EU Climate Benchmarking: Qualifications, Compromises and Compliance in the UK and Germany

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Abstract: Taking a constructivist IPE approach this paper peers beneath, at least rhetorically committed, discourses on climate change and mitigation in international organisations through an examination of EU climate benchmarking practices. It poses questions about motivations for climate benchmarking, methods used to construct benchmarks and about compliance at the national level in Germany and the UK. An examination of the motivations behind climate benchmarks points, predictably, to the commitment to keeping global warming to 2˚C above pre-industrial level but also a variety of ways in which this new objective has been 'qualified' by other normative ideas. Two sets of qualifying ideas are explored here in some detail – ideas about the desirability of economic growth, and its centrality within sustainability, and about climate change being a separable area of governance. It is assumed that climate benchmarks – by embedding targets and measuring compliance will drive certain types of change at the national level. An exploration of the methods used to establish climate benchmarks then reveals how these ideas became embedded thereby allowing and rewarding certain practices over others painting a picture of EU benchmarks as 'reformist' but not 'radical'. Interestingly climate benchmarks are broadened to include measurement of progress towards renewable energy and energy efficiency targets. Finally, analysis of UK and German compliance with EU climate benchmarks reveals the quite highly differentiated and complex politics of compliance – differentiation that is hidden by benchmark measurements. EU climate benchmarks, given their technocratic simplicity, tend also not to reveal the scale of changes inferred in complying with benchmarks – for example in energy systems - nor indeed the degree to which even 'reformist' benchmarks are becoming contested. As such the inability of climate benchmarks to 'see' the deeply complex politics of compliance may ultimately be to the detriment of both their credibility and potentially their survival.

Keywords: global governance, climate change, benchmarks, energy policy, Germany, UK

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Introduction

For at least thirty years some IOs, in particular the UN, governments and NGOs have worked incredibly hard to establish and diffuse new global norms based around mitigating for anthropogenic climate change. A variety of speeches and texts associated with these organisations reveal arguments about the severity of implications for humankind if climate change is not mitigated but arguably less understanding of the scale of the task that is being set. Rising temperatures are increasingly understood to have the potential to make parts of the earth uninhabitable, in particular around the equator and coastal regions with serious implications for humanity, democracy and 'the way we live'. Amongst international institutions some degree of agreement has been reached. There are United Nations Framework on Climate Change (UNFCC) targets and measures, albeit clear difficulties with extension beyond 2012, world leaders regularly cite climate change as one of the world's primary concerns and there has been a proliferation of agencies, committees, international protocols.

This article peers beneath these at least rhetorically committed climate discourses by exploring EU benchmarking practices with the intention of highlighting some of the specific contingencies and complex politics involved. This exercise is important not least because much new research suggests that targets of limited global warming to 2˚C won't be met and that radical and rapid change is still needed (IEA 2013). Benchmarks are understood here as one method pursued in the process of establishing new norms around climate change mitigation. The EU benchmarks embody binding greenhouse gas (GHG) emissions reduction targets that are separate from but related to UNFCC targets. There are those that have argued that these newly set climate benchmarks should be too important for or above politics, often understood in terms of conflict, whilst others claim that it is only politics that gets in the way of successful climate change mitigation and energy transition (Garner 2011). This paper argues that benchmarks are themselves political to the extent that there are certain political ideas that have qualified new climate norms and that these are constantly open to contestation. It focuses on two ideas that have impacted upon the construction of climate benchmarks and standards. They are, firstly, that climate change can be treated as a separate governance area and, secondly, that economic growth in addition to environmental wellbeing is part of what constitutes 'sustainable'.

The paper is structured around two questions in relation to climate benchmarking. Firstly, what motivates climate benchmarking and what methods are used to establish benchmarks? Secondly, how does compliance with benchmarks work in practice – what effects do benchmarks have on behaviour and were these what was expected? In terms of motivations the EU is taken here as a central part of the process of trying to establish and embed new, global norms of climate mitigation and adaptation within severe temporal constraints. It has been

widely claimed that the EU is a 'leader' in climate governance and it has made relatively more progress than any other transnational organisation in setting and agreeing benchmarks. The paper explores the methods employed in order to establish, measure and monitor climate benchmarks paying close attention to how assumptions and norms qualify and colour what targets are chosen, what is left out and what kinds of policies and choices these qualifications infer.

In terms of considering questions around compliance the emphasis here is on exploring the impacts of climate benchmarking at the national level – but contrary to much IO and benchmarking literature the focus here is on comparative compliance between two developed rather than developing countries. The UK and Germany are taken as sites where processes of complying can be explored – partly because both countries claim leadership in mitigation and score well and at similar levels on benchmarking tables. From these results one might assume a relatively consensual politics of compliance but it is, however, at this level that the politics of climate benchmarking are revealed as highly complex, contested and contingent. These differences and associated contestations allow us to 'see' the politics of climate benchmarking, understand the *types* of practice change that compliance with benchmarks has resulted in as well as counter-arguments against benchmarks as currently set.

1. Climate Benchmarking

Climate benchmarking, as already suggested, is understood here within the wider context of international climate governance. To the extent that a 'global' agreement exists regarding what action is to be taken this has been restricted to rather technical targets, some binding some not, of reducing GHG emissions in an attempt to keep global warming to 2˚C above pre-industrial levels that underpin the Kyoto Protocol and other UNFCC agreements. This is a socially constructed, highly normative field informed in part by recent accumulations of scientific knowledge about how humankind's various economic and social practices impact upon our environment and gains in credibility and legitimacy amongst political elites. This new scientific knowledge, in particular the anthropogenic nature of change, has historically been highly contested by a range of influential political and corporate elites around the world but some degree of consensus has formed around the notion that human's are responsible and that action must be taken (see Bernstein 2001; Carter 2010). This might approximate what Kuhn would refer to as a paradigm shift in scientific knowledge about how human actions relate to the environment, in particular to the phenomenon of global warming (Kuhn 1962).

The approach to benchmarking taken here, as part of wider processes of norm creation and diffusion, sits within constructivist IPE approaches to international governance (Broome and Seabrooke 2012; Broome 2013; Hansen and Mühlen-Schulte 2012). Broadly speaking certain norms have been understood from this perspective as influential over a variety of governance practices, at international and national levels, and benchmarks partly as devices of influence and inter-action. Benchmarks have been understood as tools that can be used within procedures of establishing standards according to norms and of enforcement and 'persuasion to conform' (Best 2010 in Seabroke 2012: 489). They can be part of 'peer review' processes that allow for comparing countries' performance against the set standards (often numerically defined) (Porter 2012) and also for the purpose of 'shaming' those that do not comply (Weisband 2000). Along with other measures benchmarks can have the ability to constitute a new common sense that naturalises particular policy options thereby in practice narrowing down policy options and normalising norms in practice (Seabrooke 2012: 489).

Such uses of benchmarks have been observed across a wide variety of issue areas, albeit analysis has often concentrated on the areas of financial and economic governance (Hansen and Mühlen-Schulte 2012: 457). There are senses in which benchmarks and their use across different IOs, the IMF, World Bank and OECD, has been described as 'generic'. This is not surprising given claims by such organisations that they are arbiters of knowledge about 'world's best practices' and 'good governance' (Broome and Seabrooke 2012: 7). Such claims have led scholars to conceptualise some IOs as defining and enforcing governance according to 'Washington Consensus' norms underpinned by neoliberal economic ideas about the role of the state in economic governance, economic efficiency and fiscal responsibility. In this vein neoliberal economic ideas in particular, understood as embedded within IOs, erect intellectual boundaries around the scope of policy imagination available to IOs in their everyday activities (Broome and Seabrooke 2012: 2) but also around policy prescriptions and benchmarks that impact upon policy at the national level. Countries are often viewed, through these lenses, as economic rather than social, political or religious entities.

As already observed elsewhere, however, there are differences between IOs - even between those operating within the field of economic governance (Broome and Seabrooke 2012: 8). A variety of modus operand, objectives and internal policy debates have been observed as well as claims made that there is more than one Washington Consensus. It would follow, therefore, that attempts to disaggregate benchmarking practices according to a range of different governance issue areas may well reveal both important similarities but also contingencies and specificities. Such an approach can also be situated in relation to the observation that even within governance systems that are defined as bounded by certain norms or models of capitalism, specific sectors may be interpreted and governed very differently (Crouch 2005). This claim is

echoed in recent IPE think pieces that call for greater attention to analysis of issue areas, such as climate change and energy (Katzenstein 2009; Keohane 2009).

Although still firmly grounded within governance norms, benchmarks here become the objects of analysis rather than the institutions that devise and use them. Benchmarking practices, motivations behind them, methods used to pursue them and types of compliance with them, are explored in order to provide insights into some of the specifics involved in the governance area of climate change. As the example here shows understanding in more detail how climate benchmarks are constructed and structured, including what is deemed an appropriate objective or course of action, tells us a great deal about *what* standards and policy practices are being encouraged at national levels – and what is left out. This has implications for policy prescriptions and responses at national levels (see Broome and Seabrooke 2012: 8), as well as for different nations' willingness and capacity to comply. Although, as will be seen in greater detail below, there are arguments that climate governance at the international level, UN as well as EU, has been heavily influenced and compromised by neoliberal economic ideas and deference to existing power and governance structures there are new agendas, norms and ideas at work here. Early environmental agendas sought to challenge global as well as national status quo's – both power and normative – but with greater or lesser degrees of success and have themselves been compromised in particular ways.

What is also worth questioning here the degree to which what constitutes 'good' governance in the area of climate change mitigation, as opposed to other areas, is established and reflected in benchmarks. An argument can be put forward, at least on a relative basis, that although certain norms have been agreed and embedded, for example the need to reduce GHG emissions in order to slow down the current trajectory of global warming, this is also a far less well-established area of transnational governance and benchmarking. Benchmarks tend to embody certain ideas about what the *direction* of climate, and by extension energy, policy should be but relatively less about *how* this should be achieved and might, as such, be seen as less prescriptive or bounded. Agreements that have been reached, Kyoto and EU, have been very hard won and are overtly subject to further renegotiation as targets are all temporally fixed (i.e Europe 20-20-20). IOs, governments and NGOs and those that work within them have arguably been working from a far less established framework of ideas about what is right, what standards should be and how to measure them given the somewhat unprecedented nature of climate mitigation as an area for governance. As such, in line with Stevenson on climate governance, climate norms are understood here as fluid or specifically as emergent rather than fixed (2011: 998).

2. Climate Benchmarking: Motivations, Expectations and Methods

This section examines in more detail some of the motivations and expectations that lie behind climate benchmarking practices, with an emphasis on EU, as well as on the methods used to establish and operationalise benchmarks. The analysis here highlights two ways in which climate benchmarks have become qualified such that they allow and encourage certain policy practices over others.

2.1 Motivation: to establish new international climate norms

The primary motivation behind climate benchmarking is similar to that of wider climate governance processes: to establish new norms around the objective of slowing anthropogenic climate change thereby limiting global warming. Much of the thinking that motivates the need to establish climate norms is highly technical in nature and based on early discoveries about how energy reaches the earth from the sun, how it is then absorbed and radiated back into space as well as how some gases in our atmosphere act like the glass in a greenhouse to trap some of this energy - causing surface temperatures to rise (Giddens 2010: 17; see also Garner 2011: 2).[1] The more such greenhouse gases (GHGs) become trapped the greater the rise in surface (and ocean) temperatures. Over the past 150 years, since the Industrial Revolution, GHGs in the atmosphere have progressively increased and continue to do so (IPCC 2013: 4). As humans live and operate within the confines of the earth and its atmosphere we are all in some way connected to global warming making it the ultimate global problem. From this perspective the list of potential implications for humankind of warming above 2˚C (over pre-industrial levels) is long and makes terrifying reading: melting polar ice caps, rising sea temperatures and levels, floods, famines, mass transnational migration, war, death on a truly genocidal scale. The probability and profundity of these impacts rises with each 1˚C rise in temperatures to the degree that an end of civilisation as we know it, including social constructs such as democracy, can be and are predicted (IPCC 2007 in Giddens 2009: 22; see also Stevenson 2011: 997-8; Burnell 2012: 818). [2]

For some, given this understanding of climate change, there is no politics *of* climate change as it is about technical, infrastructure and system transition along measurable metrics towards a clean and sustainable future (Garner 2011: 6). Frustration is often expressed that the technologies and policies exist for climate mitigation to proceed (at low or no incremental cost)

[1] The greenhouse gases covered by the UNFCC and EU targets are: carbon dioxide, methane, nitrous oxide and fluorinated gases such as hydroflourocarbons, perflourocarbons, sulphur hexafluoride and nitrogen triflouride. For an easily comprehensible explanation see: http://ec.europa.eu/clima/citizens/causes/index_en.htm

[2] For example, one predication is that global warming will result in 26 million 'climate displaced people' in the next 20 years (see Burnell 2012: 818)

but that politics, often defined separately and at the national level, actually stands in the way of technical achievements (Compston and Bailey 2013: 1097-8). There are, furthermore, claims that climate change, given that it is so universal and important, should be taken out of 'partisan' political competition in order to give mitigation strategies the secure tenure needed in order to work (Giddens 2009: 189). From this perspective is it not only justified but preferable for climate benchmarks to be set according to technical standards and focused on achieving GHG emission reductions as this relates directly to the accepted interpretation of the problem.

2.1.1 Emergent climate norms and the EU

As already mentioned there are a number of organisations that are active in establishing climate norms but this paper focuses on the EU as a site where targets are agreed and benchmarks established and monitored. EU climate governance is in practice closely inter-related with international climate organisations and agreements, moreover the EU is understood to have been a principal driver within processes of establishing international agreement on climate change as well as in setting UNFCC emissions reduction targets (DG Climate 2014a and 2014d; see also Bernstein 2001: 13; Giddens 2009: 188-9; Carter 2010: 59). The battle to establish a common, international, environmental framework was long and arduous and included a great many compromises from early environmental debates of the 1970s (Bernstein 2001: 32). It wasn't until 1997 that it was finally agreed at Kyoto that 37 developed countries would abide by legally binding emissions reduction targets of 5.2% over 1990 levels by 2008 to 2012. Although clearly not a nation state the EU is given an almost state-like, or perhaps 'special', status within climate protocols and energy organisations. Both the Kyoto Protocol and the International Energy Agency (IEA) include the EU, like member states, as one signatory. It's greenhouse gas emissions are also often measured collectively – figures showing that the EU produces 11% of world greenhouse gases placing it high on the list of the world's emitters (Compston and Bailey 2013: 1).[3]

This might imply a certain level of agreed motivation and expectations within the EU and in the mid 2000s the EU did proceed first by embedding Kyoto targets within EU legislation and then by establishing a new set of targets and standards via the 20-20-20 agreement (see Giddens 2009). Although the EU did had pushed hard for transnational climate targets the first EU integrated strategy for dealing with climate change was designed only in 1998 in response to the Kyoto targets (Giddens 2009: 193). Climate change later became an EU key priority, in 2002, but it wasn't until 2007 that the first co-ordinated strategy, the 20-20-20 climate and

[3] The 'top 6' emitters are China, the USA, the EU, India, Russia and Japan. See: http://ec.europa.eu/clima/policies/g-gas/index_en.htm

energy package, was announced. Agreement may have been prompted by the fact that the Kyoto target period of 2008 to 2012 was by this stage fast approaching.

The 20-20-20 package was, however, in benchmarking terms significant in two ways. First of all it extended the commitment period beyond 2008-2012 by agreeing a new EU GHG emissions reduction target of 20%, over 1990 levels, by the year 2020. But it also makes specific commitments beyond GHG emissions reduction by including renewable energy and energy efficiency within the agreement. Specifically binding targets were agreed to produce 20% of EU energy consumption from renewable sources and to improve EU energy efficiency by 20% both also by 2020 (European Commission 2007). These unilateral EU reduction targets were then enshrined within the climate and energy package, which comprises four pieces of complementary legislation. Each piece of legislation is related to chosen methods of meeting emissions reduction targets including also reforms of the EU Emissions Trading Scheme (ETS), which had started in 2005 but remained central to the 'cost-effective' achievement of greenhouse gas emissions. The language of benchmarking is notable here in that within EU documents binding emissions targets are often referred to, in a quite inter-changeable manner, as benchmarks (DG Climate various).

Binding targets against which the EU and member states are measured for compliance can be interpreted as something qualitatively new and different – what we refer to here as part of an emergent climate norm. There has been a huge proliferation of climate governance and benchmarking organisations over the past years all seeking to realise climate mitigation, better understand the science and create standards for measuring compliance. There have also been efforts to build climate norms into other IOs such as the World Bank (Keohane and Victor 2011: 7). EU monitoring, reporting and verification (MRV) of GHG emissions takes place annually during the European Semester (DG Climate 2014e). For these purposes the EU relies heavily on data produced by the European Environment Agency (EEA) which in turn relies heavily on data produced by member states (European Commission 2013). Aggregate and member state renewable energy data is collected by Eurostat, a data collection agency based within the European Commission, and then included as a measurement in EEA benchmark reports. These indexes are highly quantitative and technical and evaluate where member states stand according to the last measurable data-set, whilst also including some estimations of future emissions and renewable production (EEA 2013; Burck et al 2014; Compston and Bailey 2013).[4]

[4] These are the key emissions datasets including predictive work: http://www.eea.europa.eu/publications/approximated-eu-ghg-inventory-2012 and http://www.eea.europa.eu/publications/trends-and-projections-2013

As has already been observed, however, these climate norms are taken here as emergent in that the targets upon which they rest are time limited. As such, and as discussed below in more detail, EU climate targets are open to, often painful, renegotiation at points in time. This arguably makes the social and political acceptability of climate policy highly important. By examining benchmarking practices at EU and member state levels this paper assumes an ongoing inter-action between established norms and forces for change to these norms.

2.2 Qualifying ideas and emergent climate norms

This section sets out certain assumptions that inform the motivations and expectations behind climate benchmarks and how those assumptions qualify and colour how benchmarks are set in practice. As such it questions how climate benchmarking is formulated within the EU rather than taking it as given (see Broome and Seabrooke 2012: 8). What it shows is that although often understood as technical and/or as central to driving change towards a more sustainable future these assumptions imply a certain kind of politics of climate governance. As such an argument might be put forward that it is not so much politics that 'gets in the way' of climate targets being met, but the political assumptions, decisions and compromises that shape targets and benchmarks that infer certain failures and contestations. This is partly because benchmarks, as currently formulated, reward countries operating in certain ways over others and are, as such, highly political in nature. This argument contradicts arguments often see in climate governance and energy transitions literatures that politics gets in the way of meeting 'apolitical' climate targets as it is the benchmarks themselves that have been politically defined and constructed.

Scholarly work on international climate governance has already highlighted ways in which climate governance has been qualified. In a way not dissimilar from work on IOs that claim the influence of a Washington Consensus Steven Bernstein's book on the compromise of liberal environmentalism sets out in detail how UNFCC norms evolved over time. Albeit Bernstein's work centres around the ecological debates of the 1970s and how they became imbued with existing power relationships and ideational orthodoxies within international governance circles (Bernstein 2001; see also Newell and Paterson 2010). The compromise position ultimately reached has allowed for the establishment of new climate targets and other emergent norms but, at the same time, neoliberal economic orthodoxies about states and markets, and their respective roles in governance, have effected chosen methods of pursuing emissions at UNFCC and EU levels. One primary example of this is the choice of the EU emissions trading scheme, that prices carbon based on the notion of climate change as market failure, as a central method of achieving climate benchmarks at the EU level (DG Energy 2011). Some suggest that such compromises also reflect of earlier attempts to include the USA within the Kyoto Protocol (Newell and Paterson 2010; Carter 2010; Giddens 2009).

The notion that universal standards, such as target setting exercises, can and should drive other policy choices is also deeply embedded within EU benchmarking practices (see Seabrooke 2012: 489). As Connie Hedegaard, the current EU Climate Commissioner, has recently observed "(c)limate solutions are all around - it's now on us to make them the norm" (European Commission 2014a). Her comments fit with the wider approach adopted by the EU Commission of 'mainstreaming' climate policy into other policy areas and IOs. This technocratic, universal approach has received much criticism within climate change literatures (Mathur et al 2014; Newell and Bumpus 2012). This is partly because, like critiques of governance practices in other IOs, technical standards not only tend not to question the assumptions underlying them but also narrow down what human activity is 'seen' whilst also defining what is not (see Scott 1998: 76 in Broome and Seabrooke 2012: 7).

2.2.1 Economic growth is 'sustainable'

A less well-debated aspect of the liberal environmental compromise has been the decision to include economic growth as part of the definition of what is sustainable (Bernstein 2001: 70-71; Jordan 2008: 17). It has been claimed that "… the EU's framing of environmental concerns rests on a primary concern with economic growth" (Bernstein 2001: 53; Giddens 2009: 193-4). The question of how climate change mitigation and economic growth relate to one another by no means new. In environmental debates scholars identify the key split as between 'reformists' that seek environmental sustainability but that allows for growth and 'radicals' that emphasise limits to and/or the undesirability of economic growth. Reformists argue that environmental protection can be effectively incorporated within political and economic structures of modern industrial society (Garner 2011: 8). Radicals, conversely, emphasise a non-hierarchical interrelationship between humans and nature. Nothing short of a radical change to modern living is needed, including a move away from economic growth, for this to become a positive relationship. In practice there is a third group that will be referred to in this paper, labelled for now 'status quo', defined as those that prioritise economic growth but that might make some allowances for climate and/or other environmental questions if growth is not affected.

It is slightly harder to locate the ways in which assumptions about the importance of economic growth have qualified climate benchmarks and how they are formulated – there are, for example, no specific economic growth targets included within climate benchmarks. It is illustrative here, however, to consider briefly the wider EU governance context within which climate benchmarking sits. For example climate targets have been made 'headline goals' of the Europe 2020 strategy. The 2020 strategy is fundamentally about delivering growth, understood in terms of recovery from economic crisis, but growth that is qualified as needing to be "smart, sustainable and inclusive" (European Commission 2014b). The qualification of growth as

"sustainable" refers in particular to the "move towards a low carbon economy" and can been interpreted as an attempt to mainstream new climate standards into other governance areas – in line with the assumption outlined above and a 'reformist' agenda.

The resultant position on growth is, however, slightly more complex in that the relationship between economic growth and climate standards as already suggested also works the other way – climate benchmarks incorporate an allowance for economic growth. This decision reflects a slightly less 'reformist' position whereby economic growth becomes an equal priority with lowering emissions – arguably a position reached in order to secure agreement by all member states to the 20-20-20 targets. Below the unilateral EU target of reducing emissions by 20% member states targets, particularly for sectors not covered by the ETS agreement, are highly differentiated according to economic growth and development. The main split here is between those that joined the EU before and after 2004. Countries like Bulgaria and Romania, for example, are under the energy and climate package allowed to grow their emissions due to their relatively low levels of GDP per capita compared to other EU countries (DG Climate 2014c). There are examples also of built-in growth assumptions benefiting developed countries. Some suggest that the choice of 1990 as the year against which GHG emission reduction targets should be compared was made because it suited certain key counter-parties to the agreement – not least Germany and the UK. Certainly, by March 2007 when the UK agreed to the 20-20-20 targets it had already reduced its emissions heavily as a result of a switch from coal to gas during the 1990s (Garner 2011: 119). Arguably, also the level of flexibility built into ETS schemes and Clean Development Mechanisms (CDMs) allows manoeuvre for economic growth by offsetting (EEA 2013: 44).

Evidence of the way that commitment to growth has further qualified climate targets and benchmarks can be seen also in the kind of targets and benchmarks agreed for energy efficiency. On the surface the commitment to a 20% improvement in energy efficiency by 2020 looks impressive especially given the degree to which improvements in efficiency infer under most measurements a reduction in energy consumption. Given that growth in demand for energy has historically been considered a natural condition of wider economic growth – an assumption that lies at the heart for example of China's global energy programme – reducing demand whilst growing might require a break in this correlation (Kuzemko 2013: 67). For countries that produce fossil fuels, furthermore, there are further correlations between energy, production and exports, and economic growth which is one reason why fossil fuel early-stage production is still supported publically (often via tax breaks) in many countries. Such support is not 'seen' by climate benchmarks. Improved efficiency and reductions in consumption are widely considered by climate campaigners and policymakers to be highly important to reducing emissions but also relatively more difficult to achieve.

The headline 20-20-20 target of a 20% improvement is, however, slightly misleading. Firstly, it is measured not in absolute terms against a certain date, like GHG emissions, but as a reduction in energy consumption of 20 percent below the *expected* energy consumption trend to 2020 and is, as such, a softer target (DG Climate 2014c; see also Buchan 2012: 2). Secondly, although GHG emissions and renewable energy targets were enshrined in legislation as part of the 2009 climate and energy package a specific energy efficiency strategy was conspicuous in its absence. In 2011 DG Energy did finally announce an Energy Efficiency Plan (DG Energy 2011b), and an Energy Efficiency Directive followed which entered into force in December 2012 (DG Energy 2014a). This Directive was implemented partly because EU Member States were not collectively on track to meet the aggregate EU energy efficiency target (EEA 2013: 124). The Directive finally set a legal definition and quantification of the EU energy efficiency target, five years after the unilateral target was set in 2007, as well as an obligation for members states to set only *indicative* rather than binding national energy efficiency targets (EEA 2013: 125; see also DG Energy 2014a). With such delays in developing efficiency targets is perhaps not surprising, therefore, that energy efficiency measured in terms of consumption of energy has tended to rise and fall in line with economic growth and decline in the European Union (EEA 2013: 124; see also Eurostat 2012; European Commission 2011b), without any significant break in the correlation.

As seen above many climate campaigners and policymakers argue that politics gets in the way of meeting climate benchmarks at the national, or in EU terms member state, level as countries pursue growth over other governance goals. It is observed, for example, that certain countries have shied away from meeting targets or have or diluted measures (Compston and Bailey 2010). As it is argued here that climate mitigation targets and other governance vehicles have been specifically constructed with a mind to allowing for economic growth it is hardly surprising that countries pursue such strategies.

2.2.2 Climate as 'separate' from environment

The second idea that has qualified how benchmarks are set is that climate can be considered a separate governance area. For example, EU climate targets and benchmarks are largely managed by DG Climate, created in 2010 when climate functions were separated out from DG Environment, and Kyoto targets are managed within the UNFCC. What becomes interesting working from this definition is how climate benchmarks operate in relation to other areas - especially given intentions to mainstream climate policy back into other policy areas (DG Climate 2014f). The decision to separate climate from environment has meant that, in practice, benchmarks can be set that narrow the measure of success down considerably. The separation

of climate from environment also allows for the reformist position to become embedded in climate benchmarks thereby paying less heed to other more radical interpretations of what the problem might be and related solutions that recommend less economic growth and consumption (see Bernstein 2001; Richardson 2014; Wanner 2014).

Issues surrounding levels of abstraction and questions around whether standardised solutions produce new problems for those countries that then face the job of complying have been raised in IO literatures elsewhere (Broome and Seabrooke 2012: 7; Burnell 2012: 814). Indeed the narrowing environmental debate to climate frameworks has had certain outcomes already. Using GHG emissions as benchmarks CDM projects that have detrimental impacts on rivers and other parts of the natural landscape in the localities where they have been cited can still be considered a success (Mathur et al 2014: 49; see also Newell and Bumpus 2012). As success is measured in terms of projected GHG emissions negative effects are simply not 'seen' (Newell and Bumpus 2012). For many, however, the most important side-effect of narrowly set climate benchmarks has been that nuclear power can, under such standards, be considered a 'clean' source of energy. Clearly, from an environmental perspective, nuclear energy is potentially the most devastating form of electricity production available currently but it is also economically highly expensive (Froggatt et al 2013).

Although (negative) interactions between climate benchmarks for environmental outcomes are reasonably common within the literature there has been less critical attention paid to the ways in which climate benchmarks are then expected to interact with energy policy. EU climate documents frame energy as a problem, in that in its current format it constitutes the greatest source of GHG emissions, but also claim that the right energy targets and policies offer a route to meeting climate benchmarks (DG Climate 2014e). As we can see from what EU climate benchmarks measure clean and efficient energy are seen as methods of mitigating for climate change. There is also an assumption that meeting climate targets will drive change to energy policy as well as energy systems and usage (DG Climate 2014c; European Commission 2011a). Here yet another EU Directorate, in addition to DG Climate and Environment, becomes involved as renewable energy and efficiency benchmarks and policy are managed partly by DG Energy.

What this paper argues, however, is that what is not 'seen' here is the protracted and complex politics of driving energy policy towards achieving climate benchmarks. Even this 'reformist' EU framework implies profound changes in energy governance, usage and systems, albeit perhaps not as profound as a radical agenda. There are two aspects of this that are highlighted here. The first is that EU benchmarks, although they make allowances for growth, tend not to see the *scale* of change required either socially, politically or even in energy systems. There are multiple

energy systems in place that have a bearing on whether each target is met. This is because in order to perform even one relevant energy function, the provision of electricity, each country has generators (that generate from a range of different sources), transmission and distribution companies as well as supply companies. There are a host of secondary institutions that support these systems such as wholesale trading markets, regulatory agencies and measurement and metering functions. To introduce more renewable electricity this implies billions of investment just in new transmission systems let alone other parts of the electricity system. This is because wind, solar or wave energy is variable according to weather patterns, and is sometimes produced in new areas, for example locally or offshore.

The second aspect of what is not overtly 'seen' by benchmarks is the highly complex and messy politics of energy within the EU, between the EU and member states but also within member states that need to be navigated in order to meet benchmarks. That significant tensions exist between the EU and member states on energy policy has been identified and documented elsewhere (Buchan 2013; Kuzemko 2014a). Although the EU has long worked to establish a unified energy policy there remain some significant loopholes that countries can use to avoid compliance. Energy was included in the Lisbon Treaty but Article 194 also gives countries the sovereign right to choose, amongst other things, their energy mix (Kuzemko 2014a). This makes meeting, for example, national renewable targets relative to not 'prejudicing' Member State's preferences for an energy mix which reflects their specific national circumstances (Buchan 2013).

What is meant by this and how it plays out in practice is covered in more detail in section three but it is worth noting at this stage that both for the EU and for each member state climate targets pertaining to energy in practice relate to other energy objectives (European Commission 2011a). These other objectives include the need to maintain energy security, to establish competitive markets and sometimes also to address serious energy poverty issues.[5] In practice, therefore, although the EU and member states do seek to meet climate benchmarks there are other important but differential hierarchies of what is considered politically important, plausible and possible. Although assumptions are made about energy efficiency and renewable energy being solutions to both climate change and energy security problems but these mask various complex interactions between energy policy objectives (Froggatt et al 2013). What then also becomes important is the wider context of energy policy and analysis of how governance areas interact with one another within processes of compliance with benchmarks.

[5] The EU's formal energy objectives are: competition, energy security and climate mitigation.

3. Member state compliance, politics and interactions

If profound change is needed to comply with EU benchmarks then it is, importantly, also needed to maintain a trajectory of lowering emissions beyond the 2020 time period. There are, however, growing claims that transnational climate governance as currently framed is not working, not least in that it looks unlikely that global warming will be limited to 2˚C (Giddens 2009: 189; Bailey and Compston 2010; Garner 2011; Sanwal 2014). Furthermore narrow agreement on new UNFCC targets beyond 2012 and limited success in attracting other large emitters, developed or developing countries, mean that Kyoto is being widely dismissed (Giddens 2009: 189; Bailey and Compston 2010; Sanwal 2014). Having so long claimed leadership both in international climate negotiations and in acting to mitigate climate change it is reasonably significant whether the EU meets its targets – significant at least for climate governance as currently constructed. This is not least because EU and member state 2020 targets currently make up a large quantity of the Kyoto binding targets that remain in place.

Within this context, and given the emphasis this paper has placed on the fluidity built into climate benchmarking processes, compliance at member state level takes on particular significance. For example, measured compliance with EU GHG emissions reduction targets show that although the aggregate EU emissions reduction target for 2020 is likely to be met that 13 member states may not meet their targets on emissions (DG Climate 2014e; EEA 2013). The aggregate EU and individual member state compliance picture on meeting renewable energy targets is even more mixed, and is yet worse in energy efficiency (EEA 2013: 124). The importance of the national level has been emphasised elsewhere because of the claim that international targets alone have little effect on emissions until policies are introduced at the national level (Carter 2010: 57; Compston and Bailey 2013: 3). Albeit it can be claimed that climate targets and benchmarks do at least set a new direction. Although there are EU frameworks that have set pathways until 2030 and 2050 the negotiations to agree what should be legislated beyond 2020 are still ongoing. Member states, often as part of negotiating blocks, have much to say about what should be measured going forward and what not. It is claimed here that we can learn about further arguments for change to emergent climate norms by looking at the varied politics of complying at national levels.

3.1 German and UK compliance

Germany and the UK are, like the EU, often held up as models for other countries to follow with regard to climate governance and they both score highly, in similar positions, on EU climate benchmarking tables. It will be argued here, however, that they are taking very different paths towards compliance and, indeed, have some rather different plans for the future of EU benchmarking. Germany can be described as being firmly reformist but with better Green

credentials whilst the UK, in sum, can be described as reformist but with much stronger status quo drivers for change.

This sub-section will pose some questions about what behaviours EU climate benchmarks drive in practice related to what is measured and rewarded and reveal what is not seen by benchmarks. This includes some further disaggregation in order to gain insights into different levels of compliance as well as national contexts such as the social, economic and political processes involved in attempting to comply with climate benchmarks (see also Bailey and Compston 2010: 1097; Garner 2011: 5; Burnell 2012: 815 and 821). Research on climate and energy policy from sociological institutionalist and models of capitalism approaches have highlighted significant differences in how countries respond to climate targets and to the goal of transitioning the energy system towards a low carbon future. This is because just as emergent norms have been qualified by assumptions at the international and EU levels so too have domestic politico-economic institutions allowed for different interpretations of the problem and how it should be solved (Lehtonen and Kern 2009; Mikler and Harrison 2011; see also Garner 2011: 4).

3.1.1 Some politics of German compliance - the 'Green' reformer

Information that can be gleaned from EU climate benchmarks tells us that Germany, on the latest measurable data, is making good progress towards meeting all EU targets – especially in terms of renewable energy (EEA 2013: various). It has for some time been qualified as one of the best EU countries in compliance terms – although it has slipped a bit recently on emissions benchmarks for reasons to be explained below (EEA 2013: 111). What is not seen by benchmarks is the amount of work, in terms of policies and institution building, that has already gone into meeting these targets. Germany, unlike most other countries in the world, is arguably already in 'phase II' of its energy transition – phase encompassing the 'Energy Concept' and Renewable Energy Act of 2000 and phase II being the 'Energiewende' (Buchan 2012: 3; Fuchs et al 2013: 19). As such it has in place a whole range of nationally set climate and clean energy targets, action plans, command and control policies (such as the Feed-in-Tariff), as well as a long-term time commitment to climate change mitigation. The 'Energiewende' is designed to transform the Germany energy system by 2050: it contains a GHG emissions reduction target of 80 to 95%, a reduction in primary energy use of 50% (both measured against 2008), and a renewable energy target of 60% of final consumption (Agora 2013: 1).

Compliance with EU targets has on a relative basis been successful in Germany partly because political parties as well as large sections of the German electorate have long supported climate change mitigation, energy system transition as well as other environmental issues (Giddens

2009: 76). Comparative analyses of German climate and energy policy suggest that as a 'co-ordinated market economy' Germany has already had in place the kinds of institutions, i.e. goal oriented and co-operative, that allow for and support this kind of long-run but difficult change (Crepaz 1995; Mikler and Harrison 2011; Lockwood et al 2013). Not only have they invested consistently and heavily in research and development of new systems they have also had better co-ordinated processes for negotiation and re-negotiation but also specific organisations in place. These include the KfW, a well-capitalised bank that lends to sustainability projects at very low rates and then re-invests proceeds back into more sustainability projects. Furthermore Germany appears to have a more deeply embedded municipal movement that has supported the great many local energy projects that have developed across Germany, albeit more specific to some Länder than others, over the past decade or so. Some argue that the costs of energy transition are more fairly distributed and those that are impacted are better supported by the Germany welfare system (Lockwood 2014).

What benchmarks also do not see is the very difficult political decisions that lie beneath even this relatively, so far, successful compliance picture. This is where we pick up again on some of the specific qualifications to climate benchmarks outlined above. The first decision pertains more specifically to the inter-relationship between climate and energy policy – but in a way that is counter-intuitive to the assumptions built into climate benchmarking practices where climate targets and standards are the drivers for cleaner energy policy and systems. Historically energy efficiency improvements, in terms both of greater energy intensity and of falling consumption, have been a means of responding to energy security fears (Kuzemko 2014b). It has been observed elsewhere that much of what has been achieved in Germany, and other countries like Sweden, in terms of efficiency has been related to the fact that they have been heavy fossil fuel importers. The argument runs that it was in response to crises such as the 1970s oil shocks that these countries have implemented efficiency measures to reduce dependence and thereby increase supply security (Giddens 2009).

The second, and currently most difficult decision for Germany discussed here, also relates to the importance of understanding inter-relationships between environment, energy and climate. Since the early 2000s it had broadly been agreed that nuclear power, despite environmental objections, could act as a short-term, low carbon bridge to a future where energy consumption would be lower and renewables the primary source (Buchan 2012: 3; Fuchs et al 2013: 19). However, in 2011, it was decided (again) that nuclear would be phased out by 2022 – a controversial as well as momentous decision that arguably reflects a more environmental standpoint on energy production.[6] Nuclear power in 2011 still accounted for 17.7% of

[6] As does the decision to limit bioenegy to less than 10% of power generation in the long term (Agora 2013: 5).

Germany's electricity supply and this therefore inferred some profound short and medium term changes to energy policy and systems – not least in that its electricity options have narrowed. In the short term to accommodate from nuclear power shortfalls Germany is already producing more electricity from coal and for this reason is already falling foul of climate benchmarks in that coal implies greater emissions (EEA 2013). By extension this also places the need to develop renewable energy quickly absolutely central within German energy policy and infers economic and political costs – the ramifications of which are currently very high profile within Germany.

Despite Germany's position as one of the most progressive in terms of action to mitigate for climate change there has always been deep seated opposition. The 'Big 4' gas and electricity companies and some heavy industry companies in Germany have mounted sustained attacks on energy policy decisions (Fuchs 2013: 21). Those that oppose the Energiewende can and do use the costs associated with rapid energy transition to argue against changes (refs). For example, although open to debate, opponents place the blame for high energy prices in Germany on the cost of support mechanisms for renewables, the Feed-in-Tarrifs (FiTs), which are passed on to customers (Fuchs et al 2013: 19). One report claims that Germany has lost €15bn annually in lost trade due to premium energy prices paid by industry (Vasagar 2014). In terms of heavy industry in particular, though less so in respect of the Big 4, many concessions have been made (Giddens 2009: 195). The economic costs of transition, as well as other electricity system costs are not passed on to car, chemicals and steel industries in the same way as they are to other, especially domestic, electricity consumers (Buchan 2013a: 4). Energy transition has not been prioritised over heavy industry on the grounds of economic growth and international competitiveness arguments – as allowed within benchmarking practices.

What this shows is that even pursuing a reformist climate policy and energy transition is, in practice, highly political and deeply significant for other governance areas. The future of the Energiewende at the moment appears viable, but opposition is mounting as economic costs as currently distributed tend to impact upon domestic over industrial users. Although within an EU context, therefore, Germany appears a committed reformer with better environmental credentials much will hang on the ability to balance nuclear phase out with renewable development. Partly for these reasons Germany is a strong supporter of extending binding renewable energy targets at the EU integrated and member country level to 2030 and 2050 (see Buchan and Keay 2014). The EU, for its part, is critical of Germany's stance on nuclear and the degree to which Germany subsidises new forms of energy production (Buchan 2013).

3.1.2 Some politics of UK compliance - reluctant reformer meets status quo

The UK has been assigned a position on EU climate benchmarks similar to Germany and is also often held up as a leader in acting to mitigate for climate change (EEA 2013; IEA 2013). On a comparative basis, however, EU climate benchmarks arguably see even less of the politics of UK compliance or of the internal contestations of the EU reformist position. For example, although the UK has historically performed well against emissions targets achievements are based on the large-scale switch from coal to gas that took place in the 1990s, and on economic decline since 2008 (Helm 2003). In fact estimated 2012 figures show UK emissions rising due to a switch back to coal driven by the relatively low coal to gas price (EEA 2013b: 33). In addition not only does the UK, at 15%, have a lower absolute 2020 renewable energy target than Germany it is also, at 3.8% in 2011, a long way off reaching it (EEA 2013a: 115). In 2007, when the UK first committed to the 2020 agreement, renewables were 3% of energy.

What is interesting is just how much governance change has taken place behind these increasingly less impressive compliance performances. The Labour government adopted a legally binding emissions reduction target of 80% by 2050 measured against 1990 levels as part of the Climate Change Act. Partly in order to meet these objectives they have set up new institutions, such as the Department for Energy and Climate Change (DECC) and the Green Bank, developed a plethora of new white papers and strategies and have also passed numerous bills and acts of parliament (Kuzemko 2013). Broadly speaking, however, the UK is still in phase I of a weak reformist programme on climate mitigation. A return to comparative climate and energy policy literatures confirms that the UK has not only achieved less than Germany in terms of renewable energy but also in terms of cohesive climate policymaking and driving actual changes in the energy system (Mitchell 2008; Lockwood et al 2013; Lockwood 2014). This suggests that policy change and system change do not necessarily go hand in hand.

One prominent explanation given has been that the UK has placed a comparatively greater regulatory and policy emphasis on liberalising and privatising markets, completed only in the early 2000s, and on the role of markets in delivering transition (Mitchell 2008; Scrase et al 2009). A focus on markets as drivers and deliverers of energy transition has resulted in part in less governance capacity in climate and energy (see also Matthews 2012). In the realm of energy policy in the 1990s, as responsibilities were passed to private enterprise, the UK had been closing energy departments down rather than creating new governance capacity (Kuzemko 2013). For some the UK has fostered an oligopoly of private gas and electricity companies, which are reluctant to change and which have a high degree of influence over policy and regulation, due in part to how markets have been structured and regulated (Lockwood et al 2013). One recent example of incumbent energy company influence has been

the decision of the UK government to pull back on the energy efficiency obligations that had been placed on energy companies as a response to popular sensitivity to rising prices (Carrington 2013). This was a consummate piece of deflection given that, at the time, many market and political commentators were pointing the finger at energy companies and/or wholesale prices as culpable for the price increases not climate policies. The fact that the UK government gave way so easily on efficiency policy may also reflect pre-occupations with economic growth as well as the lack of binding efficiency targets at either national or EU level.

There are, however, other explanations of why UK responses to new climate targets have been qualified in the ways that they have. These bring to the fore the importance of the type of energy system that the UK has had, to the presence of the North Sea fossil fuel assets and to the scale of change required to that system (see also Lockwood et al 2013). For a period, mainly in the 1990s, the UK was not only able to cover its domestic needs for oil and gas but was also able to export fossil fuels with clear implications for GDP growth. Unlike Germany, which remained an importer through this period and highly aware of the impact of imports, the North Sea temporarily masked exposure to security of supply issues. It wasn't until the mid 2000s when becoming a fossil fuel importer again coincided with other international energy events that the UK became highly aware of such concerns and made energy security, alongside climate change, a priority energy policy objective (Kuzemko 2013). The resulting political emphasis on energy security, on 'home-grown' energy as well as on low carbon transition has been heavily utilised by the nuclear industry to successfully push for government support for new nuclear. This again shows the importance of interactions between governance areas in practice as well as energy security as a driver for energy policy choices and change. EU benchmarks, given the focus on emissions over other environmental metrics, not only allow for nuclear but arguably also encourage its use.

It is also worth noting that contrary to observations about the UK's commitment to markets the Conservative-liberal Government have agreed to heavy tax breaks and to future prices, at double the current market rate, for nuclear electricity (Barker 2014). EU climate benchmarks also do not see the subsidies and tax breaks of approximately £12bn annually that go to supporting the domestic fossil fuel industry (Environmental Audit Committee 2013).[7] Or the recent decision to design the most generous taxation system on offer for shale gas. These are all directly framed as being necessary in order to secure economic growth, or more precisely recovery (DECC 2014), again allowable under current constructions of EU benchmarks and standards. Albeit the European Commission has had much to say about UK nuclear subsidies

[7] The UK is, however, uncertain in reality about how much it spends on subsidising energy including nuclear, fossil fuels and renewables – or even how this should be measured. The investigation into subsidies is still ongoing – including what should be classified a subsidy (Environmental Audit Committee 2014).

(Sussex Energy Group 2014). It is assumed that heavy investment in the UK's entire energy infrastructure will not only be needed to keep pace with recovery, without necessarily prioritising renewable investment over others, but will also promote the political imperative of growth. As such, decisions affecting compliance with climate targets are not just about an over-reliance reliance on markets but also about inter-actions between energy policy objectives of emissions reduction, supply security and that of economic growth.

In terms of energy systems, and technical choices which have to be made, the UK's is far from a coherent transition agenda – in Germany many choices have now been made about technology pathways in that the long-run supply choice is renewable energy. This is important as it then allows other decisions to be made about associated system, transmission and distribution changes that will be needed. The UK has not decided on energy sources and does not have national renewable energy targets (beyond EU 2020). It is allowing a mix of steady-state gas and nuclear electricity supply with variable renewable supply – variable and steady-state supply each requiring quite different transmission and other system changes.

Taken as a whole, therefore, the UK could be described as more status quo than reformist at the moment. This is reflected in its recent attempts to convince the European Commission that no binding renewable targets should be placed on member states as part of the 2030 framework (Harvey 2014).

4. Conclusions

This analysis of EU climate benchmarking practices has attempted to explore how benchmarking is formulated within the EU rather than taking it as given (see Broome and Seabrooke 2012: 8). Further following Broome and Seabrooke 2012 it has suggested that there may be both similarities and differences between how benchmarks are formulated and interpreted in different areas of governance. What this paper has found is that although climate benchmarking practices have been qualified in certain ways by Washington Consensus ideas and by the notion of setting universal standards that will drive policy change and/or correct policy choices there are some other important differences. Firstly, setting binding climate change targets and standards is something new and different and, although qualified, can be considered as an emergent international norm – albeit with a high amount of fluidity and relatively less standards built in. Secondly, there are other important qualifications about economic growth and about taking climate governance as a separate governance area that have been significant in methods used and in compliance terms.

This analysis started as being about *climate* benchmarking but closer examination of the practices of setting and compliance with benchmarks shows that in practice climate, energy and environmental policy interact in different ways than assumed. In addition what appears to be as important for climate mitigation, understood as energy transition, is how objectives within one area of policy, energy, interact. Benchmarks, due to the level of abstraction, don't see these other drivers of change and continue to assume that climate targets drive clean energy transition. Specifically argued in case studies here is that energy security drives energy policy choices as much as climate targets rather than the other way around. By separating climate from environmental governance this has allowed for a revival of low carbon nuclear power in Europe which in turn, partly by providing greater technical options, works in practice against meeting renewable energy targets. Making allowances for economic growth may well help to gain agreement at the international level but works against the pursuit of energy efficiency at the national level.

By considering the political, economic and technical complexities and contingencies of energy transition in Germany and the UK this paper has also shed some light on the scale of the problem to hand and of the importance of energy *system* change. Given the recent turn in climate governance towards emphasising success at the national level the inability of set technocratic standards to see these different domestic capabilities and subjectivities becomes, arguably, a central sticking point. International benchmarks don't see this – but arguably don't want to. The risk here is that countries kick-back, targets are not met and future targets reduced and so far this appears to be what is happening within EU target negotiations for 2030 (Harvey 2014). Although there is broad agreement to set binding GHG emissions reduction targets there is heavy disagreement over renewable energy's place within climate mitigation - but without any other methods of reducing emissions offered in their place. The European Commission, in line with the position of the UK led block of countries, is against binding national renewable targets whilst the European Parliament, in line with German interests, has voted in favour of national targets to be set at 30%.

As such this paper to an extent upholds the observation that abstract interpretive frameworks crowd out local knowledge (Woods 2006: 54-5), but ultimately to the detriment in this case of the abstract frameworks and motivations behind them. For those from a radical environmental standpoint missed targets and disagreement over the near-term future might be all too predictable. However that still leaves international climate organisations with the desperate need to meet the 2˚C limit to global warming and to further institutionalise emergent climate norms. This paper has emphasised the centrality of national climate and energy policies to international climate governance success. Perhaps further knowledge building about the complex detail of how different nations interpret and comply with climate benchmarks might aid

better setting of future benchmarks and ability to negotiate with powerful nations. Perhaps also a rethink of some of the assumptions about growth upon which current targets rest would reveal some of the internal contradictions. This should, overall, be a learning process instead of assuming that answers are known and can be technically measured especially given the unprecedented nature of governing for climate mitigation and complex systems transition.

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