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# The limited effect of EU emissions trading on corporate climate strategies: Comparison of a Swedish and a Norwegian pulp and paper company

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## HIGHLIGHTS

- We examine corporate responses to the EU ETS in two pulp and paper companies.
- Rising electricity prices are perceived as the strongest influence from the scheme.
- The scheme has reinforced commitments to reduce $CO_2$ emissions.
- The $CO_2$ price tag supports some investments but has limited effect on innovation.
- The effect of the scheme is mediated by both market factors and production factors.

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## ABSTRACT

This article examines to what extent and how the EU ETS has influenced the climate strategies of two Nordic pulp and paper companies: Swedish SCA and Norwegian Norske Skog. Rising electricity prices are perceived to be the greatest effect of the scheme. The EU ETS has served to reinforce commitments to improve energy efficiency and reduce $CO_2$ emissions in both companies studied. Procedures like monitoring of $CO_2$ emissions and accounting for $CO_2$ prices have become more significant since the introduction of the EU ETS, but the scheme has not triggered a search for innovative, low-carbon solutions. Due to differences in market factors and production factors, SCA has been more active than Norske Skog in investing in and implementing $CO_2$-lean actions. Future studies of climate-mitigation activities, strategies and innovations in the pulp and paper industry should involve more in-depth investigation of the interactions between such factors and the EU ETS.

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## 1. Introduction

The EU Emissions Trading System (ETS) was the first international policy instrument to introduce regulation of fossil $CO_2$ emissions of pulp and paper companies in Europe. Of 11,500 installations introduced to the system, about 900 were pulp and paper mills. In terms of allocated EU Emission Allowances (EUAs) the pulp and paper industry (hereafter PPI) represents two per cent of EU ETS (Hyvärinen, 2005: 40). Can the ETS induce companies in the PPI and other energy-intensive industries to adopt proactive climate strategies? That will represent a crucial test of the EU's ability to achieve a low-carbon economy. Further, how can divergent corporate climate strategies be explained? Examination of this question can shed light on the conditions under which different corporate climate strategies emerge.

This article examines to what extent and how the ETS has influenced the climate strategies of two specific pulp and paper companies and the European PPI more generally. One of the few works on this topic is Rogge et al. (2011), whose study, based on survey data of paper producers and technology providers in Germany, found their innovation activities to be governed mainly by market factors, not the EU ETS or other climate policies. As the EU ETS is the first EU-wide regulation to target PPI $CO_2$ emissions, we were puzzled by the finding that the scheme apparently had scant effect on innovation activities, and suspected that the methodological approach of Rogge et al. had bypassed important aspects of corporate responses to the ETS. Complementary interview-based studies with relevant company representatives can identify more nuanced perceptions about corporate climate strategies, including the possible influence of the EU ETS on innovation activities. This has motivated our approach to examining the effect of the EU ETS by analysing the status and changes

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in climate strategies in two comparable yet different pulp and paper manufacturing companies: Svenska Cellulosa Aktiebolaget (SCA) and Norske Skog, with headquarters in Sweden and in Norway, respectively. Both companies appear to have progressive climate strategies, having been ranked as the best Swedish and the best Norwegian company in the 2010 Carbon Disclosure Project (CDP) appraisal. The two companies display some variation in climate strategies and development over time, with SCA apparently experimenting more with innovative abatement projects than Norske Skog. Further, Norske Skog specializes in newsprint production, and is smaller and less diversified than SCA. Due to the market situation with surplus production capacity of newsprint, Norske Skog has recently sold assets to reduce debts, and has shut down several mills to cut costs (Norske Skog, 2011).[1] By contrast, SCA develops, produces and markets a broad portfolio of products and ranks among the world's leading forest industry companies. This variation in company type and performance enables exploration of the conditions under which different corporate climate strategies may emerge.

This article proceeds as follows. Section 2 presents the analytical framework and methodology applied in this study. Section 3 examines the corporate climate strategies of SCA and Norske Skog in presence of EU ETS. In Section 4 we analyse the link between the EU ETS and the changes in corporate climate strategies in light of three causal mechanisms that shed light on corporate responses to regulation. Section 5 explains the divergence in corporate climate strategies of SCA and Norske Skog. In the final Section 6, we identify some patterns in the complex process of EU ETS adaptation in the two companies and reflect on the future outlook of EU emissions trading and the PPI.

## 2. Analytical framework and methodology

The concept of 'corporate strategy' has been defined variously in the management literature. Building on scholars like Mintzberg (1987) and Leong and Ward (1995), we view corporate climate strategy as being composed of three main constituents:

1. recognition of the problem of anthropogenic climate change and acceptance of responsibility in mitigating greenhouse gas (GHG) emissions
2. manifestation of company responsibility for problem-solving, expressed by a target for reducing GHG or $CO_2$ emissions and related monitoring practices
3. actions or a pattern of actions: investments or implementation of technical and organizational abatement measures for climate–target achievement.

These constituents have guided our research and interview questions, and serve as indicators, framed as headings in this article, under which empirical results are described and analysed. In analysing the influence of the EU ETS on corporate climate strategies, we see three complementary causal mechanisms as providing explanatory power. First, the EU ETS may influence the cost-benefit calculations of companies. According to a rational-calculative model of corporate behaviour grounded in the mainstream economic view of the firm as a unitary profit-maximizing agent (e.g., Gravelle and Rees, 1981), the principal function of emissions trading is to *restructure incentives* by putting a price on $CO_2$ emissions. A unitary profit-maximizing actor with full information on the relative costs of various alternatives will rank the different alternatives according to cost, phasing in the lowest-cost option first. If the allowance price is low, or expected to be low in the future, the company will prefer minor, low-cost adaptation such as trade in allowances. Many studies of the effects of the EU ETS are explicitly or implicitly based on this understanding of corporate behaviour (e.g., Egenhofer, 2007; Hoffmann, 2007; Ellerman at al., 2010).

Second, drawing on Porter (1990) and Porter and Van der Linde's (1995) seminal work on the link between environmental regulation, innovation and competitiveness, we propose that the EU ETS may trigger exploration, experimenting and learning across companies. In line with this Porter Hypothesis, the key assumption is that the EU ETS may alert and educate companies to the benefits of reducing emissions, raising the likelihood that product and process innovations will be environmentally friendly. Lack of 'stringency' is the factor most often mentioned when scholars seek to explain why the EU ETS induced relatively little innovation in the first phases (De Bruyn et al., 2010; Ellerman at al., 2010; Rogge and Hoffmann, 2010; and Martin at al., 2011). According to the Porter Hypothesis, environmental regulations can – if stringent enough – stimulate companies to be innovative, adopt and develop new technologies and practices, and gain competitive advantages. The main implication is that companies *need* regulation in order to recognize new and innovative opportunities that may pay off in the short or long term (Porter and van der Linde, 1995).

Third, drawing on neo-institutional theory, we expect that companies may internalize norms and rules about appropriate conduct by participating in schemes like the EU ETS. Sometimes referred to as 'the logic of appropriateness' (March and Olsen, 1989), this internalization of norms and rules constitutes the prime causal mechanism seen as connecting institutions and policy instruments to behavioural change. Studies have shown that institutions and regulations can create new norms of responsibility based upon the matching of situation and role rather than on cost-benefit calculations (Vogel, 2005; Barth and Wolff, 2009; Flohr et al., 2010). This literature questions the profit-maximization motive and opens up for intrinsically norm-driven behaviour to explain why some companies go beyond compliance with environmental regulations (see, e.g., Flohr et al., 2010, Gulbrandsen, 2010). Companies guided by the logic of appropriateness can be expected to invest in long-term carbon solutions beyond minimum compliance measures, once they have recognized the climate change problem and responsibility for contributing to problem-solving efforts.

Our research methods include interviews, surveys of company documents and reports, and quantitative data analysis. Semi-structured interviews were conducted with company management representatives responsible for strategic and operative matters concerning environmental impacts, including climate change and other sustainability issues. Some complementary interviews were conducted to obtain representation from other stakeholders in the European pulp and paper industry and EU ETS policy experts. Company documents and reports (annual reports, sustainability reports etc.) have been used to examine the companies' external communications and outside recognition. Data, originally from the Community Transaction Log (CITL, 2011), on allocated allowances and verified emissions under the EU ETS have been analysed to examine the relation to cap from the initiation of the scheme until 2011. By combining methods we have been able to cross-check the consistency in company statements, reported actions and compliance with the system. In addition, since the EU ETS is one of many factors that may influence corporate climate strategies, the effects of other relevant variables have also been taken into account. We have

[1] The Follum mill in Norway was sold in March 2012 and the Parenco mill in the Netherlands in August 2012; during the period studied here, Follum and Parenco were fully owned by Norske Skog.

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