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Shadow of Hierarchy:
Self-Regulation by Industry in Europe

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ISSN 1028-3625

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Printed in Italy
European University Institute
Badia Fiesolana
I – 50014 San Domenico di Fiesole (FI)
Italy
<http://www.eui.eu/RSCAS/Publications/>
<http://cadmus.eui.eu>

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Abstract

In technically complex areas, political actors increasingly rely on private actors to shape public policy. This is due to the greater expertise of the private actors, mostly industry. This article theorizes and empirically investigates the conditions under which self-regulation by industry (governance) emerges in environmental policy at the European level and asks how effective it is. Is ‘a shadow of hierarchy’ (governmental intervention) needed to ensure the emergence and effectiveness of voluntary agreements? We show that the willingness to engage in self-regulation is prompted by a regulatory threat with governmental action. Once legislation has been pre-empted, environmental self-regulation is implemented under a weak ‘shadow of hierarchy’. We identify the causes of this ‘weak’ control and explain the differential performance in the two sectors on the basis of different market incentives.

Keywords

environmental regulation, European Union, governance, private actors, self-regulation

ERPA Keywords

agency theory; implementation; regulatory politics; sectoral governance; environmental policy; Germany; U.K.

1. Research Question

In technically complex areas of environmental protection political decision-makers increasingly rely on private actors, foremost industry, to engage in public policy making. In the European Union (EU), too, self-regulation by industry in the form of so-called ‘Voluntary Environmental Agreements’ (VAs) constitutes a mode of governance that frequently invoked as a ‘better’ mode of governance because it is based on the superior expertise of the actors shaping the policy measures, because it is immediate in its application and can be changed more speedily if need arises (COM 2002 412).¹ In contrast, legislation involves a lengthy formal decision-making procedure and the transposition into national legislation before implementation begins (Héritier 2003; 2002). Moreover, sectoral governance, being cut off from the mainstream of legislative political decision-making (government), is supposed to guarantee credibility and stability of public policy making if the preferences of governments change. In view of all these potential merits of governance including private actors, the questions arise: which exactly are the circumstances prompting industry to engage in self-regulation? If established, how does it function and how effective is it in dealing with problems? We argue that some governmental action or a ‘shadow of hierarchy’ in the form of initiating steps to legislate or take executive action is a precondition for self-regulation to develop (Halfteck 2006, Héritier 2003; Segerson and Miceli 1997; Rottmann and Lenschow 2006; OECD 1999 and 2003). Once self-regulation has been introduced, we argue that it will again need a looming shadow of hierarchy in the form of governmental actors’ control or robust incentives for agents in order to sustain the self-regulatory effort and obtain satisfactory results.

2. Theoretical Framework and Hypotheses

Answers to the questions regarding the emergence of business self-regulation and its performance in the shadow of hierarchy are derived as hypotheses from strategic choice analysis and principal-agent theory. The emergence of sectoral governance is conceived as a problem of choice of actors seeking to maximize their utility (Lake and Powell 1999) in a context of strategic interaction with other actors and particular conditions of the environment (available strategies, given information condensed in institutional rules). The strategic interaction, we argue, occurs in a principal-agent relationship (Aghion and Tirole 1997; Moe 1990). The principal, in our case a governmental actor, wanting expertise in a sector of policy-making delegates a task, i.e. the formulation of public policies, to private actors outside the political legislative stream of decision-making. The private actors may consider to engage in such a contract relationship with a governmental actor. Under this contractual relationship, the agent has an interest in doing less than the principal expects, i.e. to increase his benefits. For the principal it is difficult to observe whether the agent is complying with the contract and performing as agreed (informational asymmetry). In order to motivate the agent to maximize his efforts, the principal offers him extra incentives or disincentives in case of non-compliance (Karagiannis 2006). Delegation may occur in an explicit way in that governmental actors take the initiative and formally charge some private actors with the regulatory task or in a more implicit way that government tolerates, supports and acknowledges the outcome of a self-regulation initiative taken by private actors. This may take place in an exclusive form as self-regulation, (‘unilateral commitment’ OECD 1999: 64-67), or in a partial form either as regulated self-regulation or co-regulation form, i.e. joint decision-making with public actors (‘negotiated agreements’ OECD 1999: 46-61; Knill and Lehmkuhl: 49).

We assume the following general preferences for the actors engaged in the strategic choice of delegating or not and of complying or not with the regulatory contract. On the side of the principals, the European Commission DGs (DG Environment, DG ENVI and DG Enterprise, DG ENTR) and the European Parliament (EP), we assume distinctive preferences: DG ENVI and the Parliament prefer

legislation to self-regulation by industry. Their second-best preference would be co-regulation in which private actors provide the contents of regulation, but government still has an important formal say in the drawing up and control of implementation of this regulation. The least preferred outcome for DG ENVI and Parliament is self-regulation without governmental control, followed, finally, by no action at all. The most preferred outcome of DG ENTR is assumed to be self-regulation, the second best co-regulation, followed by legislation and, no action at all. Industry's most preferred outcome is no regulation or action at all, its second preference self-regulation, the third legislation, and the least preferred outcome is co-regulation because it implies both, strong formal control mechanisms of voluntary activity and mandatory requirements. The NGOs' preferred outcome is legislation, the second best co-regulation, followed by self-regulation and no action whatsoever. All actors also have prior beliefs about the preferences of the other actors which are involved, i.e. industry knows that NGOs would prefer legislation etc. We also assume that industry has more expertise than government in matters of regulation, i.e. that there is an informational asymmetry.

The first relevant aspect of the strategic environment is the set of possible strategies available to the interacting actors (Lake and Powell 1999:8), in our case legislation, co-regulation, self-regulation, no action. Government could decide to legislate or not. Industry might reject self-regulation or not. NGOs might engage in a campaign in favour of more stringent environmental regulation and against the industry or not etc. The second important aspect of the environment is its information structure: i.e. what actors can know for sure and what they have to infer from others' behaviour. One important aspect of information is information contained in existing institutional rules, for instance existing relevant legislation which allows actors to anticipate other actors' behaviour. The environment of the actors is also characterized by a changing public mood and changing public attention concerning the environmental and health risks linked to the production processes in question which are instigated by the campaigns run by NGOs. Thus NGOs ran campaigns against the production of PVC, in which industry was vehemently attacked. This was not the case for the paper industry. Obviously, the industry will seek to avoid or mute such public campaigns which is harmful to its image and the marketing of its products.

2.1 The Emergence of Voluntary Agreements (VAs)

In our first two hypotheses we address the causes of the emergence of self-regulation. Based on the assumption of the actors' preferences as described above we vary two important aspects of the environment in order to investigate how this affects the strategic interaction and its outcome, i.e. the (non)emergence of self-regulation. The first environmental factor to be considered is whether or not the government has taken steps to legislate or tighten legislation and how this affects industry response. The second aspect focuses on whether or not NGOs have led a campaign against the environmental record of a specific industry. We argue that if government envisages first measures of legislation or tightening of existing legislation and takes concrete preparatory steps to that effect, industry will be more willing to engage in self-regulation. The more credible this threat is, the more likely industry will resort to voluntary action to pre-empt such measures (see also Glachant 2003, Hansen 199, Halfteck 2006, Segerson and Miceli 1997). The prospect of legislation also helps overcome collective action problems which arise in the process of industry coming to a sectoral agreement. For diverse sectoral interests have to be accommodated under the roof of such an agreement. We therefore submit that:

H 1 Government envisaging first steps of legislation or a tightening of existing legislation prompts self-regulation by industry.

We argue in a second hypothesis that the existence or absence of a public campaign attacking the environmental record of a specific industry has an impact upon an ensuing business action. The more acrimonious and heated the campaign run by NGOs cautioning against the use of a particular substance, production process or product, jeopardizing the reputation of an industry, the higher the

willingness of industry to engage in self-regulation. A second consequence of such a campaign may be that public actors consider it necessary to recur to legislative measures. A NGO campaign may therefore trigger a legislative threat (link to H 1). Firms therefore have not only an incentive to pre-empt an explicit threat by a regulator, but they may also wish to pre-empt a potential risk triggered by environmentalist campaigning. Accordingly, we therefore argue that

H 2 A NGO-led public campaign condemning the environmental record of a specific industry prompts self-regulation.

In addition, it can be expected that the level of environmental commitment is directly related to the magnitude of the threat (Segerson and Miceli 1997). We therefore submit that the severity of legislative threat and NGO campaign pressure will be reflected in the stringency of the self-imposed environmental objectives and the concrete organizational measures taken by business (firms and business associations). The details of the contract including the possibilities of external control are negotiated among the involved actors. If there is neither a credible legislative threat nor a NGO attack, industry is not expected to go beyond normal public relations activities. We hence claim that

H 3 The more industry is put under pressure by legislative threat and NGO campaigns, the more ambitious the environmental objectives formulated in a VA and the more concrete the organisational measures to develop and sustain such an effort.

2.2 Implementation of VAs and Performance under VAs

Turning to the second question of implementation and performance, we argue that, since industry has more expertise than government (informational asymmetry between principal and agent), the principal has difficulties in controlling the agent's performance. We expect that the given degree of control plus negative incentives on the one hand and the strength of positive incentives with which the industry is faced on the other, will have an impact on performance. Principal-agent theory proposes that the principal can use different incentives² in order to induce the agent to deliver on the agreed objectives. These incentives, positive and negative, may cover a wide range as outlined in the introduction of this volume:

Table 1: Possible Instrumental Links Between Hierarchy and Self-regulation

facilitating
approving/lending authority
incentivization
prescribing procedural rules
prescribing participation
monitoring
imposing norms, monitoring plus sanctions

These instrumental links and control mechanisms will have an impact on the agent's performance: the stricter they are, the more control the principal has over the compliance of the contract, hence the more likely the outcome of delegation will be close to the principal's original objectives. And the

stronger the positive incentives set by the principal, the higher performance will be. We therefore submit that

H4: The more rigorous the instruments of control over the agent's performance, or the stronger the positive incentives of reward, the better the agent's performance.

One aspect of the principal-agent relationship may contribute to a lack of effectiveness. If there are several principals which do not agree on what the agent should deliver and do not agree on the type of instruments to use in order to ensure performance, the weaker the performance is expected to be. The agent may exploit this situation in order to create some latitude of action for himself and/or seek to cooperate with the most lenient principal.

The second factor affecting the performance of the agent under a voluntary accord is the market incentives the agent is exposed to when conducting his projects (Aghion and Tirole 1997). If these projects are economically profitable to him, he will readily comply with the task delegated to him. Again the extent of this profitability may be hidden (unobservable) to the principal.

H5: The stronger the agent's market incentives for contract compliance, the better the performance.

Finally, principal-agent theory describes how – given information asymmetry - the principal may gain some information on the performance of the agent through firebell-ringing, i.e. the reliance on third actors, such as the media, NGOs, the consumers to provide him with information (McCubbins and Schwartz 1984). In case that this performance is not satisfactory, the principal then can proceed to use stronger negative and positive sanctions (H4) in order to prompt a higher performance. We submit that

H6: The more intense firebell-ringing activities, the better the performance of the agent.

The general questions and hypotheses developed above will in the following be applied and empirically assessed for two of industry's voluntary environmental agreements concluded at Community (and at national) level.

3. Methodology and Case Selection

3.1. Variable Specification and Method

We operationalize our hypotheses as follows:

Table 2: Empirical Indicators and Counter-Evidence

Hs	EMPIRICAL INDICATORS INDEPENDENT VAR.	EMPIRICAL INDICATORS DEPENDENT VAR.	EMPIRICAL INDICATORS DISCONFIRMATION
H1	Statements and discussions; Preparatory documents legislative drafts (first legislation or reinforcing existing)	VA	absence of VA
H2	NGO publications NGO actions	VA	absence of VA
H3	see H1 and H2	strong organisational efforts, i.e. association activities and infrastructure, and high level of ambition VA targets, i.e. high volumes recycled materials	strong efforts in absence of legislative threat and NGO campaigns
H4	conditional endorsement, strict monitoring plus sanctions, sustained legislative threat	high level of performance in achieving targets, i.e. high volumes of recycled materials	low level of performance in achieving targets despite strong control
H5	strong market incentives: recycling is profitable, high demand for recycled material	high level of performance in achieving targets set	low level of performance in achieving targets
H6	frequent media and consumer campaigns, repeated NGO campaigns	high level of performance in achieving targets	low level of performance in achieving targets

In order to empirically assess our claims we engage in comparisons across sectors and levels, and within the two sectors.

Table 3: Hypotheses and Case Selection

Ns Hs	cases EU	cases national	total number of cases
H1 - H3	PVC Paper	PVC Germany, UK Paper Germany, UK	N=6
H4 - H6	PVC Paper		N= 2

In order to collect the data to empirically assess the hypotheses we engaged in a triangulation of methods: Firstly, we conducted 46 in-depth interviews (see table at end of paper) with actors from the two industries' associations (19), political decision makers from the Commission and the EP (19), with NGOs (8). Secondly, we scrutinized official documents of the Commission and the Parliament, and documents issued by industry associations and NGOs. Thirdly, we analyzed quantitative data on the development in the two sectors with respect to the targets set in the VAs.

3.2. The Empirical Cases: Voluntary Agreements at Community level on PVC Environmental Issues and Paper Recycling

Our empirical research focuses on six cases, comparing self-regulation across sectors, i.e. the plastic PVC and paper industries, and across levels, the EU-level and member countries (Germany and UK). On PVC, the European PVC industry committed itself with 'Vinyl 2010', a ten-year VA signed by the four European PVC associations. Representing the industry along the value chain through the European Council of Vinyl Manufacturers (ECVM), the European Stabiliser Producers Association (ESPA), the European Council for Plasticisers and Intermediates ECPI), and the European Plastics Converters (EPC) the industry signed a 10-years programme which addresses the reduction of the use of certain heavy metal stabilisers, the mechanical recycling of PVC and the development of further recycling technologies. It deals with the production as well as the waste phase of the material and sets the quantitative target to recycle 200,000 tons of available post-consumer waste by 2010. The commitment has been updated after midterm in May 2006 in order to expand the scope of activities to all 25 member states of the EU. At the national level, the PVC industry in Germany and the UK to respond to NGO and public criticism organised associative action: in Germany, a Working Group on 'PVC and Environment' was founded in 1988; in the UK, part of the industry organised with a group of retailers and committed itself to a sustainable manufacturing process in a 'PVC Charter' and a code of practice in 1999 and 2000.

In the paper sector, two associations representing the paper and board industry (Confederation of European Paper Industries, CEPI and the European Corrugated Manufacturers, FEFCO) and a third association for paper recovery (European Recovered Paper Association, ERPA), signed an agreement

which gained support from other associations along the value chain. The five-year commitment running from 2000 to 2005 set the objective to recycle at least 56% of paper and board products consumed in Europe. It has been followed up by a second agreement, running until 2010, which envisages a recycling rate of 66%. The range of signatories of this second agreement has been expanded, now also including associations representing the paper and board converters (Confederation of Paper and Board Converters in Europe, CITPA), the tissues producers (European Tissue Symposium, ETS), the deinking industry (International Association of the Deinking Industry, INGEDE) and the printing industry (International Confederation for Printing and Allied Industries, INTERGRAF). Again this agreement is supported by a number of other industry associations. Similar initiatives were taken at the national level: the actors of the German graphic paper chain organised in 1994 to achieve 60% recovery of graphic paper until 2000; in the UK, the Newspaper publishers Association committed itself in 2000 to increase the recycled content of newsprint up to 70%.³

4. The Hypotheses in the Light of the Empirical Findings

Investigating the European, British and German case in two industry sectors, i.e. PVC and paper, we study six cases for the emergence of VAs. As regards implementation, we only compare the VAs at the European level, i.e. focus on two cases given that the assessment of implementation processes is much more demanding in terms of required data.

4.1. The Emergence of VAs

What induces industry to commit itself to self-regulation.? We argued that government *envisaging first steps of legislation or a tightening of existing legislation prompts self-regulation by industry legislative- threat hypothesis - H1*).

Legislative Threats on PVC Environmental Issues (H 1: cases 1, 2 and 3)

Looking first at the independent variable ‘legislative threat’, the European case on PVC environmental issues (case 1) clearly demonstrates how a legislative threat develops over time and how industry responds to this by initiating self-regulation (Is-1-9, I-22, I-25, I-26, I-29). Throughout the 1990s, especially the Nordic states criticised the use of PVC, and engaged in a ‘political regulatory competition’ seeking to transfer their national regulation to the European level (Héritier 1996; Héritier and Knill 1996), thereby acting as ‘pace-setters’ (Börzel 2002) in PVC-specific legislation. In consequences, PVC environmental problems have been raised in a variety of product-focused legislative acts. In its draft Directive on End-of-Life Vehicles (COM 1997 358) the Commission eventually envisaged to assess the impact of PVC waste on the environment in an ‘integrated, horizontal approach’. The Parliament’s report on the directive strongly supported the Commission in this goal (OJ C E/2002/21/112). In 1995, the Commission commissioned several horizontal studies on PVC (e.g. AEA TECHNOLOGY 2000) forming subsequently the basis for the Green Paper ‘PVC Environmental Issues’ (COM 2000 469). The ensuing public consultation organised by DGs ENVI and ENTR in October 2000 (Agence Europe 20/10/2000) expressed apprehension concerning the different life phases of PVC, with Greenpeace urging for a general phasing out of the material. Whilst the Green Paper listed legislation and VAs as possible options, the Parliament, in its Resolution (OJ C 21 E, 24.1.2002) clearly favoured legislation as a ‘long-term horizontal strategy’ and requested more ambitious measures regarding additives, waste collection and management.

Turning to the dependent variable - self-regulatory activities - it became evident from interviews conducted (Is-1-9) that the European PVC industry responded to this threat of legislation, several months before the European Commission issued its Green Paper, by initiating voluntary action to address the material-specific criticism. To quote just a few statements:

...The PVC industry was not in a very funny situation at that time...just after the horizontal studies ...The Commission ...wanted to issue a policy on PVC. In order ...to propose something from the industry's side as well, we started to speak in the value chain...in order to see if we can propose something ...to avoid any specific legislation on PVC (I-2)

...To me the Vinyl 2010 commitment was very much a pre-empted strike to prevent legislation regarding PVC...There was a very real threat there and the industry needed to react. (I-8)

In Europe the pressure was very hot...and the Commission decided to study PVC very seriously, ...It was into this kind of debate that the PVC industry decided to take the 'bull by the horns' and proposed to the Commission that it engages in the voluntary commitment. (I-7)

The outcome was Vinyl 2010, the ten year commitment of the four European PVC associations reducing the use of certain heavy metal stabilisers, the mechanical recycling of PVC and the development of further recycling technologies. Important quantitative targets are: emission targets for the manufacturing of PVC, the gradual phase-out of lead until 2015 and the recycling of 200,000 tons of 'available post consumer waste' until 2010. This pre-emptive strategy worked out in the sense that the issue disappeared from the political agenda, as one interview partner put it: 'from a political point of view, it [the issue] has been taken off the table and they are waiting for the industry to deliver' (I-3). In short, this first European case confirms our first hypothesis, that a legislative threat led to voluntary self-regulation by industry.

In our second case focusing on the national level in Germany (case 2) we show in a literal replication that legislative threat matters, as well. Environmental issues of PVC came to the attention of German politicians already throughout the 1980s (I-1). A legislative threat became particularly strong in 1988, when the Green party in the Bundestag requested to stop the production and use of PVC, claiming that 95% of PVC products could be substituted with alternatives. Before that, action had been taken by several German municipalities to phase out or restrict the use of PVC.⁴ In 1993, one regional state started to implement a regulation to ban the use of PVC in publicly subsidized housing. In 1996, after the airport fire in Düsseldorf and following the ensuing controversies about the potential role of PVC cables in it, a group of parliamentarians from the Green Party requested to ban PVC in public buildings.⁵

Our findings show that the industry did respond and in 1988 organised itself as the Working Group on 'PVC and Environment', an association composed of industry representatives, scientists and citizens. Activities include public relations measures, focussed campaigns, the generation of scientific expertise and the preparation of concrete self-regulatory measures by industry. Measures taken put a specific focus on PVC recycling, such as for example the window producers agreeing in 1993 to take back all used windows. The activities contributed to the abandoning of legislation: the proposal to ban PVC was not supported in the Parliament and the regional-state regulation was withdrawn. In 1994, the Parliament's Enquête Commission on environmental aspects of substances⁶ concluded that a substitution of PVC without a thorough analysis of alternatives was not recommendable. It also acknowledged that the manufacturing process had been improved, but demanded that there should be take-back and recycling obligations for long-lived PVC products.

In our second national case, the UK (case three), we conduct a logical replication in the sense that preparatory legislative steps were absent in this instance. As in many other countries, a first debate on PVC occurred in the 1970s on vinyl chloride monomer, one of the chemicals to produce PVC. The government response to concerns raised was strong and ran short of legislation. Industry reacted rapidly in order to reduce the exposure of workers and consumers (Is-7-8). A later debate which focussed on plasticizers and PVC waste led to a mandatory agreement between the government and the industry, but refrained from banning plasticizers. Again governmental actors did not prepare any PVC-specific legislation, i.e. no legislative threat occurred (Is-7-9). According to H1 regarding the importance of a legislative threat we therefore wouldn't expect industry to engage in voluntary action. However, our data show that in 1999 VAs were concluded between two important manufacturers of PVC and a group of retailers (National Centre for Business & Ecology 1999 and 2000). In conclusion,

the UK case disconfirms our legislative threat hypothesis (H1). Although exerting some pressure, the UK government did not explicitly threaten with legislative measures and industry still responded by engaging in voluntary commitments.

Legislative Threats on Paper Recycling (H 1: cases 4, 5, and 6)

Given the sheer amount of paper and board, the waste management phase of these materials has naturally been in the focus of EU-level regulators and has been dealt with in a number of directives and regulations (case 4).. The variation on the independent variable under scrutiny here are steps to make existing legislation more stringent and to introduce mandatory requirements for the recycling of paper and board in terms of quality or quantity. One possible avenue of doing so is to regulate recycled minimum content of products, an option which has repeatedly been envisaged by the European regulator. Notably throughout the debates in the so-called ‘Recycling Forum’ which had been set up by DG ENTR in 1999⁷ to discuss the competitiveness of the recycling business (COM 1998 463), DG ENVI proposed steps to regulate the recycled minimum content of specific products as a measure to enhance sustainability (I-32). This suggestion, meeting with immediate resistance on the part of industry, was thwarted by the fact that DG Environment and DG Enterprise could not agree on such a measure.. Hence it was not a very concrete legislative threat which induced industry to engage in self-regulation.

As some interviewees from industry described the situation:

Even now [in 2006] when the basic legislation revision was prepared in the commission, DG Environment looked at the mandatory recycled fiber content again. It always comes up again...It became never really concrete, but it has again and again been discussed (I-14)

And, there is:

...the idea of having this voluntary agreement: we heard some rumours that the European Commission had plans about recycling targets. And then we adopted more or less the same attitude as the German industry... [which] worked out positively. So we thought that this might be a solution for the European level as well. (I-12)

On the dependent variable we find that the paper industry in 2000 agreed on the so-called ‘European Declaration on Paper Recovery’. Two European sector associations, the Confederation of European Paper Industries (CEPI) and the European Recovered Paper Association (ERPA), signed the agreement, and a third association, the Federation of European Corrugated Manufacturers (FEFCO), joined in 2001. The ‘Declaration’ sets a rather ambitious recycling rate to be reached in 2005 and is complemented with some more qualitative objectives. As mentioned earlier, this agreement has been followed up by a second one which expands the geographic and organisational scope and sets a target of 66% to be achieved by 2010.

A similar pattern of pre-empted legislation occurred in Germany (case 5), which then was used as a blueprint for the EU-level agreement (I-12, I-14, I-16). Political actors in Germany early on envisaged regulatory measures to encourage environmental friendly waste management and recycling. Emulating legislation on packaging waste which regulates collection and recovery, legislation was drafted which would have imposed an obligation on industry to take back all graphical paper. The actors along the whole chain of production (i.e. producers, importing firms, printing business) jointly sought to prevent this demanding regulation (I-16). In 1994, they organised as ‘AGRAPA’ (Arbeitsgemeinschaft für Graphische Papiere) and set up a voluntary agreement with the objective to recover 60% of graphic paper until 2000. Thus the German paper industry responded to a legislative threat by producing a VA.

In the UK (case 6), a bill to regulate the recycled content of newsprint was proposed in Parliament in 2000 providing that publishers recycle half of their products, and that newspapers should contain 80% recycled fibre by 2010. This proposal was not supported by the government and therefore dropped. Instead, the government and the Newspaper Publishers Association reached a voluntary agreement to increase the recycled content of newsprint (I-18)⁸.

The six cases show that in almost all cases, except the PVC UK, the steps to initiate or tighten legislation have indeed been at the origin of self-regulation by industry. Turning to our second hypothesis *H 2*, we ask whether our cases bear out the expectation that *NGO Campaigning prompts self-regulation by industry*.

NGO Campaigning on PVC Environmental Issues (H 2: cases 1, 2 and 3)

Greenpeace has been campaigning against PVC in member states from the 1980s onwards and launched activities at the European level (case 1) in the mid-1990s (Is-40-42). The Parliament joined in the European PVC debate by calling for action in its report on the End-of-Life-Vehicles (I-42). Greenpeace influenced the debate by its thematic work on the chlorine industry providing counter-expertise⁹ and by campaigning specifically on plasticizers in PVC toys. As one interview partner from Greenpeace argued:

If there is a political debate...we can enrich it by providing scientific data and by popularizing the problem. For as long environmental topics are discussed behind closed doors, the environment is always losing out. Environmental issue can only win in a political discussion if they become public (I- 42, our translation)

From the industry's viewpoint the situation presented itself differently: 'In the beginning of the 90s we (the PVC industry) had enormous difficulties in being publicly heard: there were the poisoners from industry and the saints from the ecological associations.' (I-1, our translation)The German industry (case 2) was under constant and heavy fire from NGOs throughout the 1980s and 1990s. NGOs and politicians from the Green party repeatedly joined forces to fight for a ban of the material, for example in the aftermath of the Düsseldorf airport fire. Greenpeace also launched focussed actions concerning specific applications of PVC, such as in toys, cosmetics or sports shoes (I-42). The NGO further published material to challenge the claims made by the PVC Working Group.¹⁰ It hence seems plausible to conclude that the association's activities were at least partially caused by the Greenpeace-led public pressure put on the industry.

The lion's share of anti-PVC NGO campaigning in the UK (case 3) took place at about the same time as at the European level, i.e. later than in Germany and in the Nordic member states. Quite similarly to Germany, the industry actors along the chain organised to defend their interests. This cooperation takes place within the Vinyls Group of the 'British Plastics Federation' (BPF) which constitutes the leading trade association of the British plastics industry. Specifically, Greenpeace campaigned against PVC packaging and in this respect targeted UK retailers in the mid-1990s (Leadbitter 2002; I-7,8). The NGO initiated the establishment of a 'PVC Retail Working Group' and commissioned an independent study to investigate the option of phasing out PVC. However, throughout the process a dialogue developed between the PVC industry (which originally had not been admitted to the working group) and the retailers. This cooperation was further backed up by scientific findings which came to the conclusion that PVC in general is a useful product, but that some aspects of manufacturing would merit reconsideration. In order to take adequate measures, two important PVC manufacturers (Hydro Polymers and EVC) signed an environmental charter and a Eco/efficiency code of practice (National Centre for Business & Ecology 1999a and 1999b) with a number of retailers (e.g. CWS, Tesco, Waitrose, Asda). Hence in the long run, the NGO-led campaign proved to be beneficial for industry, as one interview partner put it:

it kicked off in the UK principally through a targeted campaign by Greenpeace who specifically focused on ... the use of PVC in packaging ... Up till then it was what we call a 'heaven of sanity' But I think that single-issue campaign did us a lot of good, it has actually been beneficial for the industry, over all, in the long run (I-8)

In conclusion, all three PVC cases confirm our second hypothesis (H2) that strong NGO pressure gives rise to self-regulation by industry.

NGO Campaigning on Paper Recycling (H 2: cases 4, 5, and 6)

NGO campaigns targeting industry, in contrast, are not significant in the paper and board sector. Neither at the national (cases 5 and 6) nor at the European level (case 4) were there any salient public debates and NGO campaigning. Some punctual criticism has been raised against the paper industry as being a ‘forest cutting’ industry, and NGOs have demanded occasionally that industry should use less virgin fibre and achieve higher recycling rates.

As interviewees from industry commented:

... we are cutting trees, we are cutting forests. We should also say: we should cut the forest at a certain point, otherwise the forest will kill itself. The people have a different understanding. If you cut a tree now, you are almost categorized, this is bad behaviour. (I-13)

Although one should not forget that recycling is only possible with a minimum fraction of virgin fibre... so you cannot say that thanks to recycling you do not need any wood anymore... we have noticed, when talking to NGOs, that these processes are often not clear to them. (I-16)

These concerns have been raised recurrently, but not specifically at the time when the European Declaration was initiated. There was no focused NGO campaign in any of the three cases.. It is therefore surprising that industry engaged in self-regulation and that this self-regulation under the Declaration fostered the cooperation of associations along the production chain (Is-12-17).

In short, comparing our hypotheses ‘legislative threat’ (H1) and ‘NGO campaigns’ (H2) as causes of the emergence of self-regulation by industry across sectors, our empirical evidence shows that - with one exception - a legislative threat prompted the emergence of self-regulation. NGO campaigns, however, were not a necessary condition for self-regulation in the paper industry. We therefore conclude that the threat of initiating or tightening legislation has stronger explanatory power than NGO campaigning. The latter can be seen as a preparatory activity which may lead legislators to envisage more stringent environmental policies. Yet as the UK case on PVC demonstrates, it is not a necessary condition for a legislative threat to emerge.

The Degree of Pressure and Industry Effort (H 3: all cases)

In our third hypothesis (H3) regarding *Degree of Pressure and Industry Effort* we argued that ‘*the stronger the threat of legislation and pressure of NGOs, the more ambitious the environmental objectives that industry will be willing to pursue and the more concrete the organizational measures taken.*’ This hypothesis holds for the PVC case (case 1): both, the threat to legislate and NGO campaigns were strong, and, in response, industry defined relatively demanding environmental objectives - given that recycling practices had yet to be developed - and created new organisations (‘Vinyl 2010’ and the ‘Working Group on PVC and Environment’). In view of the political pressure, the industry could not commit less than the 200,000 tons target (I-20, I-22, I-26, I-29). As regards organisational structure, the impact is striking. For the first time in this large and heterogeneous sector, the industry’s associations started cooperating along the entire production chain.

...We started to speak together and after a lot of exchange and discussion, we achieved this commitment to agree, to sign it and to work together. (I-2)

We associations said: this [Vinyl 2010] is a big project, we have to get together and we formed a new association. (I-6)

Given that much less legislative and NGO pressure has been put on the paper industry (case 2) it seems somewhat puzzling that the European associations nevertheless invested a lot of energy in setting up an agreement. Considering the very different preconditions in the member states, the targets of 56% of paper and board products consumed in Europe for the first ‘Declaration’ 2000-2005 and 66% for the second, are substantial. At the organizational level the paper industry, too, developed new associational structures. For the first time, the different actors in the production chain have been brought together under a sector-wide agreement (I-19).

As one interview partner from the paper industry commented on the industry's motives for the setting of recycling targets:

One (reason) was the turbulences in the recovered paper market ... The availability of recovered paper, however, was not stable and the price wasn't stable as well. The volatility of the price was very high: sometimes the price was even negative, sometimes the price was good; sometimes it was easy to get recovered paper on the market, and sometimes not ... In the paper industry we couldn't simply live with that... *One aim was to create a stable market. In setting a target, the paper industry can assure that a certain quantity of recovered paper is available ((emphasis added))*... There is something similar in Germany on the national level which is called the AGRAPA agreement. We already thought that this is producing good results. (I-14)

The comparison of the two sectors partially disconfirms our third hypothesis on pressure and industry effort (H3) since our empirical findings show that the paper industry adopted appreciable standards in the absence of strong legislative threats and in the absence of significant NGO campaigning.

4.2. The Implementation of VAs

What explains the effectiveness of the implementation of agreements once they have been established? In H 4 we argue that *'The strictness of control instruments impact on the level of performance achieved'* and distinguish between the application of positive and negative incentives.

The Strictness of Control and the Performance of the European PVC Industry (H 4: case 1)

Providing for positive incentives, the Commission can lend support to VAs through an exchange of letters or the adoption of a Commission recommendation (COM 2002 412, I-20). The industry sought acknowledgement and the Commission had drafted a recommendation for Vinyl 2010 (I-20, I-22, I-26, I-29), yet it was never issued. As a result, the only recognition consists in the Commission participating in Vinyl's monitoring committee. Industry actors emphasize that an endorsement of the efforts made (I-2, I-3) would have made it easier to 'motivate their troops' and to face outside criticism; instead they think that 'not doing anything and letting this Horizontal Initiative fly in the middle of the sky...is surprising' (I-3). Non-action can be explained by a strong disagreement between two principals: DG ENVI and DG ENTR (I-22, I-26, I-29). While DG ENVI sought co-regulation, DG ENTR supported self-regulation. The Green Paper listing various options reflects this divergence (I-22).

As regards negative incentives to control non-compliance, two instruments are of relevance for VAs at Community level: monitoring and threatening legislation. A 'monitoring committee', composed of the industry associations, the Commission, the Parliament and a consumer organisation, evaluates the performance of Vinyl 2010. While Commission officials regularly participate and scrutinize the activities (I-21, I-22, I-23, I-24) - e.g. DG Environment called for an acceleration of the phasing-out of lead stabilisers (I-21, I-24) - they have no sanctions at hand. MEPs are mostly absent and show limited interest in PVC issues (I-35, I-36). The rapporteur on the Green Paper and 2002 Communication on VAs declined to participate for lack of time (I-37). A possible sanction which could give more lever to monitoring would be to threaten with legislation. Such threats, however, are not imminent. On the contrary, PVC – constituting only a small fraction of total waste -is no longer thought to require material-specific legislation (I-21, I-26, I-29) Moreover, even if DG Environment and MEPs – the latter being discontent with the lack of action after the parliamentary resolution of 2001 - would envisage it, DG Enterprise – favouring VAs - would oppose such steps.¹¹ Related legislation, in particular REACH, which has 'crowded out' PVC in the attention of political actors, though affecting the PVC business, does not directly touch upon the core of self-regulatory activity under Vinyl 2010. Only the legislative ban of phthalates in PVC toys in 2005 had direct consequences for actors in the chain, i.e. the additives producers suffering financially and pressing for a release of contributions within Vinyl 2010 (I-5).

So what was the impact of this weak control on performance? The implementation of the quantitative targets has only been partly successful, although results have been improved considerably throughout the past two years of implementation. By the midterm of the VA in 2005, 38,800 tons out of the 200,000 tons target had been achieved, i.e. a quantity which was far below of half the amount of the target set. By the end of 2006, however, industry managed to recycle 83,000 tons of PVC, more than doubling its recycling figures for the second year running. The phasing out of cadmium stabilisers has been achieved in 2001 and the phasing out of lead stabilisers proceeds smoothly.

The Strictness of Control and the Performance of the European Paper Industry (H 4: case 4)

Industry – as a positive incentive - did not expect an official endorsement of the ‘Declaration’ (I-14), but sought a Commission commitment to refrain from legislation for the duration of the VA. In doing so, the European industry associations followed the German model VA which had successfully been negotiated with the Federal Ministry for Environment (I-16). However, the Commission refused to be part of the agreement (I-32).

When it comes to negative incentives, i.e. monitoring and legislative threat, DGs ENVI and DG ENTR participate in the ERPC Council which is monitoring the implementation of the VA (Is-32-33). Unlike the monitoring committee of Vinyl 2010, MEPs are not part of the monitoring body. Given, as in the PVC case, the disagreement between DG ENVI and DG ENTR regarding legislation, the latter opposing legislation on recycled content, there have been no concrete steps to legislate recycled content of products, although this approach has repeatedly been reconsidered. Yet, it could be easily incorporated in legislative dossiers such as the ‘Thematic Strategy on the Prevention and Recycling of Waste’ (COM 2003 301) which is currently discussed; hence there is an indirect legislative threat. At the same time, there is a risk that self-regulatory efforts to boost paper and board recycling could be undermined by new legislation, in particular where the definition of waste becomes relevant.¹²

In view of positive and negative incentives being rather weak - no agreement with the Commission on abstaining from regulation, no stringent monitoring through public actors and no sustained and concrete legislative threat - it is surprising, that the performance under this VA has been satisfactory. The target of recycling 56% of paper and board products consumed in Europe has been reached for the first Declaration within the deadline in 2005. Hence in the case of the paper industry our H4 is disconfirmed. This raises the question as to other causes underlying the performance. In H 5 we argued that *Economic Incentives impacts on the Level of Performance*.

The Economic Incentives for PVC Recycling (H 5: case 1)

For the PVC industry, achieving the recycling targets has been a complex, costly task. To begin with, a recycling market hardly existed in the first place. As one of our interviewees stated: PVC recycling is not in the industry’s interest (I-40) since it first had to develop material-specific recycling methods and the necessary infrastructure. All industry actors emphasized that the implementation of the recycling target constitutes a learning process, requiring a lot of effort and resources (I-1, I-3, I-4, I-6). Some of the new recycling methods initially failed, while others seem to work well and are expected to contribute substantially to the achievement of the target (I-4, I-6, I-22, I-23, I-24). The creation of a recycling market has also been slowed down due to increased re-usage of products and export of waste (I-3). As a result, the original expectations about future amounts of ‘available post-consumer’ waste proved to be wrong (I-2, I-3, I-4). In contrast, new legislation altering the cost-benefit-analysis for recycling as opposed to land-filling can help the implementation of the VA.¹³ In spite of these difficulties related to PVC-recycling, the industry stresses the recyclability of the plastic and presents the initial experience in the light of difficult preconditions as a relative success. Industry maintains the 200,000 tons target and has reconfirmed it in the updated version of the VA in May 2006 (I-1, I-6).

The Economic Incentives for Paper Recycling (H 5: case 2)

In the paper industry, in contrast, there is a thriving recycling market facilitating the implementation of the 'Declaration'. As one industry actor formulated: it is 'basically market forces that drive the process and not recycling targets' (I-19). The increased use of recycled fibres results from the increased price of virgin fibres and is less determined by the costs of collecting waste. In 2000, an increase in demand, boosted by exports, became apparent (I-14, I-16, I-19). Finally, disposal costs have increased, improving the profitability of recycling. In this situation, the Declaration constitutes a valuable market planning strategy for the industry (I-32) with some associative actors claiming that the Declaration helps to abate the volatility of the paper recycling market and 'to create a stable market' (I-14).

Recycling in the paper industry is also comparatively simpler and recycling rates are more predictable. A statistical method to calculate the recyclable amount in Europe was developed by the association CEPI in order to set the aggregate target for the Declaration (I-14, I-16) - this is however not to say that there is no uncertainty regarding non-collectable and non-recyclable products and no disagreement on the maximum recycling rate. Moreover, the recycling infrastructure is much better developed than in the PVC sector, with recycling rates above 80% in some member states¹⁴. In addition, aspects of the European regulatory framework are advantageous for the recycling business. The packaging waste directive, for instance, guarantees the financing of the collection of paper and board by the packaging industry (I-32).

In conclusion, the market forces fuelling the recycling processes are very different in the two sectors.. This difference is clearly reflected in the uneven performance under the two sectoral VAs.

In our last hypothesis *H 6* we argued that *The stronger firebell ringing activities, the higher the level of performance achieved under a VA.*

Firebell Ringing Activities on PVC Environmental Issues (H 6: case 1)

Surprisingly, since NGOs played an important role in the emergence of the PVC VA, we find little firebell ringing by NGOs during implementation. Greenpeace published a very critical evaluation of the design of 'Vinyl 2010', stating that the agreement did not go beyond 'business as usual' and diverts political attention from the problem (Greenpeace International 2002a and 2002b). Yet the NGO did not follow-up on the Vinyl 2010 implementation process. It has repeatedly been stated by our interview partners that NGOs engage in wide political debates, but that they do not have the resources to follow the nitty-gritty aspects of daily implementation of the numerous VAs which exist in different sectors (Is-43-45). Especially since the Commission's attention had shifted to REACH (I-3, I-22, I-37, I-40, I-41, I-42, I-44), Greenpeace as well as other NGOs focussed on the chemicals debate (I-40, I-42). The PVC had lost its political potential and hence Greenpeace alone could not maintain the political momentum (I-42). Given the absence of firebell-ringing by NGOs and consumers (mobilized by NGOs), the only partial success of Vinyl 2010 does not come as a surprise underlining the plausibility of H6. At the same time there is awareness within industry that it needs to keep up the effort in order to avoid the re-emergence of NGO-led public debates.

...The biggest danger that we are now facing is that there is not much ado about PVC, so that we will fall asleep again. (I-4)

I think what they have done is they are watching us with bated breath. On the one hand, Greenpeace hopes that we'll slip up and fail, and maybe you need somebody like that to keep an eye on you. (I-8)

Firebell Ringing Activities on Paper Recycling (H 6: case 2)

No firebell ringing activities accompanied the implementation of the VA on paper recycling. In general, waste management and recycling in this sector is not considered a high-priority environmental issue on the European NGO agenda (I-43, I-44). However, some NGOs and notably the World Wide Fund for Nature (WWF) are putting sustained emphasis on forest-related issues. Targeted at the

European paper industry specifically, NGOs have more recently requested that industry should 'develop more 100% recycled paper products' and 'manufacture solely from virgin tree fibre'¹⁵. From an industry viewpoint, such demands often run short of fully acknowledging the positive record of the European producers or suffer from misinformation.

I somehow feel that NGOs awoke to this only much later and they still demand things that we have already done many years ago and that have become 'standard' in our industry. Also they base their discussions and positions very little on facts and figures ...[the latter are] based on many misunderstanding or poor information (mainly reflecting reality in North-America rather than in the EU). (I-14)

Hence we can conclude that NGO monitoring of the paper industry's activities is not directly linked to the implementation process of the VA. Moreover, given that the compliance record is positive, alerting activity is not needed.

5. Conclusion

Raising the question as to the why of the *emergence* of self-regulation by industry, the empirical investigation shows that in almost all cases, except the PVC UK, a legislative threat (H1) has indeed been at the origin of industry self-regulation. NGO campaigns (H2), in contrast, were not a necessary condition for self-regulation to emerge, as the case of the paper industry suggests. Although we find that a legislative threat bears bigger explanatory value than NGO campaigning for the emergence of VAs, none of them is a sufficient condition as we have both times contradictory cases - the emergence of a VA in the British PVC sector in the absence of a regulatory threat; the emergence of VAs in the paper sector in the absence of NGO campaigning. For the paper cases we have further found that market incentives can be another important and maybe decisive factor for industry actors to set up self-regulation. When it comes to the motives for the strictness of self-regulation, the comparison of the two sectors partially disconfirms the hypothesis suggesting that legislative threat and NGO mobilization have a direct impact (H 3) since our empirical findings show that the paper industry adopted rather strict standards in the absence of NGO campaigns. The European cases in both sectors moreover show that the intensity of legislative threat is clearly undermined if two political principals cannot agree on legislative goals and if political attention is shifting to new legislative projects.

Looking at the *implementation* process, our expectation that the strictness of control will have an impact on performance (H 4) is confirmed in the case of the PVC industry, and challenged in the case of the paper industry. The good performance of the paper industry points to the importance of the market forces fuelling the recycling processes and hence the relevance of economic incentives for implementation (H 5). Given they are strong in the case of the paper industry, but weak in the case of the PVC industry, they hold as explanatory factors for the empirical pattern we encounter. The firebell ringing hypothesis (H 6) is disconfirmed for both, the PVC and the paper case. In the first case NGOs, after having campaigned extensively against the environmental record of the PVC industry and in favour of more stringent regulation, lost interest once it came to watching over implementation. In the second case NGOs were never very active at all and hence NGO activity was neither relevant for the emergence of the VA, nor is it accompanying its implementation.

In short, the overall finding is that self-regulation by business as a new mode of governance is more likely to emerge in the shadow of hierarchy, i.e. the threat of legislation which may be underlined by NGO campaigns. Based on the evidence we have gathered on self-regulation of the paper industry, we agree however that one may wish to distinguish between two types of agreements according to the respective incentive structure (Segerson and Miceli 1997: 1/2). A first type of agreements induces participation by providing positive incentives, such as economic benefits in the production process. This is the case for the paper industry which has a virtual interest in a functioning market providing for recyclable fibre. A second type, at the contrary, induces participation by threatening a harsher outcome, for example by means of a background legislative threat. This scenario holds for both

sectors, yet it is much more relevant for the PVC sector where industry had an interest to tame the NGO-led public campaigns and to pre-empt the very concrete and harsh legislative threats. With respect to implementation of VAs, we conclude that it is only effective if the legislative threat is sustained or if it is prompted by external monitoring and sanctioning. These factors absent, the market profitability of self-regulation can induce business to high performance. Our findings also suggest that NGOs, fulfilling a role as watchdogs over compliance with voluntary targets, do not play a role in fostering effective implementation of VAs.

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Table 4: Interviews Conducted

No.	Date	Location/ Type	Type of Actor
1	18/08/05	Bonn	Private, PVC Industry (Horizontal)
2	22/11/05	Brussels	Private, PVC Industry (Stabiliser Producers)
3	22/11/05	Brussels	Private, PVC Industry (Vinyl Manufacturers)
4	23 /11/05	Brussels	Private, PVC Industry (Converters, Horizontal)
5	23/02/06	Brussels	Private, PVC Industry (Additives Producers)
6	24/02/06	Frankfurt a. M.	Private, PVC Industry (Converters, Horizontal)
7	26/05/06	London	Private, PVC Industry (Horizontal)
8	26/05/06	London, phone	Private, PVC Industry (Horizontal)
9	26/05/06	London	Private, PVC Industry (Horizontal)
10	24/01/06	phone	Private, Waste Management
11	10/04/06	e-mail	Private, Waste Management
12	04/05/06	Brussels	Private, Paper Chain (Printing)
13	05/05/06	Brussels	Private, Paper Industry (Board Manufacturers)
14	05/05/06	Brussels	Private, Paper Industry (Paper Manufacturers)
15	08/05/06	Bonn	Private, Waste Management
16	08/05/06	Bonn	Private, Paper Industry (Paper Manufacturers)
17	10/05/06	phone	Private, Paper Industry (Tissues Manufacturers)
18	26/05/06	London	Private, Waste Management
19	01/06/06	phone	Private, Waste Management
20	23/11/05	Brussels	Public, European Commission, ENVI
21	23/11/05	Brussels	Public, European Commission, ENVI
22	24/11/05	Brussels	Public, European Commission, ENTR
23	05/12/05	telephone	Public, European Commission, ENTR
24	09/12/05	telephone	Public, European Commission, ENVI
25	23/02/06	Brussels	Public, European Commission, ENVI
26	23/02/06	Brussels	Public, European Commission, ENVI

Table 4 (continued)

No.	Date	Location/ Type	Type of Actor
27	03/05/06	e-mail	Public, European Commission, TREN
28	03/05/06	Brussels	Public, European Commission, ENTR
29	04/05/06	Brussels	Public, European Commission, ENVI
30	04/05/06	Brussels	Public, European Commission, ENVI
31	04/05/06	Brussels	Public, European Commission, ENVI
32	18/05/06	phone	Public, European Commission, ENVI
33	01/12/06	Brussels	Public, European Commission, ENTR
34	23/11/05	Brussels	Public, European Parliament
35	22/02/06	Brussels	Public, European Parliament
36	22/02/06	Brussels	Public, European Parliament
37	22/02/06	Brussels	Public, European Parliament
38	02/06/06	Florence	Public, European Parliament
39	18/11/05	telephone	Private, NGO
40	23/11/05	Brussels	Private, NGO
41	23/11/05	Brussels	Private, NGO
42	05/12/05	e-mail	Private, NGO
43	22/02/06	Brussels	Private, NGO
44	25/04/06	phone	Private, NGO
45	04/05/06	Brussels	Private, NGO
46	04/05/6	Brussels	Private, NGO

Endnotes

- 1 These advantages of VAs as compared to legislation have repeatedly been mentioned by our interview partners, esp. on the side of industry (I-2, I-3, I-4, I-10) and DG ENTR (I-22, I-28).
- 2 While economic principal-agent theory discusses the possibilities of positive incentives to increase performance, political science principal-agent theory emphasizes negative incentives such as police patrol and firebell-ringing (McCubbins and Schwartz 1984). See Karagiannis 2006.
- 3 Data and documentation on these initiatives and VAs can be found at the relevant websites:
Vinyl 2010 rf. www.vinyl2010.org;
German Working Group PVC and Environment rf. <http://www.agpu.de/>;
UK PVC sector activities rf. <http://www.bpf.co.uk>;
European Declaration on Paper Recovery rf. <http://www.paperrecovery.org/>
German paper industry activities rf. <http://www.gesparec.de/>;
UK newspaper recycled content VA rf. <http://www.defra.gov.uk/environment/waste/topics/paper.htm>
- 4 274 German communities have arguably communicated that action had been taken on PVC, Greenpeace International 2001: 22-23.
- 5 Deutscher Bundestag Drucksache 13/4729, 23.05.1996.
- 6 <http://dip.bundestag.de/btd/13/074/1307400.asc>
- 7 <http://ec.europa.eu/enterprise/events/recycling/recycling.htm>
- 8 The suggested bill rf. <http://www.publications.parliament.uk/pa/cm199900/cmbills/043/2000043.htm>
- 9 The Greenpeace Laboratories at the University of Exeter published a number of studies (Greenpeace 2000, 2001a and 2001b).
- 10 ‚PVC: die Recycling-Lüge‘ Greenpeace Magazin 2/1997.
- 11 The rapporteur on the Green Paper, until now busy with REACH, intends to request justification from the Commission (I-37).
- 12 The paper and board industry is facing a dilemma with respect to the waste definition: if material to be recycled is classified as waste, this has a number of practical, especially financial implications. If, however, paper and board would strictly be defined as secondary raw material, recyclable material would also fall under REACH (I-32).
- 13 In Germany since 1 June 2005 landfills may only accept municipal waste that has been incinerated or that has undergone mechanical biological treatment (I-1, I-23).
- 14 For statistical information rf. CEPI (2004): *Collection Follows the Increased Demand for Recovered Paper*. Special Recycling 2003 Statistics, October 2004, <http://www.cepi.org/>
- 15 ‚A Common Vision for Transforming the European Paper Industry‘. As agreed at the Forest Movement Europe meeting 2 October 2005.

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