economics literature as the risk of ‘carbon leakage’. In this document, the Commission indicates that attempting to tackle climate change with a market-based policy instrument, the EU Emissions Trading Scheme (EU ETS), may interfere with the implementation of a common energy policy. While stating that the greatest potential for further emissions reduction lies in the electricity sector, the Commission concedes for the first time that carbon leakage may generate legitimate energy security concerns and affect the functioning of the internal energy market:

E-mail address: [karg.kama@ouce.ox.ac.uk](mailto:karg.kama@ouce.ox.ac.uk)

There are cases where carbon leakage can have effects other than loss of competitiveness. For some Member States at the periphery of the EU with easy interconnection to countries outside the EU, there could be an impact on energy security. For example, this is the case for the Baltic States, given the unique situation of the Baltic electricity markets. This is one of the reasons why the ETS already provides for an optional and partial exemption from full auctioning for these countries. Investments in the transmission grid can help reduce the risk to electricity security. In addition, the Commission will closely monitor developments and will, if appropriate, take further measures with a view to enhancing energy security and providing a level playing field for competition on the electricity markets (Commission, 2010b, p. 11).

The Communication not only reveals that the EU scheme accommodates certain compromises between energy and climate security beyond the Kyoto commitment period ending in 2012, but epitomizes the spatial envisioning of the market as a ‘territory’ (Mitchell, 2002) that needs to be continuously renegotiated in relation to other socio-technically distributed practices. Specifically, it leads us to ask how transnational electricity infrastructure networks may affect the enclosure and calculation of carbon exchange within the borders of Europe. Beyond MacKenzie’s contribution, the technological constituents of the carbon economy are only beginning to be addressed in critical literature (see Boykoff et al., 2009; Bridge, 2011; Newell et al., 2012). Yet the exercise of setting up an EU carbon market is firmly rooted in the formation of what has been called a European ‘technological zone’ through wider processes of market integration and technical harmonization (Barry, 2001). For Barry, a technological zone represents a standardized regime that is formed to facilitate the circulation of goods, people and information; “a space within which differences between technical practices, procedures or forms have been reduced, or common standards have been established” (Barry 2006, p. 239; see also Dunn, 2005). One could say that the EU ETS provides an exemplary case of a Europe-wide techno-zone in the making, the failure of which may reveal the incapacity of the Union to operate a common political space (cf. Callon, 2004). The admission of “electricity security” thus calls into question the possibility of a fully integrated and territorially bounded marketplace structured by national borders, which is a prerequisite of the EU economy and the neoliberal exercise of carbon valuation and exchange in regional markets more broadly (cf. Bailey and Maresh, 2009; Bumpus and Liverman, 2008; Knight, 2011).

The starting point for analysing how attempts at containing both emissions and electricity within the EU economy may contradict and subsequently challenge the formation of a homogeneous trading zone is to recognize that ‘the market’ does not represent a universal, pre-existing set of affairs. Rather, according to Callon, MacKenzie and others, it is brought into being in diverse and open-ended forms through the interaction of various calculations, programmes and agencies with concrete material settings and devices (Çalışkan and Callon, 2010; Callon, 1998; Callon et al., 2007; MacKenzie et al., 2007; Mitchell, 2007). While these authors have mainly interrogated the performative functions of economic theory in organizing markets, their recent work offers opportunities for exploring how ‘marketization’ can be not just technologically conditioned and politically contested, but a geographically variegated process. Despite the growing relevance of poststructuralist theory for geographical research on markets (see Berndt and Boeckler, 2009, 2012), market-led approaches to emissions reduction have provoked little discussion between economic sociology and geography (but see Lansing, 2012; Powells, 2009). To be clear, there is no lack of academic literature on emissions trading in general, especially regarding the EU scheme. Since its launch as the world’s

largest carbon market in 2005, it has provided material for volumes of books that describe how carbon pricing has become the cornerstone of EU climate policy and document the lessons learned from the first years of trading. This scholarship is largely dominated by economists and lawyers, who have explained the specific features of the ‘cap-and-trade’ approach to allocating CO<sub>2</sub> allowances and the resulting effects of price fluctuations, over-allocation and limited abatement (Ellerman et al., 2007, 2010; Faure and Peeters, 2008). Geographers, meanwhile, have joined ranks with political scientists (e.g. Skjærseth and Wettstad, 2008) to explore the shifting relations between state and non-state actors at multiple levels and scales of governance, and their implications for the negotiation of the EU ETS reforms (Bailey, 2007; Bailey and Maresh, 2009). Although recent analyses of the scalar politics of neoliberal climate governance distinguish between what Bailey and Maresh (2009) call the ‘regulatory’ and ‘territorial’ logics of the EU ETS, the latter are ascribed broadly to the alliances formed between state authorities and the industry, without specifying the political rationales nor the technical and material settings that preclude the integration of the market space in practice.

The difficulties of delimiting the market territory across diverse socio-material contexts are evidenced by the wide-spread resistance to carbon pricing in the new member states located on the eastern borders of the EU that have long associated energy security with the exploitation of local fossil fuel resources. The empirical focus of this study is on a single country, Estonia, which poses a notable paradox for the design of carbon trading rules. While radical economic reforms have rendered Estonia a poster-child for meeting EU aspirations (Kuus, 2004), especially in recent times of financial austerity measures, its electricity sector has largely been operated ‘outside the market’ and almost entirely dependent on using oil shale, a very carbon-rich resource. Concealed behind the “Estonian exceptionalism” based on market liberalism combined with a strict fiscal policy, as *The Economist* (2011) praises the newest entrant in the euro-zone, is a state-owned electricity monopoly that yields one of the highest degrees of self-sufficiency in EU energy production (Eurostat, 2011), but also one of the highest levels of per capita emissions in the world (IEA, 2011). Despite the extreme carbon-intensity of the national economy the state government has managed to subvert the demands of neoliberal climate policy by appealing to the country’s geopolitical location between the European market and the former Soviet empire. This argument is further facilitated by the fact that the Baltic countries remain physically interconnected with the transmission grid of the CIS. While there is now growing recognition in postsocialist studies that the vision of a linear “transition” from state-centred planning into a market economy has been misleading, at best, Estonia’s energy sector remains a challenge for the consolidation of the single market (e.g. Bouzarovski, 2009; Dunn, 2004; Pickles, 2010; Smith and Timar, 2010). To echo the words of Kuus (2007, p. 8), the country “has stumped Sovietologists, transitologists, and EU bureaucrats alike, as all have seen their most elaborate theoretical frameworks undermined by inconvenient developments on the ground”. Representing a profoundly disturbing case for EU integration, Estonia therefore provides a unique opportunity to learn about the socio-technical configuration of carbon markets and the spatially distributed processes of ‘marketization’ more generally.

Learning from the Estonian case,<sup>1</sup> the following analysis both draws on and complements the performativity approach and

<sup>1</sup> The paper is an outcome of a larger research project that studied how oil shale exploitation reconfigures the carbon economy and politics (Kama, 2013). The following observations have benefited from extensive fieldwork with interviews carried out in Estonia during 2010 and further interviews in Brussels with DG Climate Action and Estonian diplomats in June 2011, as well as in-depth analysis of EU policy documents, court materials and local media sources.

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