Policy Invention and Entrepreneurship: Bankrolling the Burying of Carbon in the EU

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Abstract

In 2008 the EU adopted a new CCS policy with an inventive funding instrument at its core: the NER 300 fund, based on revenues from auctioning of emissions trading allowances. This study shows that policy invention has both a long-term, patient policy-making dimension, and a more short-term dimension, involving the ability to create and exploit more temporary windows of opportunity. We distinguish between stable, ‘tortoise’ entrepreneurs and more temporary ‘carpe diem’ entrepreneurs. We find that tortoises who contributed to create the broad and general climate policy window paved the way for issue-specific carpe diem entrepreneurs who promoted the more specific policy invention. These two types of entrepreneurs employed different techniques, combining both ‘preference shaping’ (convincing actors about the urgency of an issue or the merits of an invention) and ‘procedural engineering’ (procedural changes that ensure that a window remains open for a long time or that create new decision possibilities). We also note that neither the tortoises nor carpe diemers were able to control the use of the policy invention, as the fund has shifted its focus towards renewables. Thus, new ideas may end up serving radically different purposes that envisaged by the entrepreneurs.

Key words: Windows of Opportunity, Policy Entrepreneurship, Policy Invention, EU Climate Policy.
1. Introduction

Very rarely are new policies or new policy elements invented. Policy invention is widely seen as an inherently disruptive process, resisted by defenders of the status quo (see Jordan and Huitema’s review in this volume). In this article, we offer a more nuanced understanding of policy invention, highlighting how multiple, loosely coordinated entrepreneurs can contribute to policy invention. Such invention entails the development of something entirely new – but new ideas are always inspired by existing practices, never emerging de novo. We assess the development of an EU climate financing mechanism for Carbon Capture and Storage (CCS), the ‘NER 300’ fund, a policy that was both internally and externally inventive: innovative compared to earlier EU policy and to the policies of main economic and political competitors.

Political science has a long history of attributing policy inventions to entrepreneurs (see Sheingate, 2003, p.188; also Huitema and Jordan, this volume). The invention of NER 300 illustrates how entrepreneurship can facilitate, but not control, climate policy invention. Back in 1984, John Kingdon argued that entrepreneurs who effectively used windows of opportunity had high impact on US federal policymaking (Kingdon, [1984] 2011). We explore how entrepreneurs can contribute to opening such windows, and why some entrepreneurs manage to exploit policy windows successfully. Entrepreneurs with differing motivations and commitments may contribute to policy invention: deeply committed tortoise entrepreneurs may help to create and shape a policy window, whereas carpe-diemers, with a shallower commitment and a more short-term approach, are more active in exploiting policy

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windows. Further, entrepreneurs may combine different techniques – prominent examples being what we call ‘preference formation’ and ‘procedural engineering’.

In what ways did entrepreneurship contribute to the invention of the NER 300 fund? NER 300 was initially launched as a funding mechanism for CCS\(^2\): 300 million allowances were set aside within the EU emissions trading system’s (ETS) New Entrants Reserve for funding CCS demonstration projects. This formed a central part of an unprecedented direct EU engagement in funding large-scale carbon-abatement technology projects.

The EU’s CCS policy development was decisively shaped by entrepreneurs who seized the opportunities for radical climate policymaking that emerged when the EU started preparing for the Copenhagen climate summit in 2009: in 2007, EU leaders embraced the goal of stimulating the construction and operation of up to 12 CCS demonstration plants by 2015. To increase acceptance for the CCS funding, also renewable energy was included when the EU created the NER funding mechanism (Boasson and Wettestad, 2012). Somewhat paradoxically, the mechanism has proven far more important for renewables than for CCS: in the first of two financing rounds, only renewables projects were financed. Our assessment draws on extensive document review and on in-depth interviews with more than 20 actors central to the policy-development processes, conducted on the basis of anonymity.

In section two we present main elements of our analytical approach as regards the focused role of entrepreneurs. Section three discusses the main characteristics of the policy outputs to be explained here. Section four offers a brief chronological overview of the fascinating story of how NER 300 was invented and adopted. In section five, we discuss how entrepreneurship shaped the case and its outcome and presents conclusions.

\(^2\) CCS consists of a suite of technological processes that involve capturing carbon dioxide from the gases discarded by industry, and then transporting and injecting the CO\(_2\) into geological formations (European Commission, 2008a).
2. Entrepreneurship and windows of opportunity

Many political scientists have underscored how entrepreneurs influence policy development and policy invention. Entrepreneurs are seen as actors ‘essential to the process of policy making’ (Roberts and King 1991, p.147), ‘central figures to the drama’ (Kingdon, 1984, p.189), ‘individuals who change the direction and flow of politics’ (Schneider and Teske, 1992, p.737), ‘change agents’ (Huitema and Meijerink, 2010) or actors who ‘aim to induce authoritative decisions that would not otherwise occur’ (Moravcsik, 1999:271). Kingdon further describes entrepreneurs as ‘advocates who are willing to invest their resources – time, energy, reputation, money– to promote a position in return for anticipated future gain in the form of material, purposive, or solidary benefits’ (Kingdon, [1984] 2011, pp.179, 181). All these quotations direct attention to actors who engage to a greater extent than required by their formal roles.

But how to distinguish entrepreneurship from regular political activity? Surely, policymakers and lobbyists who merely perform their regular tasks cannot be regarded as ‘entrepreneurs’. For instance, a politician who adheres strictly to the party programme and acts within the formal rules that regulate a policy processes is not performing entrepreneurship. True, actors who try to follow formal rules may over time unconsciously contribute to changing the rules and hence contribute to policy invention – however, this is the result, not of entrepreneurship, but of path-dependent developments or other mechanisms.

‘Windows of opportunity’ is a concept closely related to entrepreneurship, and central for understanding how entrepreneurs can play into policy invention. Such windows give entrepreneurs excellent opportunities for articulating and introducing new policy ideas into the legislative process (see Kingdon, [1984] 2011; Mintrom, 1997; Finnemore and Sikkink, 1998). According to Kingdon ([1984] 2011), entrepreneurs will constantly be shopping around in search of decision possibilities where they can succeed in getting their policy ideas
on the agenda, and will skilfully exploit any windows of opportunity. Kingdon defines a ‘policy window’ as an opportunity for advocates of proposals to push their pet solutions, or to attract attention to their special problems ([1984] 2011:165).

Several scholars have highlighted the extraordinary political skills of entrepreneurs, implicitly or explicitly arguing that they succeed precisely because of their special abilities. Some focus on creativity, like Polsby (1984, p.171), who argues that entrepreneurs are actors ‘who specialise in identifying problems and finding solutions’ (see also Mintrom 1997, p.739; Sheingate 2003, p.185). Others highlight the ability of entrepreneurs to get things done. Back in 1961, Robert Dahl argued that whether actors are entrepreneurs or not depends on how they use their resources and also how ‘skilful or efficient they are in employing them’ (Dahl, 1961, p. 272 [italics in original]). Further: ‘[s]kill in politics is the ability to gain more influence than others, using the same resources’ (ibid., p.307; see also Fligstein 2001, p.107). However, it is very hard to measure skills, whether in creativity or efficiency. Rather than trying to specify different skills relating to policy invention, we focus on two dimensions: entrepreneurial techniques, and entrepreneurial commitment.

When it comes to entrepreneurial techniques, entrepreneurship can be directed at changing other actors’ preferences, or policy-making procedures – ‘the rules of the game’. Preference-changing activities include framing, so central in sociological and institutional accounts of entrepreneurship (see Goffmann, 1974; Snow and Benford, 1988). Some policy scholars have argued that ‘policy making is mostly a matter of persuasion’ (Goodin, Rein and Moran 2006:5). Others give more weight to ‘procedural engineering’– acts directed at altering the distribution of authority and information concerning the political issue in question, for instance through networking and bargaining techniques.

We are especially interested in exploring how the two entrepreneurial techniques can contribute to the creation and exploitation of ‘windows of opportunity’. Kingdon employed
the striking image of ‘surfers waiting for the big wave’ ([1984] 2011, p. 165, see also p.181), implying a rather passive view on the opening of policy windows. In line with Huitema and Meierink (2010), we argue that entrepreneurs can contribute actively to opening policy windows, for instance by helping to get certain incidents framed in a particular way. Entrepreneurs can use preference formation to open windows, actively framing a situation in a way that changes actors’ views on the need for policy-making at that particular juncture – like framing climate change as an urgent problem in need of policy invention. Although Kingdon saw windows as created by factors beyond the control of entrepreneurs, he also emphasized that ‘the window exists in the perceptions of the participants’ (Kingdon, [1984] 2011:171).

In addition, we argue that entrepreneurs can initiate procedural changes that increase the possibilities for policy windows to result in policy invention. These may be procedural changes that ensure that a window remains open for a long time, or changes that create new decision possibilities: both of these will increase the likelihood of new policies being adopted. Procedural engineering has been little discussed in the literature on entrepreneurship, but various ways of changing the decisionmaking procedure, such as the creation of issue linkages, have been noted in studies on political bargaining and EU policy development (see Moravcsik, 1993, 1998; Sebenius, 1984, 2009; Niemann, 2006).

Turning to entrepreneurial commitment, the classic view promoted by Kingdon is that ‘successful entrepreneurs are persistent’ and ‘lie in wait in and around government with their solutions at hand, waiting for problems to float by to which they can attach their solutions’ (Kingdon, [1984] 2011:165, 181). In contrast, Fligstein has argued that, in order to create large networks, entrepreneurs must possess significant flexibility, and even be willing to adjust their political project and shift their targets (Fligstein and Mara-Drita, 1996; Fligstein, 1997). What does this mean with respect to the creation and exploitation of windows of opportunity? We propose distinguishing between ‘tortoise’ and ‘carpe diem’ entrepreneurs.
Entrepreneurs of the first type work like the proverbial tortoise in Aesop’s fable: slow and steady, with long-term horizons. This gives them better opportunities for contributing to the creation and development of ‘windows of opportunity’, i.e. framing a situation and inducing changes in the policy development procedure that allow for policy invention. In contrast, carpe diem entrepreneurs have a more short-term approach and shallower commitment to the issue at hand, often exploiting policy windows rather than creating them. Even if such entrepreneurs have a short history in relation to a given issue, they may be just as important when it comes to ensuring that new policy ideas emerge and get adopted at a certain point.

Using these conceptual clarifications and suggestions, we have developed a categorization of four kinds of mechanisms whereby entrepreneurs can contribute to the creation and exploitation of windows of opportunity for policy invention. (See Table 1.)

### Table 1. Four entrepreneurship mechanisms that underpin policy invention

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<th>Entrepreneurial commitment</th>
<th>Entrepreneurial techniques</th>
<th>Preference shaping</th>
<th>Procedural engineering</th>
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<td>Tortoise</td>
<td>1. Persuasive Window Creation</td>
<td>2. Procedural Window Creation</td>
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First, *Persuasive Window Creation* denotes the framing of a particular decision situation performed by Tortoise entrepreneurs: such actors have a long-term commitment to an issue (e.g. climate change), and seek to persuade others that it is time to act and develop policies directed at this issue. Second, Tortoise entrepreneurs may also initiate changes in the formal procedure that allow for adoption of new policies. Such *Procedural Window Creation* can
entail that new issues are put on the agenda or that new decision-making arenas or negotiations are established. Third, Carpe Diem actors will generally rush in after the window is created and seek to exploit it as much as possible. They may perform Persuasive Window Exploitation, trying to ensure that a certain sub-issue is seen as related to the policy window, e.g. by launching certain new climate policy solutions to a climate policy window. Fourth, Carpe Diemers may also aim to change the policy procedures that operate while the window is open by performing Procedural Window Exploitation. For instance, they can initiate linking certain sub-issue debates that are discussed in parallel, or introduce changes in the forums that make decisions on an issue. We now turn to the invention/creation of NER 300, showing how these four entrepreneurial mechanisms played into this process.

3. The new EU CCS policy and its funding model

In March 2007, the European Council adopted the goal of having ‘up to 12’ demonstration plants in operation by 2015 (Council, 2007). Compared to earlier EU policy, the CCS policy put in place from 2007/2008 onwards was certainly inventive: prior to that, CCS had been classified as ‘dumping’ and was prohibited in the EU (see e.g. UCL, 2012).

However, the main invention was that, in the EU climate and energy package agreed in December 2008, 300 million allowances from the New Entrants Reserve (NER) were set aside to contribute half of the costs of 12 CCS demonstration projects and projects demonstrating renewable energy technologies: this was the NER 300 fund (see Directive 2009/29, Art.10a.8). The NER 300 fund is a ‘financing instrument managed jointly by the European Commission, European Investment Bank and Member States’ (NER 300, 2012). The European Investment Bank (EIB) is to act as key administrator of NER money. Hence, the EU CCS model involves more centralized steering than otherwise common in EU climate policy – with the exception of the EU Emissions Trading Scheme (ETS), which has become
strongly centralized after 2009 (Boasson and Wettestad, 2013). As noted by one Commission insider, ‘we had analogies, but no model to build upon’ (interviews in Brussels, January 2011).

NER funding works through a four-stage process: 1) the EIB sells the allowances set aside for the fund; 2) member states nominate CCS and renewable energy projects that fit certain technology categories (for instance the Commission called for pre-combustion, post-combustion and oxyfuel CCS projects); 3) the EIB assesses the proposals submitted by member states against a set of eligibility criteria; and 4) after consulting with member states, the Commission adopts award decisions (Commission, 2010). The first process was finalized in 2012; the second process is now under way. As all nominated CCS projects were withdrawn mainly due to lacking domestic commitment and resources, only renewable energy projects were awarded funding in 2012 (Reuters Planetark, 2012).

There are some precedents for technology funding in the EU. Direct funding of technology development dates back to the 1950s and the establishment of the original European Coal and Steel Community (ECSC). The European Coal and Steel Fund was established in 2002 (Andrieu and Vannson, 2005). There are also some examples in the field of climate change, like the ULCOS project – the European Commission’s contribution to research into new steel technologies with radically lower CO₂ emissions (Wettestad and Løchen Arntzen, 2013). But the design of the CCS funding model seems unique, not least its link to ETS auctioning revenues.

Taking a more global perspective, we can further specify the inventiveness – and indeed the pioneering quality – of the EU approach. Compared to the USA’s CCS approach, with the FutureGen Program as the initial flagship (Stephens, 2009), the EU approach stands out as far more complex. This pertains particularly to the combination of carbon pricing through the ETS, with the funds available to CCS depending on the allowance price, and the
formulation of more specific targets and timetables. Analysts claim that CCS in the USA is now driven mainly by enhanced oil recovery economics, not climate politics (Hunton and Williams, 2012). Still, there is some funding available for demonstration projects (Global CCS Institute, 2011). However, direct comparison between the size of funding in the EU and in the USA is difficult, partly due to the EU link to a volatile carbon market. As has become clear, the NER funding of CCS will be much more moderate than initially envisaged. But one thing is certain: the USA’s CCS funding is not in any way placed within a wider climate policy framework similar to that in the EU. Nor do there appear to be any other major climate policy actors on the global scene with a CCS policy approach similar to that of the EU.

NER 300 is a uniquely centralized and complex policy model, seemingly without any real precedents inside the EU. Also outside the EU the model is quite special, although undertaking a detailed and specific global comparison would be a tall analytical order. Interestingly, Commission officials increasingly refer to NER 300 as a model that can be used also in other areas (see Delbeke 2013).

4. The EU CCS story: From Nerdy Issue to ‘Name of the Game’

4.1. 1997–2004: CCS emerges as possible EU climate policy solution

NER 300 is closely linked to the history of CCS in Europe. This technology has a prehistory that dates back to the 1970s, but, unlike carbon taxation and pricing, or renewable energy and energy efficiency, it was not debated as a possible climate policy solution in the first wave of EU climate policy initiatives in the 1990s (Boasson and Wettestad, 2013). In the 1997 Kyoto Protocol, the European Community took on a commitment to reduce specified greenhouse gas emissions by eight per cent by 2008–2012. This Kyoto target created a need for more EU climate policy, but offered little guidance as to which measures to adopt (Jordan and Rayner, 2010: 65). As a main theme, the Kyoto Protocol established the development of market
measures, and hence the promotion of least-costly climate mitigation – not the development of new, large-scale technological solutions like CCS.

CCS was not included in the EU’s first, more elaborate, response to the Kyoto Protocol (Commission, 1998). Then, in March 2000, the Commission announced the establishment of the first European Climate Change Programme (ECCP I), a multi-stakeholder programme involving actors from industry, member states and NGOs as well as independent experts (Commission, 2000a). The final ECCP did not pay much attention to CCS, with the final report mentioning the technology only briefly (Commission, 2000: 11; 2001:48). Nor was CCS mentioned as a possible abatement option in the 2003 Emissions Trading Directive (Directive 2003/87). Our interviewees note that EU officials hardly paid attention to CCS at that time. A civil society representative mentions Commission officials from DG Environment who claimed that CCS was an unrealistic and somewhat ‘crazy’ idea.

In the early 2000s, the R&D units of European oil corporations began exploring CCS possibilities (Boasson, 2005). Due to the significant size of their technological units, and their prior experience with enhanced oil recovery, engineers from the oil industry were able to develop the technological foundation for CCS. By around 2005, the European oil corporations had recognized climate change as the most pressing social issue confronting the industry, but corporate headquarters promoted emissions trading as the key policy solution (Boasson et al., 2009). CCS was an issue mainly for the R&D departments, and was discussed primarily in relation to petroleum exploration and processing, not as a way of mitigating emissions from stationary energy production. As for the environmental organizations, Greenpeace opposed CCS and, with the exception of Norway’s Bellona foundation, no environmental organizations actively supported the development of an EU policy on CCS.

On the whole, the governments of EU member states saw CCS as a R&D issue, not one of policy. Germany, the Netherlands and the UK initiated CCS research initiatives,
(Meadowcroft and Langhelle, 2009; Praetorius and von Stechow, 2009, pp. 139, 146–147; Scrase and Watson, 2009; Vergragt, 2009), but elsewhere in the EU, CCS was somewhat of a non-issue (Buhr and Hansson, 2011; Costa, 2011; Jankowska, 2011).

Eventually, a string of global developments provided some incentives for the development of CCS. In 2001, the Conference of the Parties to the UN Climate Convention requested the Convention’s Intergovernmental Panel on Climate Change (IPPC) to assess ‘the scientific, technological and socio-economic aspects of CCS’ (Coninck and Bäckstrand, 2011, p. 371). Also the International Energy Agency became involved, hosting CCS conferences and issuing several CCS reports. Moreover, the USA emerged as a firm proponent of CCS (Helm, 2009; Stephens, 2009; Coninck and Bäckstrand, 2011). The Bush administration launched a CCS project – FutureGen, aimed at constructing the world’s first large-scale zero-emission coal-fired power plant. However, as noted by one EU official we interviewed, ‘CCS had a credibility problem (…) The Bush initiatives were more negative than positive for the EU process because the environmental camp was against everything that Bush was for.’

CCS was emerging as a possible climate-policy issue, but in this period no entrepreneurs acted as clear and vocal proponents of the development of an EU CCS policy.

4.2. 2005–2010: Climate hype underpins CCS entrepreneurial action

A window of opportunity for CCS opened in this period. Negotiating an international successor agreement to the Kyoto Protocol started in 2005, and that year marks a shift in the CCS attitude of the Commission. Explains an EU official we interviewed, ‘I believe the international negotiations were important for the change in the Commission approach to CCS: this was the only way to deal with the challenge. Many [Commission officials] came out as CCS supporters at the time.’ Another external factor working in the same direction was the IPCC special report on CCS (IPCC, 2005; Meadowcroft and Langhelle, 2009, p.6). The UN engagement and the scientific backing made it easier for climate-policy officials within DG
Environment to frame CCS as a credible measure – particularly useful, since Bush’s CCS advocacy had given CCS somewhat of a bad name in the EU.

The Commission’s internal shift in attitude was also related to the growing attention to energy security. This heightened focus was closely related to the EU’s energy-policy relations with Russia (Commission, 2006). DG Environment had been internally split on CCS, and our interviews with EU officials indicate that this split lingered on: ‘there was a majority backing CCS in the Commission overall before there really was a positive majority within DG Environment’, according to one interviewee. Climate-change officials were rather positive, but officials dealing with resources and water were more negative, because of potential problems with storage and leakage, among other things. Eventually, CCS supporters managed to create consensus on the importance of ensuring strict control of the storage processes.

So it appears that some key entrepreneurs within the Commission were beginning to see CCS as a policy ingredient that could promote EU climate ambitions as well as improve the EU’s global economic and technological competitive position. For instance it seems that Mogens Peter Carl (then Director General for Environment) and Jos Delbeke (then Director of Climate Change and Air) contributed to make it appear appropriate to include CCS in the EU climate policy debate. However, they did not initiate the NER 300 model – they only ensured that CCS was on the agenda. In February 2005, the Commission announced a second European Climate Change Programme (ECCP II), noting that particular attention would be directed to CCS (Commission, 2005, p.11). A CCS working group was established; it produced a report that emphasized ‘the urgent need for the development of a policy and regulatory framework for CCS’, and recommended that the Commission should outline a proposal for an EU CCS regulatory framework (Commission, 2006, p.7). In April 2005, Energy Commissioner Andris Piebalgs stated that Europe should take the lead in developing the technology (ENDS Daily, 2005).
DG Research now initiated the European Technology Platform for Zero Emission Fossil Fuel Power Plants (ZEP) (Claes and Frisvold, 2009), involving various branches of industry (utilities, oil and gas, equipment suppliers), scientific and research communities, and environmental organizations. Bellona had been given the role as secretariat of the ZEP, and used this position to encourage ZEP to launch proposals for EU policy. In 2006, ZEP launched a strategic deployment document that recommended, among other things, the creation of EU regulations on CO₂ storage and the creation of ‘an early mover funding mechanism to support the development of 10–12 large-scale CCS projects which demonstrate a diverse range of infrastructure, technologies, fuels and storage locations’ (ZEP, 2006, p.2). The document did not specify whether funding mechanisms should be created by the EU or its individual member states. Our Brussels interviewees agree that, of the nearly 40 technology platforms, ZEP assumed an extraordinarily proactive role in the development of EU climate policy.

The UK now took a more proactive position. Political consensus had emerged concerning national governmental funding of CCS. However, we do not find a similar rise in CCS interest in other member states, although the issue of on-shore storage had spurred some controversy in Germany.

Meanwhile, the climate issue was coming into focus, with for instance the 2006 IPPC fourth assessment report (Andresen and Boasson, 2012). The Commission responded with insistent calls for climate action (see Oberthür and Pallemaerts, 2010, p. 46). A central EU Commission official interviewee underscored, ‘it is important to understand that the “new drive” did not result from pressure from any specific member state (…). Rather, the Commission was responding to what was in the wind.’ In January 2007, the Commission published a set of important documents and called for a range of actions and policies to

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3 ZEP industry members are companies, not industry organizations or other umbrella organizations.
strengthen climate policy and to support an independent target of 20 per cent reduction in GHG emissions by 2020 (Commission, 2007).

Key new EU climate targets were then adopted in March 2007 – the 20/20/20 targets. The Communiqué from the European Council was a clear indication that member states had increasingly begun to board ‘the CCS train’ started by the Commission (Council, 2007). First, the Commission was asked to establish a legal framework for CCS, to allow CO₂ to be safely stored underground. Second, and particularly important, it initiated a policy to ‘stimulate construction and operation by 2015 of up to 12 demonstration plants’. However, the Council decision did not mention the development of any specific funding mechanisms to ensure realization of these demonstration plants.

In January 2008 the Commission then launched its package of policy proposals, which included a draft CCS directive (Commission, 2008b) and a revised EU ETS for 2013–2020 (Commission, 2008c). However, this climate package proposal offered few incentives for member states to promote CCS construction, besides proposing that power plants should be ‘CCS-ready’ where technically and economically feasible. An accompanying Commission Communication discussed obstacles to establishing up to 12 demonstration plants by 2015 (Commission, 2008d). It was increasingly realized that the ETS would not offer a carbon price high enough to underpin and justify CCS, and it had been indicated that successful CCS development would require the creation of an additional and specific support mechanism (Commission, 2007, p.6). In the ETS directive draft, the Commission mooted the general idea of setting aside ETS allowances for climate mitigation purposes, such as CCS, but this was only a loose idea (Commission, 2008c, Art.10.3c).

The Commission called for swift deliberations on the package. According to one well-informed interviewee, already in April/May 2008, and before France had formally assumed the presidency, it was decided to get the package adopted at the December 2008 European
Council. The rationale was that the EU needed to finalize its internal climate policy in due time to maintain its leadership position in the run-up to and at the Copenhagen conference in 2009. As decisions in the European Council are made by unanimity (due to its traditional role as the venue for ‘history-making decisions’ in the EU), this had important implications for the whole decisionmaking dynamic (Peterson, 1995; McCormick, 1999, p.16). Instead of the full co-decision procedure (see Haigh, 2011), trialogue talks involving the Commission, the Parliament, and the Council were to sort out any main disagreements in a more rapid, single round.4

At this stage, the UK-based environmental investment management firm Climate Change Capital proposed that a certain number of allowances should be set aside from the New Entrance Reserve in the ETS, and that the auctioning revenues be used to finance CCS pilot projects (Hampton, 2008). The idea was soon taken up by a range of entrepreneurs: environmental organizations E3G and Bellona, the oil corporation Shell, the French power-plant equipment producer Alstom, and the electricity utility Vattenfall (Center for Public Integrity, 2011). A CCS financial-mechanism lobby network emerged, made up of environmental organizations, industry actors, members of the European Parliament (MEPs), Commission officials and member-state representatives. Eventually the core actors gathered under the name ‘CCS leadership coalition’ (Bellona, 2008).

The growing number of participants in ZEP made it harder to develop common positions. Most importantly, our interviewees point out that utilities were reluctant as regards promoting CCS funding, whereas the oil corporations supported a more active approach.

Mixed feelings as to CCS lingered on in the Parliament, with the Greens as the most sceptical group. Chris Davies, from the Liberal group, was appointed Parliament Environment

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4 For information on the trialogue procedure, see http://ec.europa.eu/codecision/stepbystep [accessed 20 February 2012].
Committee Rapporteur for the CCS Directive in February 2008. Davies, who had not engaged in CCS previously, summed up his view on CCS in these words: ‘I hate CCS…It is just that I hate coal more. We have to promote CCS. China, India and the US need to realize that they will have to pay a lot more if they want to use coal’ (quoted in Friends of Europe, 2008, p.24). Davies swiftly started to exploit the policy window for CCS in an entrepreneurial manner. In the first debate in the Parliament conducted in early May 2008 he put forward two main proposals: first, that up to 700 million allowances be set aside in the ETS post-2012, to kick-start CCS; second, that all new fossil-fuelled power plants should be ‘CCS-ready’: no carbon-emitting power plant should be approved from January 2015 unless 90 per cent of its CO₂ emissions could be captured and stored (ENDS Daily, 2008a).

In early June, Parliamentary Rapporteur for the ETS revision, Avril Doyle, followed up on Davies’ call for setting aside allowances within the ETS New Entrants Reserve for funding CCS. This spurred a dynamic within the Parliament, and in early July the ETS and CCS Rapporteurs proposed that up to 500 million allowances should be set aside within the ETS (Point Carbon, 2008a). The Parliament now emerged as something of a network hub for entrepreneurs wanting stronger linkage between the ETS and CCS policies.

A meeting of the Parliament Environment Committee in September endorsed the Davies–Doyle proposal. On this occasion, Davies also put forward the idea that, after January 2015, CCS should be mandatory for power plants over a certain size. Our interviewees emphasize the importance of the close cross-party collaboration between the two rapporteurs. According to one central actor, ‘nothing would have happened if the Parliament had not acted on the issue. Chris Davies was crucial, but Avril Doyle was maybe even more important than Chris: she had the money!’ And so, in a tense meeting on 7 October 2008, the Parliament’s Environment Committee adopted two important CCS reports. First, the MEPs endorsed an amendment setting aside up to 500 million allowances from the ETS New Entrants Reserve

The Council of Ministers reached a first compromise agreement in late October. In this agreement, member states gave support to the Commission’s proposal to make power plants ‘CCS-ready’ where technically and economically feasible, and rejected the Parliament’s call for specific emission performance standards. Furthermore, a majority opposed the Parliament’s proposal of setting aside 500 million ETS allowances for funding CCS demonstration projects (ENDS Daily, 2008c). The stage was now set for EU ‘trialogue’ negotiations, which commenced in early November.

Rapporteur Chris Davies toured the capitals of the EU member states promoting the Parliament’s amendments. His efforts were coordinated with those of other CCS promoters who also visited the national governments of major EU member states. Moreover, our interviewees point out that the French electricity equipment producer Alstom lobbied the French Presidency in order to ensure that the Parliament’s proposals ‘remained on the table’ during the high-level negotiations on the climate package. Moreover, the director of DG Environment, Mogens Peter Carl, joined the French Presidency (Financial Times, 2011). He had headed the development of the climate package, and several of our interviewees emphasize that he was central in ensuring that the Parliament proposals stayed alive.

Most member states remained silent, without any strong positions on CCS. As one interviewee put it: ‘CCS was really such a small thing; few actors paid much attention to it. Many of the other issues in the climate package required much more attention.’ Member-state interviewees as well as EU officials note that the UK was the most outspoken proponent of a CCS financial mechanism. In 2008, this was the main negotiating point of the British
government in deliberations on the climate package. At this stage, the German Prime Minister Merkel was definitely pro, whereas her environment minister was sceptical. Still, a joint statement from the German ministries of the environment, economics and research in September 2007 had characterized CCS deployment as ‘necessary and possible’ (Praetorius and von Stechow, 2009, p.147).

In order to get support from a broader group of actors, CCS promoters introduced a link to renewable energy in the funding mechanism. This was especially important for gaining support from CCS sceptics, and made some governments, like that of Spain, more supportive. Initially, Eastern European member states, such as Poland, were rather sceptical, especially because they did not want funding to be taken from the ETS New Entrants Reserve. Eventually Poland became more positive – and our interviewees indicate that this change resulted from targeted lobbying that managed to convince Poland that it would be able to get CCS and renewable funding from the financial mechanism.

By mid-November 2008, a significant number of member states had changed their positions and a majority of the Council supported some kind of CCS earmarking of ETS allowances. The Commission, and DG Environment in particular, argued for a ‘sizeable reduction’ in the number of earmarked allowances (ENDS Daily, 2008d). The French presidency basically sided with DG Environment and proposed a lower figure, between 100 and 200 million allowances, worth between two to four billion euros (Point Carbon, 2008a; Reuters Planetark, 2008). Also the Parliament sought a compromise: Avril Doyle opened up for the possibility of accepting 350 million earmarked allowances, instead of the 500 million requested earlier (Point Carbon, 2008b).

EU officials and civil society interviewees give lively descriptions of the dramatic last-minute negotiations. These individuals were not present in the room, but many had text message contact with the negotiating parties. Funding of CCS was one of the last unresolved
issues. Discussions had begun with a proposal for 200 million allowances to CCS funding. No agreement seemed in sight, but the parties knew they would have to find a solution before the announced press conferences. At the very last minute, the British dug their heels in and obtained an increase in the number of allowances from 200 to 300 (Euractiv 2008b). So the final figure ended up being 300 million allowances.

As the action-packed European Council meeting took place prior to the final plenary meeting in the Parliament, the latter found itself faced with having either to accept or to reject. Here we should also recall that the two committees, and particularly the rapporteurs, had been heavily involved throughout the trialogue process (see Parliament, 2009, p.15). The Parliament chose to accept, formally endorsing the deal on 17 December 2008, and the Council formally adopted the package in April 2009. The special process seems to have been of direct importance to the CCS funding outcome. As one EU official put it: ‘I am sure it would have been shot down if the case had followed the formal procedure (…) this would never have been possible if there had been two readings (…) When it comes to the urgency as such, it certainly did help. I do not think a compromise like that would have been possible in 2010.’

5. Discussion and conclusions

We have seen that many different actors performed entrepreneurship in the policy process that led to invention and adoption of the NER 300 fund. These entrepreneurs were loosely coordinated, had differing motivations and commitments to CCS, and influenced policy development through various different entrepreneurship mechanisms.

Some acted as tortoise entrepreneurs, while others took a carpe diem approach. Commission officials, with Mogens Peter Carl and Jos Delbeke as prominent examples, can be seen as ‘climate tortoises’: they had a basically long-term commitment to the climate issue,
but had initially not committed to the NER 300 idea. They pursued the broader goal of an overall ambitious EU climate policy, to which they argued that the ‘burying of carbon’ could make an important contribution. The political leaders acted more as *carpe diem* entrepreneurs in the climate discussions: their climate actions seem to have been motivated not only by their commitment to mitigating climate change, but also their desire to make a mark on global climate politics. Bellona was the sole CCS tortoise: it was the only entrepreneur with a long-term commitment to CCS, and it enhanced its influence through ZEP. The British environment group E3G, as well as the business groups and the MEPs (particularly Davies and Doyle), did not commit to CCS as a climate solution until the beginning of 2008. Pushing CCS gave them an opportunity to demonstrate their own political vigour and leadership.

Kingdon’s ([1984] 2011, p.165) description of entrepreneurs as advocates who have been lying ‘in wait in and around government with their solutions at hand’ fits the tortoises but not the *carpe diem* entrepreneurs. The idea for the funding mechanism emerged at a very late stage, and it was suggested by an actor not otherwise particularly engaged in the actual CCS policy-development process, Climate Change Capital. Moreover, most of the core actors in the 2008 lobby campaign did their window-leaping at a very late stage, as was the case with the two central MEPs (Davies and Doyle) and E3G. Chris Davies went out of his way to get a CCS funding mechanism adopted, but it seems that his main initial motivation was to show that he could set his mark on the outcome of the EU climate package, not to promote any given CCS policy design.

The various entrepreneurs differed in the motivation and objectives for their CCS engagement. Prominent Commission and member-state officials (such as Commissionaires and heads of state) aimed at producing a credible and coherent EU policy, in which CCS was regarded as a valuable component. Other actors – mainly MEPs, but also representatives of environmental organizations and industry – aimed more specifically at getting a CCS
financing mechanism adopted: but, in line with the arguments of Fligstein, they held rather flexible views on the exact design (see Fligstein and Mara-Drita, 1996; Fligstein, 1997).

Preference shaping entrepreneurship contributed to window creation, and the window was exploited in a way that underpinned NER 300 adoption. High-level Commission officials and the heads of state used the approaching Copenhagen climate summit and the international energy security challenge to fuel a shared sense of urgency, arguing that the EU needed to develop credible policies swiftly in order to act as a leader in the international climate negotiations. They also argued that CCS would have to be included in the long-term mitigation plan. Their interpretation of the international situation underpinned the creation of a window of opportunity for new EU climate-policy initiatives.

Environmental policy scholars have argued that EU climate policy interacts closely with the broader international situation, especially with developments in global climate negotiations (see Slingenberg, 2006; Oberthur, 2006; Oberthur and Dupont, 2011). We have shown that factors external to the EU can play important conditioning roles for the success of entrepreneurs seeking to create policy windows: the entrepreneurs’ creative interpretation of the international situation helped to create a window of opportunity for new initiatives in EU climate policy. This in turn provided carpe diem entrepreneurs with important backing for policy invention. Thus we see that acknowledging the role of developments external to the specific policy system/organization at hand (here: the EU) can make possible further nuances than the ‘closed/inward-focused’ analytical approach put forward by John Kingdon.

Entrepreneurs devoted to CCS sought to present CCS as an indispensable climate solution, arguing that CCS was necessary for the EU to be able to tackle future climate obligations and challenges. They also worked to change how EU member states perceived the interests of their national electricity industries. The argument was that, since the European electricity industry was so heavily reliant on coal, and since that would be a challenge under a
tougher international climate regime, CCS stood out as a carbon abatement option that was in the interest of the electricity industry. Member states gradually aligned to this view, but the electricity industry did not actively support the NER 300 until after it had been adopted (Boasson and Wettestad, 2013). This is noteworthy, since much political science literature has implicitly or explicitly assumed that industry will shape the preferences of national governments and EU officials. Instead, what we see here is that entrepreneurs may influence industry positions through EU decision-making.

In fact, the CCS lobbyists had a tactical ‘stick-and-carrot’ plan behind combining the two proposals: the emission performance standard was a negative ‘stick’ aimed at the polluting industries, intended to make it easier to muster support from green MEPs for the financial mechanism. The financing mechanism was then more of a ‘carrot’, rewarding large source polluters that invested in CCS. The entrepreneurs included renewables in their proposal in order to gain support from MEPs as well as member states (Spain followed up on this enthusiastically in the very final phase of climate-package negotiations). Moreover, the entrepreneurs tactically shifted their line of argument according to their interlocutors, to get more actors on board. This persuasion strategy was effective. Hence, we see that persuasive window creation was central to the creation of the climate policy window, while persuasive window exploitation can help to explain why NER 300 was invented and adopted.

Also procedural engineering was involved, both generally and more specifically. Commission officials together with the German and French presidencies altered the formal decision-making procedures in a way that boosted the capacity of the political system for efficient, multiple decision-making. Indeed, interviewee information indicates that, in the CCS case, entrepreneurial success hinged on the special procedure for finalization and adoption of the climate package. Also important was the fact that the ETS revision and the new CCS rules were to be determined simultaneously. These measures were increasingly
developed as parts of the same package – EU’s the climate and energy policy package. Commission officials had helped to ensure that CCS was linked to the policy window at the outset, but they could not have foreseen the type of interaction that increasingly came to unfold in 2008. Procedural window creation helped to keep the general climate policy window stay open longer, creating a foundation for CCS-related window exploitation entrepreneurship.

MEPs changed the very basis for CCS decision-making, by linking the ETS and the CCS issue in a new way and putting up proposals for voting. With their skilled tactics, the two Parliamentary Rapporteurs Davies and Doyle succeeded in mustering support for this issue linkage. Their collaboration is indeed remarkable, not least since they represented different party groups. Moreover, time pressures related to the need to finalize the package gave the rapporteurs greater leeway, forcing the Council to develop compromises. This indicates that scholars of entrepreneurship would be well advised to pay more attention to procedural engineering: it contributed to the creation of the window of opportunity as well as to the more specific adoption of the CCS policy invention.

The case of NER 300 shows that entrepreneurship may be highly significant to the process of policy invention. Table 2 summarizes the entrepreneurial mechanisms and the varying roles of the different entrepreneurs. Our discussion of entrepreneurship leads to five conclusions of importance to the literature on policy innovation.

First, this case illustrates how policy invention may come about also without the presence of ‘one great man’ with a clear plan and stable policy objective. A range of different and loosely coupled entrepreneurs may contribute to policy invention, and the policy invention may serve another purpose than originally envisaged. Interestingly, to date NER 300 has funded only renewable projects and not a single CCS project, and the EU is now
considering other ways of incentivizing CCS (Commission, 2013). NER 300 has proved popular as a funding model, but is likely to be more important in other issue areas than CCS.

Table 2. Four entrepreneurship mechanisms that underpin policy invention

<table>
<thead>
<tr>
<th>Entrepreneurial commitment</th>
<th>Entrepreneurial techniques</th>
<th>Preference shaping</th>
<th>Procedural engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tortoise</td>
<td>1. Persuasive Window Creation</td>
<td>Commission officials (particularly Delbeke and Carl) and ZEPs (particularly Bellona)</td>
<td>2. Procedural Window Creation</td>
</tr>
<tr>
<td>Carpe Diem</td>
<td>3. Persuasive Window Exploitation</td>
<td>Various CCS lobbyists (e.g. 3EG, Alstom), MEPs (Davies and Doyle)</td>
<td>4. Procedural Window Exploitation</td>
</tr>
</tbody>
</table>

Second, it is useful to distinguish between what we have termed ‘tortoise’ and ‘carpe diem’ entrepreneurship. Tortoise entrepreneurs work persistently, over time and with longer-term policy horizons. In contrast, carpe diem entrepreneurs have a more temporary and shallow commitment to the issue at hand. However, in this case there can be no doubt that the carpe diem entrepreneurs were crucial in getting the inventive funding approach established. Actors with a basically stable overarching commitment to a policy area are likely to function as tortoise entrepreneurs, and in the EU system it is often the Commission that has the most stable and enduring issue-commitment. Tortoises who helped to create the broad and general climate policy window paved the way for issue-specific carpe diem entrepreneurship.

However, actors who start out as carpe diem entrepreneurs may turn into tortoises. It is too early to say whether the CCS carpe diem actors will develop a more enduring commitment. The NER 300 case has shown that tortoises engage primarily in window
creation, whereas *carpe diem* actors focus on window exploitation. In the future, CCS might develop into a larger issue, and then it might be promoted by a larger group of CCS tortoises. If they succeed in opening a new policy window for CCS, we may see new *carpe diem* actors emerging to promote other policy solutions than NER 300.

Third, we find that entrepreneurs played important roles with respect to window creation as well as window exploitation. Hence, Kingdon’s metaphor of ‘surfers waiting for the perfect wave’ is incomplete: it gives the impression that the windows appear ‘out of the blue’. As we have seen here, policy windows may to a significant degree be deliberately created by entrepreneurs.

Fourth, we hold that preference shaping can contribute to the creation of a policy window – but that window will become more important and lead to more inventive policy decisions when coupled with procedural engineering. Successful procedural engineering will mean more decision possibilities and a longer period of time in which the window stays open. And similarly in relation to window exploitation: window exploiting entrepreneurs become particularly powerful when they combine preference shaping with procedural engineering. In the CCS case, the entrepreneurs linked specific issues, creating a spillover effect between the ETS and CCS.

Finally, it should be noted that we are not saying that entrepreneurship will always be as important as it was with the NER 300 case. This specific case may indicate that entrepreneurship will be particularly important in new issue-areas that are not tightly consolidated by existing political demarcation lines. Moreover, our focus here has been on the entrepreneurial aspects of the case: the social mechanisms involved are discussed at greater length elsewhere (see Boasson and Wettestad, 2013).
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