Energy Policy ∎ (∎∎∎∎) ∎∎∎–∎∎∎

Contents lists available at ScienceDirect

Energy Policy

journal homepage: www.elsevier.com/locate/enpol

Creating a level playing field? The concentration and centralisation of emissions in the European Union Emissions Trading System

Gareth Bryant

Department of Political Economy, School of Social and Political Sciences, Faculty of Arts and Social Sciences, University of Sydney, Merewether Building H04, NSW 2006, Australia

HIGHLIGHTS

- 20 ultimate owners are responsible for one-half of 2005–12 EU ETS emissions.
- 83 installations are responsible for one-third of 2005–12 EU ETS emissions.
- Focus on technological dependence on coal and the corporate institutional form.
- Energy liberalisation policy has consolidated responsibility for emissions.
- Carbon markets have diffused responsibility for addressing climate change.

ARTICLE INFO

Article history:
Received 1 December 2015
Received in revised form
27 May 2016
Accepted 3 June 2016

Keywords:
Emissions trading
EU ETS
Energy liberalisation
Climate change
Carbon accounting
Coal

ABSTRACT

This article questions the assumption that carbon markets create a level playing field by exploring the relationship between the organisation of capital and the organisation of emissions in the European Union Emissions Trading System (EU ETS). It constructs a database by matching installations and owners to reveal that a relatively small number of large-scale coal-fired power stations, owned by a very small group of states and corporations, are responsible for a significant proportion of greenhouse gas emissions. The findings are analysed by considering how technological dependence on coal together with the corporate institutional form combine to support the socio-spatial concentration and centralisation of capital and emissions. Case studies of the consolidation of the seven largest polluting owners from Europe's coal-dependent electricity sector and the carbon trading strategies of the two largest polluters, RWE and E.ON, then assess the impacts of energy liberalisation and emissions trading policies. The article concludes that EU energy and climate policies are pulling in different directions by clustering responsibility for greenhouse gas emissions and diffusing responsibility to address climate change. The uneven distribution of emissions within the EU ETS makes an alternative policy approach that directly targets the biggest corporate and state polluters both feasible and necessary.

1. Introduction

The market-based approach to climate policy is informed by the orthodox economic logic that trading permits between polluters with different marginal abatement costs encourages optimal outcomes. Carbon markets are held to direct emissions reduction activities towards the least cost options by allowing the market-determined price of carbon to decide how a given emissions goal will met. Provided property rights are well defined, transaction costs are low and other distorting influences are minimised, the argument is that aggregate costs of climate action can be minimised by expanding the sectoral, geographical, temporal and greenhouse gas scope of carbon markets as widely as possible (Tietenberg, 2006).

To date, the European Union Emissions Trading System (EU ETS) represents the most significant implementation of this economic framework in international climate policy. Beginning in 2005, the EU ETS covers over 11,000 installations (individual polluting units, such as a power station or factory) that emit carbon dioxide, nitrous oxide and perfluorocarbons in industries

Abbreviations: BEWAG, Berliner Städtische Elektrizitätswerke; CDM, Clean Development Mechanism; CO_2-e, Carbon dioxide-equivalent; EDF, Électricité de France; EU ETS, European Union Emissions Trading System; EUTL, European Union Transaction Log; GDF, Gaz de France; HEW, Hamburgische Electricitäts-Werke; JI, Joint Implementation; NAP, National Allocation Plan; PGE, Polska Grupa Energetyczna; RWE, Rheinisch-Westfälisches Elektrizitätswerk; VEAG, Vereinigte Energiewerke; VEBA, Vereinigte Elektrizitäts und Bergwerks; VIAG, Vereinigte Industrieunternehmungen

E-mail address: Gareth.bryant@sydney.edu.au

http://dx.doi.org/10.1016/j.enpol.2016.06.007
0301-4215/

responsible for around 45 per cent of emissions in all 28 EU member states plus Iceland, Liechtenstein and Norway. A wide range of sectors are regulated by the scheme, including electricity generation, oil refining and steel, aluminium, chemicals, glass, ceramics, cement and paper manufacturing. The EU ETS is described by the European Commission as the "cornerstone" of EU climate policy (European Commission, 2013a).

Corporate actors drew heavily on the least cost rationale of carbon markets in initial debates over the design of the EU ETS, where "industry's main preoccupation was to preserve and enhance a 'level playing field'" (European Commission, 2001a, p. 3). The concern with levelling the playing field is a central assumption in the "regulatory logic" of emissions trading because it justifies the flexibility provided by the policy for polluters to trade with other actors rather than reducing their own emissions at the source (Bailey and Maresh, 2009). Carbon markets are said to level the playing field because they do not discriminate between how, when, where, why and by whom emissions are reduced according to any criteria other than cost efficiency, thus sharing the climate mitigation burden through market principles rather than the decisions of state regulators enacting more direct measures. In practice, the appeal to political neutrality is regularly suspended in favour of what Bailey and Maresh (2009) term the "territorial logic" of emissions trading, whereby actors plead for special treatment, in particular for free allowance allocation. But this too is justified by the capacity of emissions trading to level the playing field between regulated and non-regulated actors, by reducing the competitive disadvantage, and thus risk of carbon leakage, for trade-exposed industries, in a way that is less possible with carbon taxation.

The resulting problem of over-allocation, in conjunction with the economic crisis, has left the EU ETS in a state of near-permanent political economic crisis, with periodic market crashes in the context of an overall downward carbon price trajectory. Around 2 billion surplus allowances, representing the same quantity of tonnes of carbon dioxide equivalent (CO_2-e), had accrued by the beginning of the third phase of the scheme in 2013 (European Commission, 2014a, p. 8). The scheme has also come under heavy criticism for issues including windfall profits for polluting industries that passed on the nominal cost of allowances that were freely allocated, cases of fraud from stolen allowances and tax carousel scams, and question marks over the social and environmental integrity of carbon credits produced by offset projects that can be exchanged for European carbon allowances (Bond, 2012; Bryant et al., 2015; Lohmann, 2011; Pearse and Böhm, 2014). While some reforms have been introduced to address each of these issues (including greater levels of allowance auctioning, enhanced security arrangements at emissions registries and restrictions on certain offset types), European Union Allowances have largely remained below €10 per tonne since 2012, from highs of over €30 in the early years of the scheme – a symptom of deeper, unresolved problems (Intercontinental Exchange, 2016).

Despite this record, the market logic of levelling the playing field continues to be deployed to support the EU ETS. The logic featured prominently in negotiations over the relative importance of the carbon market in relation to other policies in the 2030 Climate and Energy Package, which sets the broad framework for EU climate and energy policy between 2020 and 2030. The Commission's Green Paper on the issue noted with concern that the weak carbon price created "an increasing risk of policy fragmentation threatening the Single Market, with national and sectoral policies undermining the role of the ETS and [the] level playing field it was meant to create" (European Commission, 2013b, p. 4). Ultimately, member states agreed to a package in October 2014 that lowered the priority of energy efficiency and renewable energy policy vis-à-vis the EU ETS in the policy mix (Bryant, 2016). Targets for both of these policies only increased from 20 per cent in 2020 to 27 per cent by 2030, compared to a doubling of the greenhouse gas emissions reduction target to 40 per cent. The EU ETS was affirmed as "the main European instrument to achieve this target" and free allowance allocation was extended "so as to ensure a level-playing field" (General Secretariat of the Council, 2014, p. 2). While other climate policies also exist at national, regional and local levels, and for non-EU ETS sectors, member states are increasing their reliance on the carbon market to address climate change.

This article questions the economic assumption that carbon markets create a level playing field by exploring the relationship between the organisation of capital and the organisation of emissions in the EU ETS. Section 2 constructs a database by matching information on installations and their owners. Section 3 presents data that reveals that a relatively small number of large-scale coal-fired power stations, owned by a very small group of states and corporations, are responsible for a significant proportion of greenhouse gas emissions. The findings are analysed in Section 4 by considering how technological dependence on coal together with the corporate institutional form combine to support the socio-spatial concentration and centralisation of capital and emissions. Case studies of the consolidation of the seven largest polluting owners from Europe's coal-dependent electricity sector and the carbon trading strategies of the two largest polluters, RWE and E.ON, then assess the impacts of energy liberalisation and emissions trading policies. Section 5 concludes that EU energy and climate policies are pulling in different directions by clustering responsibility for greenhouse gas emissions and diffusing responsibility to address climate change. The uneven distribution of emissions within the EU ETS makes an alternative policy approach that directly targets the biggest corporate and state polluters both feasible and necessary.

2. Methodology

The effectiveness of policies such as the EU ETS depends on its interaction with the actual industry structures that it operates within, not idealised market models. Production in Europe's electricity, steel, oil refining and cement industries, the four biggest polluting sectors in the EU ETS, is heavily concentrated among a small number of large corporations (Domanico, 2007, pp. 5067–8; Ecofys, 2009, p. 1; Ecorys, 2008, p. 23; European Commission, 2010, pp. 35–6). The implications of this for understanding the climate change problem and evaluating the emissions trading solution are partially obfuscated by the presentation of EU ETS emissions data at the installation level. Installation level data provides some important information, such as the scale of pollution from individual factories and power plants, but is missing comprehensive information on the companies that own and control them.

To bridge this gap, a database of companies participating in the EU ETS has been constructed by matching available installation data with company information in Orbis, an online database published by Bureau van Dijk, downloaded on 16 July 2014 (Bureau van Dijk, 2014). Three sources of installation data from EU authorities were used:

a) Company identification numbers from the European Commission's list of stationary (i.e. non-aviation) installations (European Commission, 2014b).
b) 'Operator' (company that controls the installation) information in 2008–12 National Allocation Plan (NAP) tables (European Commission, 2014c).
c) Operator holding account information, used for trading carbon allowances and credits, in the European Union Transaction Log (EUTL) (European Commission, 2014d).

Please cite this article as: Bryant, G., Creating a level playing field? The concentration and centralisation of emissions in the European Union Emissions Trading System. Energy Policy (2016), http://dx.doi.org/10.1016/j.enpol.2016.06.007