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Money for nothin' and coal for free: 'Technology neutrality' and biomass development under the Flemish tradable green certificate scheme

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ABSTRACT

Recent literature has highlighted the creation of multiple equivalences as an important factor underpinning the rise of market-based mechanisms for environmental regulation. Extending these insights into the field of renewable energy policy, this article focuses on one example of this trend – namely the principle of technology neutrality as applied under the Flemish tradable green certificate scheme – and analyzes the concrete ways in which it has shaped the evolution of the Flemish renewable energy landscape. Concretely, the article shows that technology neutrality played a key role in promoting the uptake of biomass combustion in old coal power plants in Flanders, which led to a number of undesirable outcomes and gave rise to significant opposition. Correcting these shortcomings required a number of policy interventions on the part of the Flemish government that fundamentally moved the scheme away from the principle of technology neutrality and towards a more hybrid RE support system, suggesting that the promotion of technology neutrality was fundamentally misguided. Together with similar experiences from related market-based instruments, this suggests that the promotion of technology neutrality has far-reaching implications for the environmental effectiveness of climate and energy policies. In light of the continued promotion of the principle, the article calls for full recognition of the inherent technological choices that are being made through the promotion of policies that purport to be technology-neutral.

1. Introduction

Over the last two decades or so, market-based mechanisms have become the go-to solution for governments and businesses coming to terms with the multifarious manifestations of environmental crisis. Be it wetland banking and biodiversity offsetting for 'nature conservation' (Madsen et al., 2011; Robertson, 2004, 2006), carbon offsetting and emissions trading for climate change mitigation (Peters-Stanley et al., 2014; World Bank, 2014), or fisheries management through individual transferable concessions (Lucchetti et al., 2014), the use of markets to facilitate an environmentally 'virtuous' (Paterson and Stripple, 2012) transformation is now common practice. Justifying this development is an alluring narrative about the fruitful marriage of environmental and economic concerns. Markets, it is argued, are by far the best instruments to put us on the path towards a more sustainable society because they prioritize cost-efficiency and thus allow the achievement of environmental objectives at minimum economic costs. The EU's emissions trading scheme (EU ETS), for example, emerged as the main instrument in the European climate and energy policy framework primarily because it promised to minimize mitigation costs for society and protect the competitiveness of EU businesses, thus shielding the European economy from the most adverse effects of transitioning away from fossil fuels (Ellerman and Joskow, 2008; EC, 2014a; Hedegaard, 2011; Skjærseth and Wettestad, 2008).

Underpinning this development is a belief in the commensurability of different socio-ecological realities across geographical and temporal scales, or what has variously been described by critics as the creation of "performative equations" (Lohmann, 2006a) or the practice of "making things the same" (MacKenzie, 2009). As Castree (2003) puts it, for nature to become a marketable commodity requires a process of rendering "qualitatively distinct things [...] equivalent and saleable through the medium of money" (p. 278). This process relies on different degrees of privatization, contextual abstraction, individuation, monetary valuation and fetishism, that obscure the distinctiveness of environmental objects or services and subsume them under strictly quantitative categories that ultimately enable the creation of value (Castree, 2003, 2009; Robertson, 2012). As a growing body of literature demonstrates, this 'dumbing down' of environmental complexity has potentially far-reaching implications for the socio-ecological integrity of

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policy-making and the legitimacy that follows from this. Lohmann (2011a) for example outlines how carbon markets conflate ontological and functional differences between emission reductions when they equate emissions from abiotic (fossil fuels) with those from biotic (forestry-based) sources, or when they substitute counterfactual reductions from a hydropower project in India for actual emission reductions from a coal power plant in Germany. Similarly, Stephan (2012) shows how the operationalization and continuous broadening of REDD+ involved the commensuration of qualitatively diverse landscapes and their discursive reduction to different manifestations of the "carbonified forest" (p. 632), i.e. to a stock of carbon measured in tons of CO_2-equivalent that is fundamentally blind to the multi-layered meanings of forest landscapes in different social and environmental contexts.

While such commensuration processes have been explored in some detail for carbon (offset) markets (Bumpus, 2011; Lohmann, 2006a; MacKenzie, 2009), for wetland banking (Robertson, 2006), and for various biodiversity markets (Pawliczek and Sullivan, 2011; Sullivan, 2013), they remain relatively underexplored outside of these fields. In part this can be attributed to a predominant focus in the literature on single resources rather than on comparative studies of market schemes across a range of different 'natures' and policy arenas (cf Bakker, 2009). This is unfortunate because the lack of comparative analysis arguably stands in the way of a more general argument on the effectiveness of these new, market-based policies. Empirical studies into the creation of geographical, temporal, technological, ... equivalence under a wide array of market instruments would allow for more substantiated comparisons and thereby help discern general tendencies and dynamics. This exercise could help disentangle, to the extent possible, problems of policy implementation and 'erroneous design' from more structural issues with the logic behind market-based environmental policy, which is a key point of debate, for example, in the literature on emissions trading (Carton, 2014; Lohmann, 2012; Paterson and Newell, 2012). In other words, studies that look at commensuration beyond carbon and biodiversity markets could help to falsify the claims of some critics in those two fields, namely that the difficulties encountered within those markets derive from internal contradictions in the nature of market-based environmental policies, and not just from inadequate policy design or faulty government regulation.

This article seeks to contribute to this debate by extending the analysis of commensuration under 'green neoliberalism' (Bakker, 2010) to the field of renewable energy policy, concretely looking at experiences with the tradable green certificate (TGC) market in Flanders, Belgium. It does this by engaging the claim of technology neutrality, one of the key ideological constructs underpinning commensuration practices in TGC markets. Apart from its centrality to TGC markets, this analytical focus is justified by the continued promotion of technology neutrality in the EU ETS (EC, 2012a, 2014a), suggesting that any lessons from TGC markets would be instructive beyond a narrow energy policy framework. In brief, technology neutrality assumes that different technologies can be unproblematically equated under a single market mechanism, and that the market will then gravitate towards the most cost-efficient renewable energy (RE) technologies. In line with prevailing economic theory, this means that successful technologies are 'selected' on purely economic and therefore politically neutral grounds, which is put forward as the most desirable approach to energy policy. In this article I scrutinize these claims by examining how the application of technology neutrality under the Flemish TGC influenced the emergence of biomass combustion as Flanders' renewable energy technology of choice. By focusing on the concrete 'work' that the principle of technology neutrality performed in the evolution of the Flemish RE landscape, I thereby hope to bring out some of the concrete ways in which the conflictual logics of technology neutrality produced a range of undesirable results and ultimately ended up undermining the objectives of the Flemish government. In so doing this article contributes a case study of technology-neutral policy making while furthering theoretical arguments on the contested dynamics of market-based environmental regulation.

The remainder of this article is structured as follows. In the next section, I briefly introduce the literature on TGC markets and elaborate on the principle of technology neutrality, thereby delimiting the analytical framework and pointing to some preliminary parallels with other market mechanisms. I then introduce the Flemish TGC and summarize its evolution, concretely focusing on the uptake of large-scale combustion of biomass in coal power plants. This focus was chosen because these are the installations which so far have been the greatest beneficiaries of the scheme. Drawing on the available literature and interview material, the experiences with the Flemish scheme are then discussed in terms of the contradictions of technology-neutral climate policy, the impact this had on the uptake of RE energy in Flanders, and the steps that policy makers took to alleviate problems with the scheme. The conclusion summarizes the discussion and also connects back to the critical literature on neoliberal governance and emissions trading in particular, suggesting some insights that a focus on technology neutrality could bring for a generalized critique of market-based environmental policies. The arguments put forward in this text are based on an analysis of selected policy and company documents, complemented with 1 telephone interview and 9 face-to-face interviews with representatives from Flanders' main power companies, different government agencies, European and Belgian industry associations, and the European Commission's Directorate-General for Climate Action. Interviews were carried out between March and December 2013 in Brussels.

2. Tradable green certificates and technology neutrality

While EU governments have put in place a wide range of domestic policies to meet their 2020 (and soon 2030) renewable energy targets and reduce energy dependence, feed-in tariffs (FIT) and tradable green certificate (TGC) schemes are probably the most common choices (Jaraitė and Kažukauskas, 2013). The two represent somewhat opposing approaches to RE policy. Feed-in tariffs provide a fixed (though generally differentiated per technology) price for RE production and thus constitute a form of direct government subsidy to RE producers. TGC policies on the other hand put in place a quota-based trading system in which price levels are ultimately dependent on market dynamics. Under a TGC scheme, the energy regulator establishes an annual RE quota that electricity suppliers (or in some cases consumers) are obliged to meet while simultaneously distributing green certificates, representing a guarantee of the renewable character of electricity, to RE producers. To comply with their RE quotas suppliers are then expected to purchase TGCs from electricity producers (Nielsen and Jeppesen, 2003; Verhaegen et al., 2009), which in turn creates the necessary conditions for a functioning market in green certificates to arise. Essentially therefore, the difference between FITs and TGCs is the difference between a price-driven RE policy and a quantity-driven one that leaves pricing to the market. In practice though, a degree of convergence has been occurring in recent years. Some form of price control is now present in most TGC schemes, including, as will be elaborated below, in Flanders.

The development of TGC schemes has been closely intertwined with the discussions on the Kyoto Protocol's flexible mechanisms and the subsequent emergence of for example the EU ETS (Verbruggen and Lauber, 2012). As such, TGCs are underpinned