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EU Climate Change Policy Governance: How to achieve stability and predictability?

Project Report

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7 December, 2016



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The study, within the framework of which this report has been prepared, has received the financial support of a number of CERRE members. As provided for in the association's by-laws, the study and the report have, however, been developed and completed in full academic independence. The views expressed in this CERRE report are those of the author(s). They do not necessarily correspond to those of CERRE, to any sponsor or to any (other) member of CERRE.



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Executive summary

Addressing climate change requires a stable and predictable investment signal for low carbon investment. The predictability and stability of climate change policies and regulatory framework is a necessary, if not sufficient, condition to create such a price signal. It is therefore the overarching research objective of this paper to define and discover a governance system for EU climate change policy that ensures predictability and stability of the policy and regulatory framework.

In the wake of the entry into force of the Paris Agreement, the EU is continuing at a steady pace to propose, revise, and implement a set of policies and targets that were agreed two years ago (October 2014) – the 2030 Framework for climate and energy policies. At the same time, the Energy Union initiative remains at the forefront of the Juncker Commission's efforts in coordinating the vast body of policies and regulations necessary to address the climate challenge, without foregoing the traditional objectives of energy policy.

Governance is a concept that has been defined as many times as it has been applied in the discourse on EU climate policy and regulation. By building on the principles and dimensions that international organisation such as the OECD and World Bank use to define governance, this paper articulates how a stable and predictable governance framework requires a close, continued review of the many interactions that are inevitable in a policy field that affects the vast majority of the economy.

It is inevitable that an EU climate change policy framework will be impacted by external events and interacts with other policies. Stability and resilience are not to be interpreted as 'no changes'. Rather, it means that changes do not emerge in a mostly ad-hoc and capricious manner, but are the result of forces and interactions that, to the extent possible, were already taken into account ex-ante in the governance framework. At the same time, stability should not be equated with rigidity: 'unknown unknowns' will always happen.

Among the shocks and interactions that EU climate policy should be equipped to deal with are those of an economic, technological, scientific, or political nature. Interactions will also need to be managed at, and between, different levels, starting at the global level and moving down to the Member State level, and finally to that of individual policy instruments. Within each level, there may be implications for the design, the policy parameters, and the management of different policies and frameworks.

We focus our analysis on the two primary policy frameworks of EU climate policy: EU Emission Trading Scheme (EU ETS) and the Effort Sharing framework. In reviewing the shocks and interactions relevant to these policies, many additional policies, regulations, and institutions are analysed. This includes the UNFCCC and the Paris Agreement at the global level, but also other EU and Member State policies that may have an impact on the functioning of EU ETS and Effort Sharing. Among other things, this includes measures that may affect demand for allowances in

the ETS, or circumstances that require a review of the emission reduction trajectories under Effort Sharing.

We conclude by discussing a system of regular reviews and revisions of key pre-determined policies and policy parameters, within a decision-making process that utilises the Lisbon Treaty provisions for delegated policymaking. This will require extensive debate and consensus on the demarcation of which political choices are eligible for delegated decision-making. However, a degree of expeditiousness going beyond that of co-decision is arguably required if EU climate policy governance and execution is to be credible in the post-Paris environment.

The recommendations focus on two areas. The first area is the relations between EU climate change policy and what happens at the UNFCCC global level. The recommendation is to align the review cycle of the Paris Agreement with a review of selected policies and parameters in the EU ETS and ESR.

A second recommendation addresses EU ETS governance, and urges that a review of key parameters of the EU ETS should be mandated, as part of the global stocktakes under the Paris Agreement. Additionally, such a review could already be started after the 'informal dialogue in 2018'. This should already be included in the on-going review of EU ETS Phase 4. A review may be triggered by an independent Advisory Group, which could also play a role in making recommendations, but with no power to impose actions.

In addition to regular reviews, such reviews could also be mandated to take place if triggered by certain events or developments. This would not be an ad-hoc review, but rather a review contingent on given, pre-defined occurrences. For instance, this could arise if there is a significant economic shock, or an extended period of strong economic fluctuations, which may make it necessary to revisit some of the long-term pathways and assumptions that underpin EU climate policies. Every review should also take significant technological developments into account, if these could affect the functioning of EU climate policy.

The annual reports on the functioning of the European carbon market could be expanded to include the following issues: market functioning; carbon leakage mitigation measures; and environmental effectiveness and the role the ETS price signal plays in this (a proxy for whether the EU ETS is a central instrument or not).

It is also important to emphasize that, as in other areas where there is an element of judgement in the process, the review also maintains a human dimension and a qualitative element. In this frame, having clear rules is important. However, they also need to be seen as guidelines, allowing for human judgement to play a role, within those guidelines.

This paper identifies and describes a very complex set of interactions that impact EU climate change policy formation and governance. The breadth of what is impacted by EU climate change policy, and the multi-layered complexity of the interactions, makes this policy area significantly more challenging than other environmental issues. Hopefully, this paper will stimulate a broader discussion on the issues surrounding governance, as we are in the process of developing



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changes to the major tools of EU climate change policy, the EU ETS and the new Effort Sharing Regulation (ESR).

1. Objectives: why discuss climate change governance?

Addressing climate change requires a stable and predictable investment signal for low carbon investment. The predictability and stability of climate change policies and regulatory framework is a necessary, if not sufficient condition, to create such a price signal. It is therefore the overarching research objective of this paper to define and discover a governance system for EU climate change policy that ensures Predictability and Stability of the policy and regulatory framework.

Climate change mitigation represents a unique long-term policy challenge, spanning myriad economic sectors, generations, and policies. With the entry into force of the Paris Agreement, ambitious climate policies and the coordination of its component policies will remain a key priority for governments around the world. In the European Union, this coordination effort is made yet more complex in the context of the multi-level governance system within which the EU institutions and its (for now) 28 Member States operate.

The global character of the climate problem as well as the required transitions in certain economic sectors such as transport and building performance, means that the highest (United Nations) and lowest (regional and municipal) levels of governance also become part of this coordination puzzle.

Last, but not least, the global climate change regime has undergone significant changes and is expected to continue to change, especially in terms of what will be the response at both the global and national level. This will require a flexible EU climate change regime that will be able to adapt to these changes.

For the EU regime to be flexible, and yet predictable, its governance will be critical. It is about managing the transition and avoiding shocks that will make the transition unsustainable.

The impetus for this paper lies in the desire to clarify and expand on the idea of governance in the context EU climate policy. While governance is an oft-used term, we feel that governance is currently not well understood.

In mentioning the concept of “governance” in the current time and context, many will be inclined to think of, or refer to the Energy Union project, in which the EU has been engaged since 2014. However, we feel that EU climate policy governance encompasses more than what is generally covered by the Energy Union governance discussions, with its focus on reporting and indicators.

As such, we will try to move beyond governance, as it is currently understood in this Energy Union context, and towards a discussion integrating the many interactions and perturbations that may occur in the climate policy landscape and the sectors that it affects.



The recently released winter package from the European Commission includes a proposal on Governance. This report, however, aims to feed into the essential debates on how to manage the many different components of EU climate policy, the Energy Union, and the interactions they face.

It also needs to be well understood that this paper is not about the efficacy and effectiveness of EU climate change policies, but about how they are governed – who makes the rules, how the rules are made, and changed, and what may trigger such changes.

2. Background

2.1 Governance

It is important to come back to what we understand by governance, as well as what governance should not be about. Governance can be about when, who and how policies are decided, but not about the effectiveness of such policies. It is about ensuring that when managing the interaction certain interactions are measured, and considered when deciding on a policy mix, but not about what needs to change per policy parameter as such (i.e. not the parameters of the Market Stability reserve in the EU ETS, but how those parameters are decided, and changed). Likewise, it is about transparency about how given international climate objectives will be translated into domestic (EU) targets and policies, but not about whether, for example, the current EU climate policy mix is in line with the Paris Agreement under the UNFCCC.

The next section discusses key concepts and definitions relevant to this paper, as well as the roles various institutions play in governing climate policy, and the legal bases for their competences.

In this section, we will first discuss the core concept of governance, as used in a general context, not just how it is seen in a climate policy context. In the simplest way, governance is about the rule of the rulers. More specifically, at the macro level, according to the World Bank, it is about the process by which authority is conferred on rulers, by which they make the rules, and by which those rules are enforced and modified.

“Governance consists of the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them.”¹

The collective problem relevant to this paper is mitigating climate change, as defined by the objectives of the UNFCCC, and in the Paris Agreement. The ‘social norms and institutions’ relate to the body of policies and measures that has been introduced to tackle this challenge. In the case of the EU, the response is found primarily through the measures associated with the 2030 Framework for climate and energy policies, as well as the Energy Union.

In trying to describe or discuss ‘governance’, the issue of ‘good governance’ inevitably arises. Good governance may be seen as a collective term for a number of principles and indicators that enable a governance system to function as expected. Whilst these principles and indicators may differ across the spectrum of policies, some are recurring and relevant in most contexts.

¹ <http://info.worldbank.org/governance/wgi/#home>

Key institutions in the field of global governance, such as the World Bank and the OECD, have articulated many of these principles. As the goal of this paper is to find a system of governance that would be stable and predictable, it is pertinent to discover whether these concepts are explicitly recognized as ‘good governance’ principles, or alternatively, whether other recognized principles may serve as conduits for stability and predictability in EU climate policy governance. Many good governance indicators exist for governance in general, though they are not necessarily targeted, or even applicable to climate policy governance.

2.1.1 OECD: levels of governance

A first useful distinction when defining governance is provided by the OECD, which proposes to distinguish between three different levels of governance: macro; meso; and micro. The macro level of governance concerns governments as a whole, how these governments are constituted, how they take decisions.

In this paper, given the global characteristics of climate policy, as well as the focus on the EU (with its supranational institutions, and not a ‘regular’ government), this macro level includes not only the EU institutions such as the Council of Ministers, European Parliament, European Commission, and European Council, but also the global institutions of the UNFCCC. Furthermore, the macro level may also be seen as concerning the interactions between the EU, UNFCCC, and other bodies of global governance such as the WTO, IMF or G7/20.

The OECD’s meso level concerns the policy level and how they are governed. For the purpose of this paper this includes the main policies in the 2030 Framework for climate and energy such as the EU ETS, Effort Sharing in non-ETS sectors, Renewable Energy and Energy Efficiency policies, and sectoral EU policies related to transport, agriculture or LULUCF. Again, interactions are important, which at this meso level pertains to interactions and overlap between policies.

The final level of governance discerned by the OECD is the micro or agency level, which concerns the roles of the specific actors and institutions at lower levels of governance. This may be seen as including national and European regulators, how EU Member States implement EU policies or the interactions of national climate targets and policies (e.g. additional carbon pricing mechanisms, subsidies, or national policies in transport and building sectors) with EU policies.

2.1.2 World Bank: Worldwide governance Indicators

The World Bank has established an extensive set of ‘Worldwide Governance Indicators’ used to assess economies as a whole. While this is a different unit of analysis compared to those relevant for this paper, the main categories of indicators give a good overview of what to look for in ‘good governance’.

Some of these categories are clearly less applicable in the context of EU climate policy governance than others. In Annex 1, we briefly discuss each category and the extent to which it is relevant to the context of this paper.

- Voice and accountability. This dimension is related to who has input in relevant decision-making procedures, and to whom various actors and institutions are accountable.
- Political stability and absence of violence. This dimension relates to more fundamental aspects of how stable states are, and as such is not directly applicable to climate policy governance.
- Government effectiveness. This dimension refers to the perception of whether governments enact and implement effective policy and regulation, and how credible its commitments are. Given the polycentric character of global climate policy decision-making, this dimension has relevance climate policy governance.
- Regulatory quality. This dimension refers to the ability of governments (or other relevant institutions) to implement sound policies. As this regards the processes and not the outcomes of sound policies per se, this dimension is also relevant for climate policy governance.
- Rule of law & Control of corruption. While there have in the past been some issues in EU climate policy-making related to the rule of law (e.g. the integrity of registers where allowances were stored, or how certain funds were spent) these dimensions are less relevant considering the overall institutional capacity of the EU and its Member States.

2.1.3 European Commission: principles for Good Governance

The European Commission has its own principles for good governance, as described in a 2001 White Paper on European Governance (2001/C287/01). A discussion of these principles is found in Annex 3. Where appropriate, reference will be made to the World Bank governance dimensions, if these dimensions and principles overlap or are complementary.

These principles include:

- Openness (or transparency)
- Participation
- Accountability
- Effectiveness
- Coherence
- Proportionality & subsidiarity

2.2 Governance: how is it currently understood in EU climate policy?

In the EU policy debates, any discussion on the governance framework for climate policy is placed in the context of the Energy Union framework. Initially proposed by European Council President Donald Tusk in 2014 as a push for increased energy security, the Energy Union project by now encompasses climate policy as well, with ‘decarbonisation’ being one of the five pillars, while other pillars (such as Energy Efficiency) also have a clear climate policy component.

The name ‘Energy Union’ precedes the announcement of the 2030 Framework for Climate and Energy Policies by a few months. Thus, as the 2030 Framework was revealed in the EUCO Conclusions of 2014, including all the deadline targets, reference was already made to governance in the context of the Energy Union. Nevertheless, the 2030 Framework is a more concrete set of policy proposals, whereas the Energy Union serves as a broader political frame, even if both are tied to the legal competence of the EU in the climate and energy fields.

2.2.1 Political context: Energy Union

The discretion of the EU to exercise power in these policy areas is described in the EU Treaties (TEU and TFEU), and these Treaty provisions remain unchanged with the ascent of the Energy Union debate. This includes the “polluter must pay” principle (Art. 192(2) and Member States’ discretion in the choice between different energy sources (as described in Articles 192 & 194).

The five pillars of Energy Union

The five pillars of the Energy Union, and how they connect to climate policy governance, are briefly described below. Some are more focused on either energy or climate, but the interactions between the pillars are significant, and this requires close coordination, also regarding connecting these pillars to the decision-making processes of EU climate policy.

Security of supply

A core rationale for traditional energy policy, security of supply concerns may influence the desired energy mix for certain Member States, which will have an impact on the preferences for climate policy design, but also on the functioning of instruments through, for example, affecting ETS supply and demand.

Integrated internal energy market

Electricity market design changes may be necessitated by increased renewable energy. Successful market design could improve the stability of the price signal in these markets, which would be beneficial (if not downright required) for investment in low-carbon technology.

Energy Efficiency

Energy Efficiency policy is one of the ‘classic’ overlapping policies with the EU ETS, and a headline target of the 2030 framework. As such it requires close coordination with EU ETS parameters such as the Linear Reduction Factor (LRF), as it will affect demand in the EU ETS, and with it the cost-efficiency of decarbonisation.

Climate action

The focus of this paper – from a EU climate policy governance perspective it is important that Energy Union allows for close coordination of the interactions between relevant policies, but also to have an appropriate decision making framework to be able to respond to necessary changes.

Research & Innovation (climate)

Beyond interactions with specific policy elements such as the ETS funds (innovation, modernisation), improved R&I should boost investment in low carbon technology which ultimately is required to reach long-term climate policy objectives such as the 80-95% GHG emissions reduction target for 2050.

2.2.2 Governance in the 2030 Framework

October 2014 European Council Conclusions on climate and energy policy

The governance chapter of the 2014 EUCO Conclusions starts by saying that it needs to be “reliable and transparent”, without “unnecessary administrative burden” and that it “should ensure that the EU meets its Energy Policy goals, with the necessary flexibility for Member States and fully respecting their freedom to determine their energy mix”

The Conclusions describe some of the underlying principles and constraints that the Governance system should consider. Most prominently, it reiterates the freedom to determine Member States’ energy mix, while also referring to energy policy specifically, not climate policy. This ‘energy mix’ statement is related to certain provisions in the environment and energy chapter of the Treaties (see Annex 1 for more on EU competence in climate and energy policy).

Other elements discussed by the EUCO in this early Governance section:

- Bring together national climate and energy plans (on RE and EE)
- Monitor key indicators to ensure consumer protection, investor predictability
- Facilitate coordination between MS, and foster regional cooperation

March 2015 European Council Conclusions on Energy Union

After the October 2014 Conclusions, the European Council returned to the topic of the Energy Union in March 2015, in a set of Conclusions that detailed how the Energy Union should be shaped, and what its priorities should be. This included only a few references to Governance, in

a paragraph on reviewing and developing legislation on GHG emissions reductions, and in the sections on Renewable Energy and Energy Efficiency, saying that the Governance system should be reliable and transparent.

November 2015 European Council Conclusions on Energy Union governance

The issue of Energy Union Governance was tackled far more extensively in November 2015, when the European Council dedicated a new set of Conclusions to the topic. Some of the notable statements include:

- The focus of the governance system lies in integrating strategic planning and reporting on the implementation of climate and energy policies [#1.1].
- The governance system will be based on existing “building blocks” in current climate and energy policies, and agreed targets (i.e. 2030 framework headline targets) and ensure collective progress towards these targets and the five Energy Union dimensions [#1.2]
- The “existing building blocks” statement is unsurprising: Energy Union is a political frame that does not change the competence of the EU to act, nor changes the balance between institutions per se.
- “The governance system will be reliable.” Through long-term planning by Member States, covering all five dimensions of the Energy Union equally, it will enhance the stability and predictability of the investment climate.” [#1.5]
- This feeds into the objectives of this paper, which also concerns stability and predictability specifically. The second section of the Conclusions identifies the “essential components” of the Governance system: The most prominent of these components is the “National Energy and Climate Plan (National Plan)”:
- This should outline the state of the national energy system, national climate policy, and the policy framework for achieving progress on the five dimensions of the Energy Union
- Reference is made to the 2050 goals of EU climate policy, and to the importance of consistency with IPCC recommendations – notably, these references were made pre-Paris.
- The Commission and other Member States may offer recommendations on initial National Plans
- National Plans will ensure that the EU as a whole remains on track. Point #2.9 highlights the specific case of the Renewable Energy target, where more action should be undertaken if there is a ‘gap’ based on Member State commitments
- There should be continued dialogue between the Commission and Member States
- Monitoring and evaluation based on key indicators

The fact that EUCO Conclusions are such an essential part of designing the Energy Union governance also means that the EUCO itself, and its modus operandi, forms a crucial part of climate policy governance in the EU: it sets the boundaries within which further choices can be made.

To make the Energy Union Governance more fit for purpose to deliver on climate policy dimensions, it needs to be accompanied by a decision-making framework, as well as close coordination and reviewing of climate and energy policy interactions.

2.3 EU and Member States competence

This section summarises the competence of the EU to act in the relevant fields of climate and energy policy, as well as related areas, such as who represents EU Member States in international bodies and negotiations such as the UNFCCC. An extended overview is found in Annex 1.

Within the context of the EU Treaties, climate change is considered part of environmental policy, and is explicitly referred to as an objective in the environmental chapter of the TFEU. It is also relevant to note that both the areas of environmental and energy policy are considered 'shared competences', meaning that Member States can only exercise their competence to the extent that the EU has not done so already. Energy policy, moreover, is highly relevant to EU climate policy, as climate policy addresses economic sectors operating in the area of energy, or sectors that have significant energy consumption themselves (e.g. industry, transport).

Some of the key characteristics of the environment and energy chapters in the TFEU include the principles that "the polluter shall pay", that it shall follow the 'precautionary principle' and that the legislative procedures may be changed, contingent on the characteristics of the proposed policy (i.e. is it a fiscal measure, or will the measure affect the choice of a Member State to choose its own energy sources).

2.4 Roles: actors & institutions in EU climate policy

The relevant actors and institutions in EU climate policy include:

- European Commission
- Council of the European Union (Council of Ministers)
- European Parliament
- European Council
- Member States
- EU committees (CoR, EESC)
- National Competent Authorities

The Commission is arguably the pivotal institution in EU climate policy, as the initiator of all legislation, and the institution drafting implementing and technical legislation. Additionally, it represents the EU in international negotiations, including those at the UNFCCC. The Council of Ministers and European Parliament as the co-legislators finalize the key legislative acts of climate and energy policy, although they largely do so within the boundaries of the strategic guidance set out by the European Council.



Member State also play an indispensable role at the domestic level, in implementing and drafting policies to the extent that the EU has not done so, while national competent authorities in the Member States play a central role in verification and compliance processes. A more extensive explanation of these roles is found in Annex 1.

3. Methodology

This chapter will discuss the logic of our analysis for Chapter 4 (Interactions and governance), which will then be translated into recommendations.

Based on the discussions above two fundamental governance indicators, stability and predictability, are critical to ensuring that a stable long-term price signal emerges from the EU climate change policy.

It then goes on to discuss what may impact the EU climate change framework, the nature of those impacts, and where the interactions may take place.

3.1 Stability and predictability

Addressing climate change requires a stable and predictable investment signal for low carbon investment. The predictability and stability of the climate change policy and regulatory framework is a necessary, if not sufficient condition, to create such a price signal. It is therefore the overarching research objective of this paper to define and discover a governance system for EU climate change policy that ensures Predictability and Stability of the policy and regulatory framework.

Once climate change frameworks are put in place, if properly designed, they should be able to provide a price signal for decarbonisation. However, the conditions under which the legislative and regulatory framework is put in place invariably changes. This requires that the framework can adapt to these new conditions, and does so in a way and through a process, which stakeholders (including investors) expect and can understand. Ideally, and in a simplified way, they ought to be able to say – “if this happens, I expect that the framework will look at these parameters and change, in broad terms, in that way”.

Stakeholders should expect that the framework would be stable. Stability does not imply rigidity. What it implies is that changes will only occur due to external impulses, which to the extent feasible, ought to be able to be foreseen. The need for change, including conditions external to the framework, should not be the result of ad hoc decisions, which could be seen as capricious, or not based on objective and well-explained rationale. It is not the fact that there is change, or the number of times that change is needed, which renders a policy framework unstable. It is rather the way that change is triggered.

Needless to say, there is always uncertainty: in a complex system the policy and governance system will be required to react to unknown and unforeseen new events.

This brings up another accepted “truism” of governance, which has emerged the previous decade and is becoming unchallengeable: that in the design of regulatory systems, all has to be done according to pre-determined mathematical formulas, otherwise the systems is seen as not



being according to the rule of law. This somehow implies that all scenarios can be foreseen. It is as everything can be captured in rules, and there is no need for human intervention and judgement. We would call this a “democratic deficit”. Examples of using human intervention and judgement include:

Carbon leakage rules: the current system is based on pre-defined quantitative criteria, but room remains for human judgment through qualitative criteria, making the carbon leakage system more adaptive to real world circumstances. Qualitative assessment, however, takes place within predefined boundaries.

(Outside of climate policy) Central banks: many central banks have pre-defined quantitative targets in the form of inflation targets, with price stability being the overarching goal. Beyond that, however, central bank goals may also include contributing to general economic development or performance, and the maintenance of systemic stability. To reach such goals, especially systemic stability, more intervention may be required, either through statements that influence sentiment, or through unconventional monetary policy instruments (such as negative rates, or asset purchases).

Forward guidance may be another example of trying to increase stability and predictability, while being transparent about the types of interventions that are being considered.

Beyond low-carbon investments, more is needed to achieve the transition to a low-carbon economy, and to fulfil the long-term objectives of climate policy. Such a transition also requires behavioural changes and demand-side policies in general. For example, behavioural change may be seen as a key driver of achieving increased energy efficiency, which is both a key policy of the 2030 Framework for climate and energy policies, as well as an objective that may shield against higher energy prices in general.

A good governance system also requires a reasonable degree of transparency, in addition to predictability. This in turn could engender stability in the investment landscape, thereby ensuring a more cost-effective policy framework in the long run.

While the goal of this paper is to discuss how a stable and predictable policy and regulatory framework could be developed, it is inevitable that various policy interventions (I.e. new policies or modifications of existing policies) are in any case inevitable and frequently simply required.

It is not the aim to advocate a rigid framework that stymies political intervention. Rather, an effective governance system would ensure that there is transparency in how, when, and why such interventions may take place. As such, transparency and timing are also key concepts in this paper.

3.2 Impacts on the framework

3.2.1 Nature of impacts

Once established, two types of events may impact a climate change policy framework:

- Policy interactions and overlaps
- Changes/shocks to the external environment

In the case of EU climate change policy, interactions have been well documented and discussed. There are a number of policies that may interact, as illustrated by the interaction between the EU ETS, RE and EE directives. More in depth discussion will follow below.

There are also changes or shocks to the environment in which EU climate change policies functions.

Nature of the shock

This section describes where various shocks may originate from, and how they are relevant to EU climate policy. Such changes or shocks in policies can be of different nature, and may be economic, financial, technological and scientific, or political and regulatory.

It is important to note that some of these changes may stay within the bandwidth that they were designed for, but as was the case with the current deep economic crisis, they may go well beyond that, in which case the machine is operating under conditions for which it was not designed.

Economic & financial

Economic shocks may include sudden changes to economic growth, or changes to expected growth rates in the long run. This may have significant impact in cases where climate policies are designed assuming certain levels of output, or output growth. Examples include the EU ETS, where historical output levels used to determine free allocation quantities are not responsive to current economic circumstances, thereby creating supply-demand imbalances in the system of a whole.

In the non-ETS sectors, too, divergences in economic performance across Member States may affect the development of emissions in sectors such as transport or agriculture. This, in turn, will affect the Effort Sharing framework, including the targets based on relative GDP per capita, or the incentives to use flexibility mechanisms in cases where a surplus develops.

Economic performance may, in turn, have implications for the availability of funding mechanisms, which are particularly crucial in non-ETS sectors; where Member States implement their own programmes and policies to achieve emissions reductions. This also depends on the political willingness for fiscal spending. A similar story holds for Renewable Energy and Energy Efficiency targets, which require Member State implementation policies.

Connected to these Member State policies that implement EU-level targets are the level of interest rates and the cost of capital. This may both affect the overall costs of projects in these sectors, as well as the willingness of private investors to get involved in financing the investments, thereby further impacting overall costs.

This is relevant for climate policy governance in so far as it may affect the willingness of Member States to implement policies that go beyond EU targets (which often act as a floor, a minimum level to be achieved). The governance framework should account for what happens in cases there are overachievements (and to what extent such overachievements (should) be incentivised). Overachievements may have impacts where there are policy interactions, such as between EU ETS and Renewable Energy targets.

Financial

Related to certain economic shocks is the occurrence of shocks in the financial system. While such shocks are inevitable, to a certain extent, a governance framework should be equipped to deal with its consequences. Examples include the EU ETS getting caught up in general market turmoil, which may undermine the efficiency of the system, or the loss of confidence among investors if credit market liquidity dries up, which could also negatively impact the long-term efficiency of climate policy.

As such, whilst governance provisions cannot prevent financial turmoil, some possibility to restore confidence in relevant carbon markets, or low-carbon investments should be present, given the long-term characteristics of the climate change problem.

Technological & Scientific

The types of shocks that may occur in the technological and scientific realm may, in principle, be seen as likely to be positive, rather than negative. Technological breakthroughs can lead to rapid changes in the costs of certain low carbon technologies, which may lead to a rapid acceleration in their uptake.

From the governance perspective it is important that such breakthroughs do not lead to the policy frameworks being out-dated. This might be the case if the policies are implicitly based on gradual emissions reduction pathways, such as is the case for the EU ETS and Effort Sharing policies. Even if there are standard periods for revision of the policies, earlier intervention should arguably always be a possibility if this is deemed necessary considering the long-term objectives of climate policy. However, such intervention should be predictable: it should be noted ex-ante under which conditions early revision of policies would be considered.

In the realm of scientific shocks, reference could also be made to the work of the IPCC. If for whatever reason the scientific consensus shifts towards more (or less) global action being necessary to reach certain UNFCCC objectives, and then the governance should ensure that this would be reflected in the policy and regulatory framework.



Political & Regulatory

Whereas the shocks described above would have repercussions for the political and regulatory dimensions of the governance framework, shocks may also occur within these dimensions themselves. We refer to changes in the preferences of relevant actors in institutions in key political decision making processes, as a result of elections or other political shifts.

An example of a recent political shock is the Brexit vote in the UK. In the aftermath of the referendum, questions were immediately raised about the consequences of this vote for future UK-EU cooperation on climate, with the possible governance implications being whether there should be guidelines established for how Member States could exit the EU with as little as possible perturbation for the EU climate policy as a whole.

Other specific climate policy relevant shocks may include changes in the preferences for the energy mix of a country: does a Member State prefer to hold on to fossil fuel use as long as possible or does it prefer to accelerate renewable energy deployment? An obvious consequence of such shifts may be that a Member State opts for phasing out certain energy sources, such as is happening with coal in some Member States, which will have immediate repercussions for the demand for allowances in the EU ETS.

In non-ETS sectors, local preferences in transport sectors in particular may lead to sudden shifts in policies and emission trajectories. For example, through the banning of certain old cars in town centres, or by explicitly phasing out conventional engines, as some Member States now plan.

Another example may be a shift in attitude towards fiscal spending, or availability of fiscal expenditure as such, to which the same analysis applies as to the availability of funding mechanisms described above.

More fundamentally, political turmoil could upset the achievement of climate goals in both the short and the long run. Much as with financial turmoil, whilst a governance system cannot (and should not) prevent such turmoil from occurring, it should none the less be equipped to deal with it to some extent. In the case of climate policy this could be an argument for delegation in decision-making procedures, so as to make the long-term commitment more credible. This is crucial also in light of the necessary investments that are necessary in the long run, which require a stable and predictable policy and regulation framework to the extent possible.

Delegation is one way of making shirking a more politically expensive option for governments. Yet, more generally, the costs of non-compliance can be seen as a relevant element for consideration in climate policy governance.

Changes to EU/MS competence

It could be envisioned that the competence of the EU or individual Member States to act in the area of climate policy changes, possibly as part of a wider recalibration of powers for EU institutions. This could either be towards more centralisation or towards decentralisation

(‘repatriating competences’). Unless the change in climate competence is carried out with the express purpose of making more effective and/or efficient the EU and its Member States’ response to climate change, such a change can disturb the functioning of EU climate policy.

3.2.2 Level of interaction

EU climate change policy is defined at different levels and will be subject to shocks/changes/stress/perturbations due to different forces and factors briefly outlined above, at different levels of interaction:

- Global level (e.g. EU and UNFFCC)
- EU level (e.g. EU ETS & ESR)
- Member State level (e.g. EU ETS & national policies)
- Policy instrument level (e.g. internal to the EU ETS)

Given the nature of the events that can affect the EU climate change policy framework (discussed above), the intersection with the four levels will result in a very complex set of interactions which require a very clear, yet flexible governance to ensure stability and predictability.

Within these levels, we review how shocks and changes may have an impact on the following two categories:

- Design choices at the different levels of governance
- Interactions at different levels of governance

Where possible we treat these categories separately, but at the Member State and Policy instrument level it is more appropriate to treat design choices and interactions jointly.

4. Interactions and governance

In this section, we analyse what interactions may be discerned at and between different levels of governance (the Global, EU, Member State, and Policy Instrument level). Interactions may manifest themselves through shocks (as described in the previous section), overlaps, or changes to policies or preferences.

4.1 Global level

At the global level, we look at global factors and institutions that are external to the EU. First and foremost, this regards the UNFCCC, but also the IPCC. The UNFCCC represent the primary global body to address climate change. Its latest achievement is the adoption of the Paris Agreement in December 2015. The Paris Agreement establishes a bottom-up structure, where Parties to the UNFCCC are requested to communicate and update their ambition levels through Nationally Determined Contributions (NDC).

These NDCs need to specify a Party's commitments regarding inter alia, mitigation, adaptation, and financing – including how the Party expects to achieve its ambition – but its exact contents are left up to the discretion of the Party. However, a new NDC needs to be submitted every 5 years, and this NDC will need to represent a progression beyond its current commitment.

This so-called 5-year review cycle thus represents a key element of global climate policy governance, of which EU climate policy should take account. This may imply not only managing the coordination between the Paris Agreement review cycle and its own policy processes, but also taking account of other Parties' updated NDCs. Other Parties' NDCs may necessitate changes to EU climate policy as well, as the competitive global landscape will change with shifting carbon constraints worldwide.

The IPCC represents the scientific input to the UNFCCC and its Parties. New developments disseminated through their reports, or a shifting consensus on what needs to be done, also represent a global interaction which EU climate policy governance should be equipped to address.

A specific example of an interaction that will need to be managed is that of linkages between the EU's carbon market, and the future market mechanisms possible under Article 6 of the Paris Agreement. While for the period up to 2030, the EU decided not to accept international credits, this may be subject to change in the future when new commitments are adopted globally, and in the EU. Once a future Article 6 mechanism materialises, the EU will need to make decisions on mutual recognition of credits, possible limits to use of credits for compliance etc.

4.1.1 Design choices in global climate policy

There are certain design choices at different levels of governance that shape the fundamentals of climate policy.

At the global level, following the adoption of the Paris Agreement, this key design element is the bottom-up system where Parties establish, communicate, and update their own commitments and ambition levels at set intervals. Another design element is the choice to primarily express the international ambition of the Paris Agreement as a whole by means of temperature targets. Other fundamental design choices include the legal form, or the choice to focus on mitigation over adaptation.

Examples of shocks that may lead to changes to the international design could be the withdrawal of a major emitter from the Paris Agreement (such as the USA or China), or if the bottom up system of repeated NDC-cycles loses credibility, which might be the case if the system of updated commitments fails to be followed up.

Alternatively, the work of the IPCC is arguably of great significance to all levels of climate policy. Should the work of the IPCC lead to a greater (or lesser) sense of urgency about the long-term climate change challenge, this may trigger debates about a review of the design choices in international climate policy.

4.1.2 Interactions at the global level

At the global level, there may both be interactions between the UNFCCC regime and other systems of global governance; while at the same time the UNFCCC will greatly impact the EU climate policy landscape.

At the World Trade Organization, rules governing international trade can have a significant impact on the effectiveness of climate policies that address traded sectors. In particular industrial sectors under the EU ETS are concerned with their competitive position vis-a-vis producers in other countries that may not face the same carbon constraint. Various policy responses exist to alleviate such concerns of carbon leakage, such as free allocation or border carbon adjustments. In the latter case, levying charges on imports, or granting rebates for exports based on the carbon contents of products could potentially result in challenges under the WTO's dispute resolution system. This increases uncertainty and may trigger retaliatory responses from trading partners which threaten the effectiveness of the measure, or the competitive position of domestic firms.

An example of non-EU countries protesting such unilateral EU measures 'at the border' can be found in the EU's decision to include all flights to and from the EU in the ETS for aviation (an ETS that is run as a distinct silo, next to the regular EU ETS, with its own class of allowances). In response to this decision, other countries such as the USA and China strongly protested, leading the EU to temporarily suspend EU inclusion for non-EU flight operators (the so-called 'stop the



clock' decision). At the same time, the EU's unilateral action also spurred ICAO to debate global measures to address GHG emissions from aviation at an international forum.

Other international forums may also be of crucial importance to the agenda of climate policy making in the EU. Both the OECD and the IMF, for example, may change their guidelines or interpretations of certain forms of subsidy and taxation. Carbon pricing, a key EU policy instrument, can be seen as some form of taxation even if it comes in the form of a cap-and-trade system. Subsidies, while normally seen as either a payment from a public authority, or the reduction of charges, may also be considered to exist when a country fails to price in externalities such as GHG emissions. This is the direction in which the IMF has been going in recent years.

From a governance perspective, this shows that it should be clear how decisions at international forums may affect decision making in EU climate policy, and whether there should be predictable provisions outlining under what circumstances the EU would change its own policies, and in which ways.

At the level of the UNFCCC itself, some decisions can clearly directly interact with EU policy as well. Most prominently, this includes the system of upgrading pledges through repeated INDCs, and the associated review cycles. However, it may also be the case that at some point the UNFCCC includes a global carbon price in a future agreement. This would require an immediate change to the parameters of the EU ETS, especially where carbon leakage rules are concerned.

The UN level may also impact the overall level of ambition that is perceived to be necessary, through the release of IPCC reports. This includes both the Assessment Reports, outlining the latest conclusions on climate science and the implications for policy makers, as well as special reports such as the upcoming report on achieving the 1.5C goal that was mandated by the Paris Agreement. The content of this report may lead the EU to reconsider its targets, although this will likely happen following a renewed agreement in the European Council. It could, nevertheless, be considered to 'bind' the EU heads of state to act in a certain way, dependent on the outcome of IPCC reports. This would increase stability and predictability.

The Paris Agreement also contains more specific provisions that likely will have a great impact on the future of EU policies. An example would be Article 6 on carbon markets (or the sustainable development mechanism). As soon as the precise details of the workings of this mechanism are developed, it will be essential for the EU to discover how that system could, or should interact with its own ETS. This is particularly pertinent if the EU wants to move beyond a 'domestic-only' target such as it currently has with its NDC for 2030, and allow international credits.

In the case of linking different carbon pricing systems, it would become imperative to deal with any issues of 'hot air' arising already in the governance system in a transparent and predictable manner. Hot air arises in situations such as where there are concerns about either the effort required to achieve certain reductions, the level at which a cap is set, or the environmental

integrity related to certain credits. If two systems would link, where one party perceives there to be hot air in the other system, that party could be unwilling to accept the units (or credits) generated for use in its own system.

A governance system should be able to deal with such issues in predictable and non-arbitrary way, so that no ad-hoc decisions would be taken after the linking has taken place. The acceptance and non-acceptance (or banning) of various instruments should be based on transparent criteria so that the trading system would be stable and credible. The example of HFC credits in the CDM serves as an example of governance that should be avoided; this case is further described below in the section on governing instruments.

4.2 EU level

At the EU-level, some of the key decisions on governance relate to the demarcation between the two main pillars of EU climate policy: EU ETS and the Effort Sharing framework. Beyond decisions on the scope of these pillars (i.e. which sectors to include where), there may be interactions between the two pillars, either by choice or because of overlapping policies.

Overlapping policies in the 2030 Framework for climate and energy policies represents one of the most recognised interactions in EU climate policy that needs to be carefully managed. In the first place, this concerns the interaction between the 'headline targets' of GHG emissions reductions (in the EU ETS) on the one hand, and Renewable Energy and Energy Efficiency targets on the other hand. But there are also other policies targeting ETS and non-ETS sectors alike, which may affect the functioning of the main policy pillars.

4.2.1 Design choices at the EU level

The fundamental design choices in EU climate policy are first and foremost subject to the constraints imposed on it by it being a party to the UNFCCC and the Paris Agreement. The same holds true for lower levels of governance, which will be subject to the constraints of EU climate policy, et cetera.

Beyond the international constraints, the fundamental design choices of EU climate policy are found in a number of elements. These include the choice to go for a policy mix based on three headline targets, agreed upon politically by the heads of state and government in the European Council, covering GHG reduction, Renewable Energy and Energy Efficiency. It also includes the choice to have two pillars of climate policy; ETS and non-ETS, and to have little interaction between these two pillars.

The policy mix includes both climate and energy policies, even if all policies explicitly invoke a climate policy rationale. Moreover, these policies are based on dedicated, detailed Articles in the TEU. It is therefore clear that any change to the EU Treaties could have significant repercussions to EU climate policy, and that this might necessitate design changes. At the same

time, the overall objectives of climate policy might not change, even if the competence of the EU in the area of climate policy changes. From a governance perspective, the issue of continuity and credible commitment are then essential.

EU ETS & Effort Sharing

A key design choice for the EU ETS regards the allocation method for allowances. Since the start of Phase 3 in 2013, the EU has been explicit in stating that auctioning is the main method of allocation. Nevertheless, free allocation remains common; primarily to industrial sectors at risk of carbon leakage, but also to certain power generators in central and Eastern Member States. Over the course of Phase 3, about 43% of all allowances are to be freely allocated.

This continued free allocation is not without controversy, however. Rigid free allocation levels have led to certain operators receiving allowances far in excess of their emissions, thereby contributing to the glut of supply that has marked the EU ETS over the past half-decade. At the same time, free allocation comes at a cost to the public purse. Combined with the proliferation of carbon pricing regimes in other jurisdictions, this may limit the political backing for continued free allocation in the future.

For the Effort Sharing framework, the key design element is to have a rather bare-bones target setting framework, which leaves implementation up to Member States, and which does explicitly link to other non-ETS climate policies. Moreover, these targets are set based on relative GDP per capita, leaving the cost-efficiency of the policy to be achieved through other means such as flexibility mechanisms.

A shock that may necessitate a change in the design here would be if one or more Member States fails to comply with their annual targets for a number of years in a row. As the corrective measures are based on reducing targets in subsequent years, the credibility of EU non-ETS climate policy could be threatened in such a case.

Split between ETS and non-ETS sectors

A key feature of the EU climate policy framework is that it divides the economy into two parts, each covered by a different policy framework. The power and industry sectors are governed by the ETS, while other sectors are considered as non-ETS and covered by Effort-sharing legislation instead. This is a choice made at the intergovernmental level of the European Council (thereby requiring unanimity), but has strong implications for the functioning of the main climate policies of ETS and ESR.

First, the ETS and non-ETS are assigned different GHG reduction targets. Up to now, the ETS sectors were always assigned higher reduction targets than the non-ETS sectors, ostensibly reflecting their greater reduction potential: 21% versus 10% for 2020, and 43% versus 30% for 2030. An implication of this is that the non-ETS framework and Effort-sharing will take up a relatively bigger share of emissions in the EU.

This split between ETS and non-ETS sectors has distributional impacts as well. A choice to increase the relative burden for ETS sectors will have a mostly indirect impact on consumers, through increased electricity prices or prices of (intermediate) industrial products. Conversely, an increase in the emission reduction burden for non-ETS sectors, where Member States are primarily responsible for drafting and implementing policies to achieve these targets, would have a more direct impact on consumers as it concerns the transport and buildings industries.

While the ETS and non-ETS frameworks, in principle, act as silos, with no interaction between the two, this firewall is not absolute, as proven by the European Council's proposal to allow ETS allowances to be used as a flexibility instrument by Member States under the Effort-sharing Decision. The European Commission in its proposal for Effort-sharing after 2020 promptly introduced this mechanism.

Another way in which the balance between ETS and non-ETS may be affected is if the scope of the EU ETS changes, by the inclusion or removal of certain sectors. Notably absent from the EU ETS so far is the transport sector, even if there has been discussion about whether this should change. However, while the European Council is free to propose its inclusion (which would probably be directly taken up by the Commission, just as with the ETS/ESD flexibility), the choice itself is merely part of the ordinary legislative process of revising the ETS Directive.

This shows a discrepancy between choices of a similar impact (different reduction targets, and the scope of the ETS) while different decision-making procedures apply. It is true that the role of the different EU institutions is defined in the EU Treaties, with the European Council responsible for 'political and strategic guidance'. Yet, the Conclusions of the European Council in October 2014 (from which the examples in this section are derived) show that this guidance can range from headline targets to specific and detailed provisions such as those on ESD flexibility or carbon leakage. This reduces the predictability of how much influence different institutions have on the outcome of EU climate policy

Art 24a

Article 24a in the EU ETS Directive is another way in which the firewall between the ETS and the ESD proves not to be absolute. This provision allows credits generated by projects in non-ETS sectors, to be used for compliance by operators in the ETS. However, before this can actually take place, it requires implementing legislation to be proposed by the European Commission. This has never taken place, thereby rendering Article 24a dormant.

4.2.2 Interactions between EU policies

2030 framework policies: ETS/RE/EE

Interactions between the main 'headline' targets and policies are well recognized in the EU climate policy debate, even if some might see the response as lagging. Much like with the national measures described below, achievements in renewable energy and energy efficiency

policies may affect the demand for allowances in the EU ETS. The more renewable energy generated, and the higher energy efficiency achieved, the lower the demand for ETS allowances. While this is not per se an issue from an environmental perspective, it does affect cost efficiency, and which policy instrument may be seen as 'leading' in the overall policy mix.

The EU currently tries to account for this overlap by setting, and reducing the cap in the ETS while anticipating certain achievements in RE and EE. However, this anticipation is based on certain targets, while the actual achievements may differ considerably. As there may be a discrepancy between the two, overachievement in RE and EE may contribute to the surplus in the EU ETS. To address this, the supply should also respond to such changes in demand. For this, the Market Stability Reserve was created. Nevertheless, the MSR operates on a number of pre-defined parameters, which are not easily adjusted (it requires new EU legislation).

4.2.3 Policies with other objectives

Industrial Emissions Directive (IED)

The Industrial Emissions Directive is an environmental policy with objectives related regulating pollutant emissions affecting air, water, land, waste control, energy efficiency, but not climate change and GHG emissions. The legislation, however, covers many installations also covered by the EU ETS. The core regulatory tool in the IED is that industrial installations should comply with Best Available Techniques (BAT), which will ensure that pollutant emissions remain within acceptable limits.

The IED also contains provisions and opt-outs dependent on operating hours and the lifetime of installations. When certain triggers are reached, this may lead to significant reductions in operating hours.

In the process of complying with these BAT requirements, GHG emissions may concomitantly be affected as well. This will also affect the installation's demand for ETS allowances. In and of itself this interaction is not problematic: the policies clearly have different objectives. However, since the demand for allowances may be affected, the governance of ETS should be able to account for changes in demand spurred by the IED and similar policies (such as those on Member State level).

A similar effect is also present with the medium and large combustion plant regulations, which form a separate chapter in the Industrial Emission Directive. These regulations affect installations in the power sector also covered by the EU ETS, and require them to limit pollutant emissions. Given the sizeable share of GHG emissions combustion plants have in the ETS, non-GHG emission regulations can have a significant impact on ETS allowance demand, to which the supply should be able to respond.

Energy labelling & Eco-design Directive

Energy labelling and the Eco-design Directive represent a set of demand-side policies, ostensibly to complement the larger energy efficiency Directive, and supply-side policies such as the EU ETS. Under the Eco-design Directive, many consumer products are required to comply with energy efficiency standards. It thus affects these products' design, and eventual electricity consumption.

The Energy labelling Directive complements the eco-design requirements, by giving consumer more insight into the energy consumption of the products they purchase. Both policies have objectives distinct from, but still closely related to the main climate policies. For energy efficiency policies in general, they could be considered as much about achieving emission reductions as about limiting energy consumption, thereby lowering consumers' energy bills. The labelling requirements then increase transparency for consumers, allowing them to make more informed choices.

At the same time it cannot be denied that such measures directly interact with the EU ETS. However, they may nevertheless be justified considering the split incentives between electricity consuming goods, and end-users. It is end-users who pay the price for more, or less energy efficient goods, but they are not directly in a position to affect these goods' design. Consumers can only directly affect their use (consumption) of such goods, which is where the labelling requirements come in.

In the end, these demand-side policies will have an impact on electricity demand, and with it on allowances in the EU ETS. As with other policies affecting ETS demand, it is crucial that this demand impact is considered when setting the cap (representing the long-term supply), but also that the supply, more generally, can respond to such changes in demand, as it is infeasible that exact impact on demand will be measured accurately ex-ante.

Energy Performance for Buildings (EPFB) Directive

The EPFD represent another type of energy efficiency legislation, targeted at the non-ETS sector of buildings (the biggest non-ETS sector in terms of emissions, after the transport sector). From the perspective of the Effort Sharing framework, the EPFD is an EU level policy that helps Member States reach their individual GHG emissions reduction targets set under this framework. As such, the policies are complementary rather than overlapping.

Nevertheless, more efficient buildings may also affect electricity demand in this sector, which will influence the demand for ETS allowances. The same conclusions apply as with other policies affecting ETS supply and demand: the governance of the EU ETS should account for these impacts on demand when setting the cap, and the supply should be able to respond swiftly to changes in demand.



Fuel Quality Directive

The Fuel Quality Directive represents a policy that straddles the EU ETS and Effort Sharing policies, in terms of interactions. It is in principle a policy that addresses the quality of fuels used in the non-ETS sector of road transport, by setting standards regarding air pollutants but also greenhouse gas emissions. However, in order to achieve these standards, the fuel producers need to comply with the requirements set by the FQD.

The fuel producers are part of the refineries industry largely covered by the EU ETS. To comply with the requirements of the FQD, the refineries industry will need to adjust their own production processes. In some cases these production processes require more energy inputs, with a concomitant effect on the GHG emissions of the refineries sector. Indeed, GHG emissions for refineries have been rising over the course of EU ETS phase 3, in contrast to many other major industrial sectors, where emissions have dropped or remained steady; partly as a result of reduced output levels.

While these interactions are inevitable, they should be considered when establishing benchmark and carbon leakage rules for different sectors, to minimise unintended consequences.

Internal Energy Market

Internal energy market legislation concerns important regulation covering the electricity and gas markets, including infrastructure and trade aspects. Specific topics include liberalisation, interconnectors, capacity and supply security, cooperation between EU and national regulators, ensuring fair market access, and consumer protection.

These legislative packages (with the third having entered into force in 2011) are 'straightforward' energy policy, based on the Energy chapter in the TFEU (Art. 194). However, while the aim of this legislation isn't clearly environmental or climate change related, the strong focus of climate change legislation on energy sectors means that coordination between these policy fields is essential, if both are to be effective.

In particular, the growth of renewable energy, spurred both by the EU target in the 2030 Framework, as well as more generally by the decarbonisation objectives, can have major consequences for the functioning of energy markets. The intermittency of renewable energy makes it important to facilitate electricity trade and interconnections, which can increase stability in the electricity supply. Alternatively, legislation impacting infrastructure – especially that of gas supply – may have repercussions for how attractive certain investments by the power sector are.

Thus, while internal energy market legislation and climate change policy have distinct objectives and legal bases, the interactions need to be carefully coordinated. In particular, EU climate policy governance should ensure that the long-term objectives of climate policy are 'mainstreamed' throughout the internal energy market legislation, so as to ensure coherence between the two policy frameworks.

4.3 Member State level

At the Member State level, domestic governments can, within the limits of the EU Treaties, implement additional policies on climate and energy that may result in interactions. This includes measures such as carbon price floors, energy taxation, phase-outs of specific fuels or feed-in tariffs. Measuring and managing these interactions with the main pillars of EU climate policies represents an important area of governance, which will be analysed below.

4.3.1 Design choices for domestic climate policies and their interactions with EU climate policy

At the Member State level, the key design choice that directly interacts with the EU policy framework, are whether to have a domestic GHG reduction target that goes beyond the EU target. Choosing to do so may spur a Member State to introduce additional policies or instruments to achieve this higher target. Examples may be carbon price floors, emission performance standards or accelerated phase-outs of certain energy sources. The introduction of such instruments will have repercussions for the functioning of the EU ETS as well.

Different national ambition levels

While the ambition of the EU as a whole is set 'intergovernmentally' through agreement in the European Council, this ambition level in reality acts as a floor. Individual Member States can adopt stricter targets, both in terms of GHG reduction targets, and by other means such as by the introduction of emission performance standards, or greater deployment of renewable energy. Likewise, such higher ambition may both pertain to only ETS sectors or non-ETS sectors, or both at the same time.

In either case, higher ambition levels in Member States may affect the policy frameworks at the EU level, such as the EU ETS and Effort-sharing mechanisms. In the ETS sectors, national measures targeting operators in the ETS will likely impact the demand in that Member State for allowances. This change in demand can be triggered by various national policies, some which affect demand directly, and others that do so indirectly.

In the UK, the government has put into a place a price floor that acts as a 'top-up' to the EUA price. As of 2016, this floor stands at 18.08 pounds, the price of which will be added to the regular EUA price for every tonne of CO₂ produced. This is a noticeably higher carbon price than the one generated by the EU ETS, which throughout 2016 so far has largely been between 4-6 euros. As such, with this higher carbon price, coal-driven electricity generation in the UK has dropped considerably over the last few years, thereby also depressing demand for allowances.

Other policy instruments may yield similar effects, even if their appearance is very different. If a Member State chooses to phase-out a certain energy source, this will likewise have an immediate impact on the demand for allowances. Examples include the accelerated phase-out of nuclear power in Germany, which necessitates an increase in other forms of electricity

generation, which may or may not be more carbon intensive, or recently the Netherlands, where the government is considering the closure of certain coal plants that had only opened a few years prior. Such closures may be necessary for Member States to meet their own GHG reduction targets, but they can also lead to downward pressure on EUA prices, which in turn reduce the carbon constraint in the EU as a whole.

In France, meanwhile, the government is contemplating on whether to introduce a different kind of price floor, by having an auction reserve price, where allowances would not enter the market unless bids exceed this minimum price. Alternatively, feed-in tariffs in Germany have spurred the share of renewables in the electricity system, equally leading to decreased demand for allowances.

While the instruments deployed differ by Member State, their reason for introduction may be similar in that these countries have decided on higher domestic GHG reduction targets. In June 2016, the UK adopted 58% GHG reduction target for 2030. Germany has a 55% reduction target for the same period while in the Netherlands; a court ordered the government to increase its target for 2020 to 25%, up by five points from the EU target for 2020.

From a governance perspective, it is not necessarily important what the individual Member State targets are, (so long as it is clear that Member States may or may not go beyond the EU targets, something which will likely never be questioned due to the Environment Articles in the EU Treaties which provide for this) but rather how to deal with the consequences of these higher targets.

With respect to the EU ETS; if national measure can be expected to significantly affect demand for allowances, then it becomes relevant to ask how the supply should react to this change in demand at the EU level, if at all. This question indeed seems to be under consideration in the context of the EU ETS Phase 4 revision discussions, where the rapporteur for the Environment committee in the European Parliament has proposed that Member States cancel ETS allowances if they phase out certain parts of their electricity generation. Other MEPs have, instead, proposed a system of notification and subsequent cancellation by the European Commission.

Sweden, in fact, has proposed to buy and cancel a number of allowances, following the sale of Vattenfall's lignite coal assets, in order to 'offset' the impact of the sale on the European carbon market.

In the non-ETS sectors covered by the Effort Sharing legislation, similar concerns may be envisioned. Under the current Effort Sharing Decision and the future Effort Sharing Regulation, all Member States are assigned minimum GHG reduction targets, but they are free to exceed these targets. In such a case, a Member State may generate an oversupply in their Annual Emission Allocations (AEA), which may in turn act as impetus for other Member States to acquire these AEAs, rather than achieving their own targets. This needs to be accounted for in the design of the various flexibility mechanisms.

Price floors, domestic carbon taxes

A number of Member States in the EU have introduced policies that create additional carbon costs, or increase existing carbon prices. These measures, which can take the form of so-called carbon price floors, or of domestic taxes or other fiscal measures, interact with the EU ETS as they create different carbon constraints across different institutions.

In the UK, a 'carbon price floor' has been in place since April 2013, roughly coinciding with the start of EU ETS Phase 3. However, whilst carbon price floor has been the term used in the general discussion about the measure, in reality it has operated as a top-up to the carbon price under the EU ETS. Thus, for every tonne of emissions, an operator in the UK needs to pay the price for an EUA, and additionally the top-up levy which is currently priced at 18.08 pounds.

The value of this levy is readjusted periodically to reflect what the UK government deems an appropriate carbon constraint, as with the changing values of ETS allowances, as well as of the Sterling currency, the real carbon price faced by UK operators will vary. In any case, this carbon constraint goes beyond that in the other EU Member States (absent any similar measures there) and as such affects the demand for allowances in the UK. In the absence of measures to ensure that the supply is adjusted commensurately, this will depress the ETS price signal and lead to lower abatement elsewhere in the EU.

In France², similarly, the government has announced its intention to enact a carbon price floor. Much like in the UK, the 'floor' will be implemented by introducing a levy on the fossil fuels used in electricity generation (the power sector being the only concerned sector in the case of France). The level of this price floor would be 30 euro per tonne; incidentally the same level proposed as the minimum 'appropriate' level by the OECD (2016 report on carbon pricing) and the level the European Commission uses in its impact assessments for EU ETS implementing legislation (i.e. the carbon leakage lists).

The fact that price floors such as the ones in the UK and France are implemented through domestic taxation measures shows how fiscal measures interact with the EU ETS supply-demand balance. Such measures need not necessarily only invoke carbon contents: if taxation is used to address other types of pollution generated by installations covered by the EU ETS, this can likewise impact the demand for allowances in the carbon market.

While the Market Stability Reserve has been introduced to address the problem of rigidity in the supply-side of the EU ETS, the parameters of the MSR that determine when allowances are removed from or added to the auctioning schedule are fixed in legislation. Even if the MSR is capable of addressing supply-demand imbalances irrespective of how they were created, the proliferation of domestic measures impacting the demand for allowances may necessitate changes to these parameters.

² <http://energypost.eu/leading-example-impacts-domestic-french-carbon-price-floor/>

Phase-outs of specific energy sources

Accelerated phase out of specific (fossil fuel-based) energy sources represents a typical policy that may be considered in Member States that have domestic GHG emission reduction targets that go beyond the EU ones. In particular coal use, as the most carbon intensive fuel used in electricity generation, has seen significant reductions in recent years; particularly following the adoption of the Paris Agreement.

Member States that have higher domestic GHG emission reduction targets may find that closing coal-fired plants is a relatively easy way for them to meet these targets. This has been the case in the Netherlands in particular; where throughout 2016 there has been debate on whether to close certain, relatively modern coal-fired plants to meet the country's court-mandated 25% GHG emission reduction target for 2020.

Other policy instruments described above may also contribute to, or implement such accelerated phase-outs. Carbon price floors (or taxes) or emission performance standards can render such plants uneconomical, or illegible to operate. In any case, whenever such plants are taken off the grid, the impact on the demand for ETS allowances will be significant.

This represents an avenue where the governance of ETS should be able to account for significant changes in the demand and supply for allowances. It is in this light that some of the proposals by the ENVI committee in the European Parliament, concerning national notification and cancellation of allowances should be seen.

Feed-in tariffs

Feed-in tariffs primarily represent a means for Member States to achieve higher levels of renewable energy uptake in their electricity generation mix. This can be driven both by the EU-level targets expressed by the Renewable Energy Directive, or by domestic initiatives such as the *Energiewende* in Germany. With feed-in tariffs, certain forms of renewable energy are compensated at fixed, long-term levels, which enable both consumers to benefit from installing renewable energy capacity such as through solar PV panels, while investors and suppliers can be assured of higher demand for these renewable energy sources.

From the perspective of governance, problems can arise in case the feed-in tariffs lead to unexpectedly high levels of renewable energy uptake, with concomitant decreases in demand for ETS allowances from the power sector. Alternatively, the consequences of feed-in tariffs, through increased electricity prices and unexpected high uptake levels may cause a political backlash, whereby the tariffs are rapidly reduced again. This, however, greatly undermines renewable investment certainty and can threaten the achievement of climate goals in the longer run. As such, the issue of feed-in tariffs requires close coordination and measurement; both as regards the impact on ETS allowance demand, and the stability of the investment signal.

4.4 Governance of policy instruments

At a granular level, within policy instruments itself, there are certain shocks that can have a significant effect on the functioning of climate policies. While also present at other (higher) levels, economic shocks will reverberate through different levels of governance. In the case of the EU ETS, its carefully calibrated (and highly complex) free allocation rules may come under significant stress when ‘tested’ in these circumstances. This particularly pertains to partial cessation rules, and rules concerning capacity extensions and reductions (which may be more prevalent with greater economic shifts). Generally speaking the regulator should have the capacity to quickly adapt such rules if proved necessary by external events. Less complex rules may help with this, but may not always be feasible.

Policy interaction wise, changes to (environmental) state aid guidelines would have a significant impact on the functioning of policies. Interactions can occur on both the climate and energy policy side. For climate policy, indirect cost compensation is a key component of carbon leakage mitigation. However, at such compensation is currently considered operating aid, it is subject to strict conditions under state aid guidelines. For energy policy, guidelines (or rulings of the CJEU) on capacity mechanisms can have a great impact on investment in general, and the mix between conventional and low-carbon sources in particular. Whether or not certain conventional installations remain ‘online’ for backup purposes may subsequently affect the demand for ETS allowances considerably.

Finally, the modalities of the Innovation and Modernisation Funds are important in guiding the flow of investments that these funds generate or support. Thus, the governance of these instruments as such should be considered at every step of policy-making.

4.4.1 Interactions and shocks that impact specific policy instruments

Certain policy parameters are of crucial importance for the functioning of climate policies. Whenever there are major shocks or changes, it is likely that these parameters would need to be adjusted.

At the global level, key parameters would be the requirements for Nationally Determined Contributions, including how they are communicated, or the exact provisions of the Article 6 ‘sustainable development mechanism’ (market) of the Paris Agreement.

For the EU ETS, such parameters are the Linear Reduction Factor, the auctioning share, and the rules for free allocation and determining carbon leakage risk. There may be certain developments that could put into question how individual parameters are set. For example, the adoption (or rejection) of ambitious climate policies in other countries around the world may put into question the adequacy of the EU’s ambition level, and the importance of its carbon leakage mitigation measures.

Alternatively, there may also be more structural shocks that require a readjustment to these parameters. The reduced output levels among industrial sectors following the 2008 financial and economic crises has led to free allocation levels becoming 'out-dated', and widely in excess of reported emissions for these sectors.

For Effort Sharing, too, reduced economic performance may lead to non-ETS emissions being below the expected target pathways, which will have concomitant consequences for the surplus of AEAs, and the desire or necessity to trade these units with other Member States.

For Effort Sharing, parameters such as the limits on borrowing and banking, and on trading between Member States can have a significant impact on the cost effectiveness of the policy. Conversely, its ambition level in the short run is strongly affected by the starting point of the reduction trajectories towards the individual Member State targets.

While these parameters for the EU policies can most obviously be changed as part of 'regular' co-decision revision procedures, this may not always allow for a rapid enough response to changing circumstances. As such, the question of whether certain policy parameters should be subject to changes under different legislative or regulatory procedures is an essential element of EU climate policy governance.

4.4.2 Interventions: management of instruments

Beyond the governance of climate policy as a whole, specific instruments and policies within this framework also may have their own governance (or management) practices. This relates to build-in practices concerning reviewing or monitoring policies, and how adjustments could be made.

There are also more specific cases, where political intervention into existing policies had strong implications. Such interventions may be an inevitable part of climate policy governance, but they should take place in a predictable way, on the basis of established principles. Examples include the 'backloading' measure passed in 2014, which addressed oversupply in EU ETS, or the treatment of HFC credits under the Clean Development Mechanism (CDM).

While the former example has been followed up in a more systematic way through the Market Stability Reserve, the example of HFC credits under the CDM represents an important example of why political intervention into policy instruments need to be as predictable as possible, if the policy is to remain credible.

In the HFC-case, projects leading to reductions in hydrofluorocarbons (with a far higher global warming potential than regular greenhouse gases such as CO₂) could generate credits under the CDM. However, precisely because of the considerable global warming potential of HFCs, minor reductions could already generate a considerable number of credits. As such reductions were not difficult to achieve technically, this created a perverse incentive to first increase HFC use, so that they could later be easily reduced, while claiming CER credits for this reduction.



Following an influx of such HFC credits, the EU then decided to ban these credits for compliance under the EU ETS, fearing that they did not represent 'real' emission reductions and would undermine the environmental integrity of EU climate policy.

This is primarily an issue of appropriate baselines, which can be accounted for in the policy design. However, while the intervention may be justified from an immediate environmental integrity point of view, the perceived arbitrariness of the intervention also undermined confidence in the larger CDM system as such. If credits may be declared invalid (or less valuable) ex-post, then why invest?

Such perceived arbitrariness needs to be avoided when managing credit-based systems. It should be clear from the outset what the criteria are for banning credits (or other instruments), and the reasons for doing so. Such transparency would increase predictability, and boost stability.

5. Recommendations

When analysing the different interactions of EU climate policy across different levels, two issues return time and again. Managing these issues should be at the core of EU climate policy. There are other issues that emerge from our analysis, but we shall focus on these two.

The first is the issue of the interplay between global climate policy at the level of the UNFCCC and its impact on EU climate policy. This requires close coordination. The second issue is the impact that external shocks, and other policies, may have on the functioning of the two primary EU climate policy frameworks: EU ETS and Effort Sharing.

5.1 Interaction between global and EU climate policy

With the entry into force of the Paris Agreement, the interaction between global and EU climate policy arguably represents the most important element of EU climate policy governance. The Paris Agreement moved from an uncertain future Agreement, ahead of COP21, to a fait accompli, swiftly followed by entry into force just ahead of COP22 in Marrakech. However, the actual building blocks of EU climate policy, represented by the 2030 Framework policies, could be seen, to some degree, as having a governance that is not allowing it to synchronize with the dynamic of the Paris Agreement.

The 2030 Framework was outlined in the European Council Conclusions of October 2014, which were not revisited after the adoption of the Paris Agreement. The Commission, ahead of COP21 already tabled some policies such as the EU ETS Phase 4 revision. Others, such as the proposal for the Effort Sharing Regulation followed afterwards. However, revised proposals for certain crucial policies, such as those on Renewable Energy or indeed, Energy Union Governance, will only be revealed by the end of 2016 or later, as in the case of transport.

As a result, the policies that will actually implement EU climate policy will be framed and decided while thoughts on the implications of the Paris Agreement are at different stages. While it may not be feasible to treat all components of the 2030 Framework at the same time, a coordinated and integrated approach going forward is essential.

With the Paris Agreement establishing a 5-year Review Cycle, it is clear that the EU's commitment to the UNFCCC, including its overall ambition level, is subject to change every 5 years from 2025 onwards (when it will need to adopt a new NDC, following a global stock-take two years prior to this).

We propose that these global review cycles at the UNFCCC level should lead to an automatic review of the 2030 Framework policies, including their adequacy. This includes reviews of the EU ETS, Effort Sharing Regulation, Renewable Energy and Energy Efficiency Directives, Energy Union Governance, and relevant sectoral policies addressing sectors such as Transport, Buildings, and Agriculture. These reviews should take into account any new insights from climate science, in

case institutions such as the IPCC have conveyed these. This would ensure that EU climate policy is taking into account available scientific data, as required by the TFEU (Art. 191).

A policy review is always possible through the ordinary legislative procedure. However, this is also a rather lengthy and burdensome process that may not be suitable to repeat every 5 years for a large body of policies that, moreover, require an integrated and coordinated review. Thus, it should be decided ex-ante which policy parameters are up for review, which actors and institutions carry out the review, and the appropriate procedures that would be applicable.

Relevant parameters for the EU ETS would be the Linear Reduction Factor (LRF), the operating parameters of the Market Stability Reserve (as they affect the short-term supply), and the carbon leakage and free allocation rules. For Effort Sharing, the key parameter would be the trajectories defining the individual Member States targets, and possibly the flexibility provisions.

For Renewable Energy and Energy Efficiency much would depend on mechanisms that would incentivise further achievements by Member States, which are currently still unclear. For command and control policies such as those addressing road transport, or air pollutants, the overall stringency could be considered. Most importantly, however, these parameters should be reviewed in an integrated manner; especially as concerns their interactions and with regard to the LRF in the EU ETS in particular.

Equally important is to whom the analysis of the review parameters will be compared. Since all Parties to the Paris Agreement are expected to come forward with new NDCs every five years, a review of EU climate policies should take into account what other jurisdictions are doing, as regards climate policy. Who should be included in this review? At a minimum we propose to compare the EU commitments and policies to those of the G7 (or G20), other OECD countries, and/or the biggest trading partners of the EU, relevant for the main traded sectors affected by climate policies.

5.2 Regular review of functioning of main EU climate policy frameworks

In addition to reviewing the ambition and objectives of the whole body of EU climate policies, the EU should also regularly review the functioning of the main EU climate policy frameworks: EU ETS, and Effort Sharing. This could be done through annual (or biennial) comprehensive reviews, building on exercises such as the carbon market report that is already mandated by the current ETS Directive.

This would be an exercise that would need to be part of, and complementary to, the data collection, review, and reporting that will take place as part of the Energy Union governance mechanism. In particular, it would need to be closely integrated with the proposed indicators that the Commission will monitor. This is another reminder to ourselves that Governance concerns more than just data collection and indicator monitoring, but requires the continued

review of interactions with the elements of climate policy, including those with the external environment, while also requiring a follow-up in decision making. Data collection is a tool in decision-making, but it is not an end in itself.

In addition to regular reviews, such reviews could also be mandated to take place if triggered by certain events or developments. This would not be an ad-hoc review, but rather a review contingent on given, pre-defined occurrences, or based on a recommendation, as detailed below. For instance, this could arise if there is a significant economic shock, or an extended period of strong economic fluctuations, which may make it necessary to revisit some of the long-term pathways and assumptions that underpin EU climate policies. These assumptions may include expected carbon prices, economic growth rates, abatement costs in different sectors, adoption rates of certain sources of energy, and the proliferation of carbon constraints in other jurisdictions.

Every review should also take account of significant technological developments, if these could affect the functioning of EU climate policy. It would be up to the discretion of the institution mandating the review to define what to include, and when developments are 'significant'.

Who should carry out this review? As the guardian of the Treaties, but also as the pivotal institution in future Energy Union governance, and more generally, as the initiator of legislation, the European Commission appears well equipped to be mandated to carry out these reviews. Yet, a wider institutional and public debate on what the reviews should actually include, such as the appropriate parameters and conditions to take into account, seems warranted.

To safeguard the independence of the review process and policy mix analysis, an independent Advisory Group may be envisaged, which would provide opinions and recommendations, which the Commission would take into account in its review. The Advisory Group could also have the mandate to recommend a formal review by the Commission. Should such recommendations not be pursued, reasons would have to be provided by the Commission.

Such an advisory group should be composed of recognised experts outside government on climate policy and regulation, as well as electricity and carbon markets and include academics, and industrial and civil society stakeholders.

To ensure transparency and improve accountability, the composition of this advisory group, as well as its opinions and recommendations should be publicly accessible. The same holds for the review in general. While the opinions and recommendations of the advisory group would not be binding, the Commission should motivate in their review if its own views significantly diverge from those of the Group.

Reports on the carbon market

The annual reports on the functioning of the European carbon market could be expanded by taking into account the following issues: market functioning; carbon leakage mitigation

measures; environmental effectiveness and the role the ETS price signal plays in this (a proxy for whether the EU ETS is a central instrument or not).

The issues of market functioning and the role of the price signal require further elaboration. For the price signal, this means reviewing to what extent it can be considered a driver for change in ETS sectors, how it is related to economic forecasts and performance (i.e. does the price reflect long term fundamentals of the carbon market?), and how the price signal relates to liquidity levels.

Market functioning not only entails the technical market functioning, as would be measured by small bid/ask spreads and decent liquidity, but also, more generally, the supply in the market, and how the supply-demand balance (whatever it is) may be explained. Thus, the liquidity levels in both the market and the Market Stability Reserve should be analysed. What is the source of this liquidity (or surplus)?

This requires an analysis of all overlapping and interacting policies, as described throughout this paper, to see how other policies may have affected the demand for ETS allowances. The review should also take into account the economic conditions, as well as the improvements in efficiency in different sectors.

If such an analysis is to be conducted successfully, and transparently, it follows that the publication and accessibility of data and other information pertinent to assessing relevant policy parameters is also a key element of good climate governance. A particularly relevant example would be the publication of activity levels for ETS operators, and emissions and allocation data at NACE4 level – on which the free allocation rules are based.

Depending on the outcome of this analysis, it should then be decided whether allowances should be taken out of the market (by cancellation or absorption by the MSR), or whether they should remain on, or be returned to the markets. The latter should be the case if the surplus is the result of abatement efforts and efficiency improvements, which should not lead to a more stringent price signal.

It is also important to emphasize that, as in other areas where there is an element of judgement in the process, it is important that the review also maintains a human dimension and a qualitative element. In this frame, having clear rules is important, but they need to also be seen as guidelines, allowing for human judgement to play a role, within those guidelines. Some have called for a carbon central bank to play a role. In the context of EU governance that is not a likely scenario. If we accept that a carbon bank is not a politically realistic solution, this should not imply that the idea of human intervention as part of the toolbox of EU climate governance is to be abandoned. What we need to take away is that the functions of a hypothetical carbon central bank are important. They should, however, be operationalized by having them shared among the EU institutions. Furthermore, they should be constituted within the constraints of the EU Treaties, and be closely integrated with existing EU decision-making procedures.

5.3 Procedural questions and follow-up

As concerns the review processes described so far, the European Commission is well equipped to carry out these reviews, which can be seen as a form of continuous evaluations, or ex-post impact assessments. If possibly triggered, and/or aided by an independent Advisory Group, such a review could help EU climate policy to be updated predictably in line with long term needs and objectives. However, when it comes the political, or regulatory response, the Commission – as the initiator of legislation – is not best equipped, if it would need to resort to the co-decision procedure, which arguably is too lengthy a process. Even when agreements are reached in ‘first reading’, which is not guaranteed, the average length of the co-decision process is about 14 months³.

An alternative procedure, making use of delegation to a committee could be more appropriate. Such a procedure could be based on Article 290 TFEU (covering delegated acts), which is akin to the former regulatory procedure with scrutiny, or alternatively on Article 291 TFEU (covering implementing acts). While both procedures together are a successor to the old ‘comitology’ system, there are some differences between the two. Implementing acts, in particular, still make use of comitology committees, giving Member States greater control over the proceedings. Nevertheless, the composition of ‘expert groups’ under Article 290 could take up a comparable role⁴, and could play an advisory role as described in the previous section.

While these procedures are in principle limited to non-essential parts of legislation, and are in any case subject to the limits on delegation established by the Meroni-doctrine of the ECJ, which does not allow the delegation of strategic and political choices, it could be argued that the parameters of EU climate policies are ‘non-essential’ so long as the overall goal remains unchanged: implementing the EU’s commitments to the UNFCCC and the Paris Agreement.

With these procedures, the Commission could, after its own review, propose a certain course of action involving the adjustment of certain pre-defined parameters (LRF, starting points in ETS or Effort Sharing, allocation rules, carbon leakage criteria) which would then be discussed by the committee (and advisory group), and over with which both co-legislators would need to consent.

Even if this would require a very careful delineation of the limits of delegation, and the extent to which parameters could be adjusted, such a delegated procedure would arguably equip the EU to respond more effectively and expeditiously to the pressures that will inevitably follow from the implementation of the Paris Agreement. Crucially, the Commission would retain control over the review process, even if it would need to motivate its decisions specifically when diverging from the advisory committee’s recommendations.

³ http://ec.europa.eu/codecision/institutional/analysis/codecision_stat_en.pdf

⁴ More info on delegated and implemented acts:
http://www.eipa.eu/files/repository/product/20130904094203_Comitology_Brochure5EN_web.pdf



Such a governance process would make it possible for the EU to transparently respond to the many changes and shocks that may affect EU climate policy in a reasonably predictable manner. It would also ensure that predictability is not confounded with rigidity: a governance system with frequent reviews, taking into account a broad set of ex-ante determined indicators can be both stable and predictable, which would enable investors to better account for how the regulator might respond to given contingencies.

5.4 Ongoing EU climate policy developments

The revision for EU ETS Phase 4 is still ongoing and the conclusions from this paper ought to be considered. It is quite clear that the current proposals will not result in an ETS fit for purpose until past the mid-2020s. At the same time, the focus for this review as per the European Council Conclusions is on dealing with competitiveness and carbon leakage. The solutions that were proposed through the creation of the MSR may be valid but, as mentioned, will not be decisive for a long time.

One option, which is marginally considered currently, is to also include a review of the yet-to-be-started MSR before it even starts to operate. This is one option to be considered. Another approach which should also be incorporated is to include in the governance of the EU ETS some of the recommendations we make above, such as a review of elements of EU ETS and MSR after the 2018 Paris Agreement-mandated 'informal dialogue'.

For the proposal on the new Effort Sharing Regulation (ESR), similar review clauses could already be considered. As soon as the UNFCCC completes its 2018 'informal dialogue', and after the first global stock-take in 2023, there should be reviews of the adequacy of the proposed pathways. The same goes for the limits of the flexibility mechanisms included in the ESR framework.

6. Conclusions

The EU has been a global leader in climate change policy over the last decades, a role that both politicians, as well as society at large finds important, and would like to maintain. In the wake of the entry into force of the Paris Agreement, the EU is continuing at a steady pace to propose, revise, and implement a set of policies and targets that were agreed two years ago (October 2014) – the 2030 Framework for climate and energy policies, while the Energy Union initiative remains at the forefront of the Juncker Commission’s efforts in the area of energy and climate change. At the same time, EU climate policy needs to adapt to the new structure of the Paris Agreement, with many rules that will influence the EU’s own policies yet to be defined, and with a process in place to periodically increase the level of ambition.

In this context, the governance of EU climate change policy will be increasingly important. It will have to be stable and predictable to ensure that a relevant price signal is given for decarbonisation, while at the same time not becoming rigid and being able to respond to changes – both those we know will need to be provided for, and those that we cannot yet foresee.

This paper plays a number of important roles. It defines governance in a broader context than the general EU discussion, which has focused on reporting and indicators. It looks at governance in terms of the process by which authority is conferred on the regulators, by which they make the rules, and by which those rules are enforced and modified. It is hoped that it will stimulate a discussion, and possibly provide some food for thought in the discussions on some of the flagship EU climate policy instruments, such as Phase 4 EU ETS revision. In this case, as in others, the changes that are inserted through changes in EU Directives are important. We feel that what are equally important are the governance provisions that will allow EU climate change policy to adapt.

This paper also identifies and describes a very complex set of interactions that impact EU climate change policy formation and governance. With the entry into force of the Paris Agreement, ambitious climate policies and the coordination of its component policies will remain a key priority for governments around the world. In the European Union, this coordination effort is made yet more complex in the context of the multi-level governance system within which the EU institutions and its (for now) 28 Member States operate. The breadth of what is impacted by EU climate change policy, and the multi-layered complexity of the interactions, makes this policy area significantly more challenging than other environmental issues.

The two main areas of contribution of this paper are also reflected in the main recommendations. A first recommendation addresses the interaction between the global- and EU-level policies. Governance is recommended that would specify ex-ante, not only a review



every five years, as with the Paris Agreement cycle, but would also specify which parameters should be reviewed, and which actors would undertake the review.

A second recommendation focuses on ensuring that the governance of EU climate change policy provides for a regular review of the EU ETS and ESR. It also lists a number of areas where the EU ETS review can be expanded, such as market functioning, including the origin of excess liquidity, should there be one, the role that the carbon price plays (is it the driver of change?), and the effectiveness of carbon leakage provisions. This review would be aided by an independent advisory group, thereby improving transparency and inclusiveness.

In the end, many of the issues that we now find in the EU ETS have their genesis in governance provisions, and this report aims at identifying them and ensuring that future perturbations in the system can be addressed.

Annex 1: Competences of the EU to act in the areas of climate and energy policy & relevant institutions

- Level of competence: Article 4 TFEU
- Article 4(2) of the TFEU states that environment shall be an area of “shared competence” for the EU. The same goes for the area of energy. “Shared competence” is described by Article 2(2) TFEU as an area where the Union and the Member States may legislate and adopt legally binding acts. However, Member States can only exercise their competence to the extent that the Union has not, thus limiting MS discretion in that regard.
- **Environment: Title XX of the TFEU deals with the provisions on environment, including climate change, which is specifically highlighted in the primary Environment Article 191**
 - **“promoting measures at international level to deal with regional or worldwide environmental problems, and in particular combating climate change” Art 191(1)**
- Art 191(2) provides for some guiding principles of EU environmental action:
 - “aim at a high level of protection, taking into account the diversity of situations in the various regions across the Union”
 - Precautionary Principle
 - Principle that preventive action should be taken
 - Environmental damage should as a priority be rectified at source
 - The polluter should pay
- Art 191(3) sets out what the EU should take into account when preparing environmental policy
 - Scientific and technical data (e.g. IPCC)
 - Environmental conditions across the EU
 - Potential benefits and costs of action and inaction
 - Economic and social development of the EU as a whole, and the balanced development of its regions
- Art 191(4) recognizes the global element of certain environmental policy and sets out the rules for cooperation with third countries and international organisations. This shall be within their respective spheres of competence, thereby also making the Treaty provision on negotiating international agreements relevant. That said, this competence is without prejudice to MS competence to negotiate in international bodies and conclude agreements (indeed, both the EU and its MS are all Parties to the UNFCCC)
- Article 192 is the procedural article:

- The first paragraph states that the ordinary legislative procedure shall apply (co-decision)
- The second paragraph provides for exceptions, and notes when a special legislative procedure (with unanimity in the Council) should apply
 - Provisions primarily of a fiscal nature (hence the difficulty of a carbon tax at EU level)
 - Measures affecting town/country planning; management of water resources; land use
 - “Measures **significantly** affecting a Member State’s choice between different energy sources and the general structure of its energy supply”
 - This is the provisions where the EUCO ostensibly refers to when it talks about “freedom to decide its own energy mix”
 - “significantly” is highlighted to show the contrast with a similar provisions in the Energy Article
 - This is also the provision that opponents of certain types of strong climate action refer to (such as Poland) when launching legal challenges
 - The Council may decide by unanimity to still decide on the type of measures listed above by regular co-decision
- Third paragraph talks about “general action programmes setting out priority objectives” (not further defined), that these should be adopted through co-decision
- The fourth paragraph states that member States shall finance and implement environment policy, unless where provided otherwise
- Finally, Art 192 has a provision on measures that involves costs that are deemed disproportionate for a Member States; this may result in temporary derogations and/or Cohesion policy funding
 - This may relate to some of the exceptions in EU climate legislation for CEEC states?
- Article 193 TFEU states that EU measures adopted under Art 192 should not prevent Member States from maintaining or introducing more stringent measures themselves
 - i.e. ‘gold-plating’ is allowed – this seems important for MS that want to move quicker than others, as can also be seen with the various carbon price floor in some MS
- **Energy: Title XXI, energy policy is closely related to, and interlinked with climate policy. The primary Article 194 TFEU on energy policy states the priorities, which ring familiar in the context of the Energy Union debate:**

- First paragraph: In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to:
 - (a) ensure the functioning of the energy market;
 - (b) ensure security of energy supply in the Union;
 - (c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and
 - (d) promote the interconnection of energy networks.
 - This paragraph highlights energy efficiency and renewable energy specifically, while also referring to the need to improve the environment, thus tying energy and climate policy closer together
- The second paragraph is the procedural counterpart: co-decision shall, in principle, apply to achieve the objectives above
 - However, the Article continues: **“Such measures shall not affect a Member State's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply, without prejudice to Article 192(2)(c).”**
 - This is another indirect reference to the MS discretion in determining its own energy mix, this time not including the word “significant” and without prejudice to the environmental provisions
 - While this amounts to a stricter ‘test’, it is only relevant in so far as measures are indeed based on the energy article, and not on Art 192 on the environment
 - Paragraph three states that unanimity shall apply to measures primarily of a fiscal nature
- International Agreements: Articles 216 and 217 TFEU denote that the EU may conclude international agreements where this is, inter alia, required to achieve certain objectives of EU policy – these Agreements will be binding upon the EU and Member States, and may involve reciprocal rights, obligations, common action and special procedure.
 - Article 218 TFEU provides for the procedural elements, including those of the negotiations, and delineates how the Council, EP and Commission are to act.
- 2030 Framework headline policies, and degree of centralization
 - Principle of subsidiarity should ensure that action takes place at the lowest level where it can effectively be done. The development of the

ETS phases, and the differences between ETS and ESD show how this principle may affect policy design:

- ETS: initially, there was no EU-wide cap and centralized allocation mechanisms, rather there were National Allocation Plans. As did led to problems of over-allocation in Phase 2, with Member States having an incentive to be generous in their allocation so as to protect their industry relative to those in other Member States, more centralization was deemed appropriate. In Phase 3 an EU-wide cap and harmonized allocation were introduced, thereby transferring power from Member States to the Commission
- ESD: Unlike the ETS, the ESD is a rather basic policy framework. It mostly sets a number of individual targets for Member States, and the flexibility they have in achieving them. How to achieve these targets is left up to Member States themselves. They thus retain discretion to set their own priorities and energy mix.
- With higher targets for 2030, however, there is debate on whether this requires more coordinated EU policies, to make sure that the achievement of the ESD targets are seen as credible.
- Part of the targets will also be achieved through the help of centralized EU policy, i.e. those on energy efficiency (including for buildings) or card standards in the road transport sector
- Member States may also go beyond EU targets (mandated by the Treaty). The EU targets as enshrined in the 2030 Framework, therefore rather serve as a floor. This explains the higher GHG reduction targets seen in, for example, the UK, Germany, but also the policies to achieve such targets, e.g. carbon price floor, coal phase-out
- GHG reduction: set by the EUCO in its Conclusions, including the base years, but further transposition into policies (such as the ETS or ESD) is required
 - At least 40% reduction (compared to 1990) ; 43% ETS, 30% ESD (compared to 2005)
 - Renewable Energy: At least 27%, to be achieved at EU level (binding), but no binding Member State targets
 - Current legal base: Environment (Art 192)
 - MS may have more ambitious targets, in line with State Aid guidelines
 - Energy Efficiency: indicative target of at least 27%; review by 2020, keeping in mind an EU level of 30%

- Current legal base: Energy (Art 194 (2))
 - “EE achievement” should fully respect the effectiveness of the ETS system”
 - No binding MS targets, but higher national targets allowed

Relevant actors and institutions in EU climate policy

European Commission

The European Commission arguably represents the key regulatory institution in EU climate policy governance. As the initiator of legislation, it is responsible for framing the initial proposals of the building blocks of EU climate policy: EU ETS; Effort Sharing; Renewable Energy; Efficiency standards et cetera. At the same time it is also responsible for drafting key implementing legislation, such as the exact carbon leakage and allocation rules, or rules on Monitoring, Reporting, and Verification.

In keeping track of the functioning of policies, the Commission is responsible for mandated reviews such as the annual carbon market report, but also to manage databases such as the Transaction Log, for tracking and registering ETS allowances and trades, as well as trade of AEAs between Member States.

The Commission also represents the EU in international negotiations, including those at the UNFCCC, or in other bodies such as ICAO (for aviation) or IMO (for the maritime sector).

European Council

The European Council sets out the political and strategic direction of all EU policy, including that of climate and energy policy. This includes the main ambition levels of EU climate policy. While not binding hard law per se, conclusions of the European Council represent key documents in the current climate policy governance in the EU, as they demarcate the boundaries, and set the general framework (subject to the Treaties) within which the other institutions are expected to set policy and draft legislation. Decision-making in the European Council takes place by consensus.

The European Council Conclusions of October 2014 established the key parameters of the 2030 framework for climate and energy policies (including the targets of ‘at least 40% GHG emissions reduction, 27% renewable energy, and 27% energy efficiency for the EU), and strongly influence the legislative proposals that have come out since.

Council of the European Union (Council of Ministers)

As one of the co-legislators in the EU, the Council is responsible for negotiating and adopting the main EU climate policies. It takes decisions based on the relevant provisions in the Treaties. In most cases, such as with, for example, EU ETS and the Renewable Energy Directive this implies the use of the Ordinary Legislative Procedure (co-decision), and voting by a qualified majority. The Council of Ministers also has a rotating Presidency, held by Member States for 6 months at a



time. These Presidencies are also involved with the negotiations of the EU in international forums such as the UNFCCC.

European Parliament

The European Parliament represents the other co-legislator, next to the Council of Ministers, and is equally involved in drafting legislation under the Ordinary Legislative Procedure. In case special legislative procedures apply, the European Parliament may only have the right of consent, but is not part of the actual legislative processes. In cases where the EU has delegated powers to committees, such as through comitology or delegated acts, the European Parliament can also be required to give its consent to decision by these committees. The Parliament, finally, is also required to give its approval to international agreements (e.g. the Paris Agreement); as such, it also sends delegations to international negotiations where the EU is present.

Member States

Member States of the EU are first and foremost represented in the European Council (heads of state and government) and Council of Ministers (subject specific ministers). Beyond that, Member States can exercise their own competence in the fields of climate and energy policy, subject to the competence limitations as outlined in the Treaties (see Annex).

EU Committees (CoR, EESC)

The Committee of the Regions and the European Economic and Social Committee are two formal institutions of the EU, primarily formally involved in the process of drafting legislation through co-decision. The Committee of the Regions consists of representatives of regional governments, while the European Economic and Social Committee represents economic interest groups. As part of the Ordinary Legislative Procedure, these committees are asked to present their opinions on legislative acts under consideration.

National Competent Authorities

‘National competent authorities’ is an umbrella term for domestic regulatory agencies, tasked with various roles to ensure compliance with EU policies. In the context of EU climate policy, the national emissions authorities are the most important, as they are the agencies verifying emissions, conducting compliance checks, and ensuring that relevant data gets reported to the EU institutions.

Annex 2: World Bank indicators of good governance

Voice and accountability

“Voice and accountability captures perceptions of the extent to which a country’s citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.”

This dimension is relevant in so far as it regards ‘who has input’ in framing and deciding on policies and regulation, and to whom are they accountable. In any EU policy context, including climate policy, this category relates to salient considerations and discussions on the balance of power between EU institutions and Member States. But voice and accountability may also be said to concern issues of competence and sovereignty, democratic legitimacy and accountability, and the extent to which special (industry stakeholders) and collective (citizens) interests are accounted for.

Political stability and absence of violence

“Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically- motivated violence, including terrorism.”

This dimension is clearly less applicable in the EU context. While stability of the policy and regulatory environment is of paramount concern to this paper, this is something different from outright political stability (let alone violence). That being said, any governance framework should to some extent be resilient to political instability in for example Member States (e.g. the consequences of Brexit). It could also be considered to approach this category from the point of view of systemic stability and preventing social unrest, which concerns equally the highest echelons of politics, but also central banks, and the impact that climate change policy may have on this. Specific examples include the sustainability of the transition to a low-carbon economy, or the potentially debilitating impact of increased migration levels.

Government effectiveness

“Government effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government’s commitment to such policies.”⁵

Effectiveness is clearly important for any policy or regulatory framework. Yet, the effectiveness as such of EU climate policy is expressly not the focus of this paper. Rather, a stable and predictable governance framework is a necessary but not sufficient condition that should enable, or contribute to the effectiveness of EU climate policies. Thus, the governance

⁵ WB document on Government Effectiveness dimension:
<http://info.worldbank.org/governance/wgi/#doc>



framework is a sine qua non for government effectiveness. By analysing the institutions, decision-making procedures, and interactions in EU climate policy, we will none the less be addressing the “quality of policy formation” and the EU’s credible commitment.

Regulatory quality

“Regulatory quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.”

This dimension, in the context of the World Bank represents the impact of regulation on ‘private sector development’. This is akin to this paper’s focus on how sound governance may lead to improvements in the investment signal. More generally, this dimension may be seen as representing the impact of various regulations and whether they are proportional and not unnecessarily burdensome. Proportionality, being a fundamental EU legal principle, would clearly be relevant to the EU climate policy governance.

As this dimension is about the ‘ability’ of governments to develop sound policies and regulations, and not whether these policies are sound as such, this dimension represents one of the core categories that our analysis will reflect. In addition, the dimensions of voice and accountability and of government effectiveness feed into this dimension of regulatory quality.

Rule of law & control of corruption

“Rule of law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.”

“Control of corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as “capture” of the state by elites and private interests.”

These represent the last two dimensions, and are treated jointly here, as the EU is a well-established legal order, this is arguably of less pertinence. Even so, issues in the past with the integrity of the EU ETS registry may make this element relevant. The ability to exercise property rights over allowances in the EU ETS, as well as the ability for legal redress in EU and Member State courts regarding allocation procedures represents key examples of governance considerations under these dimensions.

Annex 3: EU principles of good governance

Openness (or transparency)

The openness principle concerns clear communication of decisions, but also of data and other evidence used to shape policy. In the context of this paper, transparency is also important for increasing predictability. Openness may be seen as a necessary condition for the formulation of sound policies and regulations, as stakeholders need to be well informed. As such, this principle also ties in with some of the World Bank governance dimensions such as voice and accountability, or regulatory quality.

Participation

This principle assesses who has input in various stages of policy and regulation design. It is about who (which institutions, or actors) are central in decision-making and regulatory processes. But it is also about stakeholder and citizen engagement. Inclusive participation can help build confidence and thereby also boosts the legitimacy of governance and policy frameworks.

Accountability (also linked to legitimacy)

This principle assesses who is responsible at various stages of the policy process. Sufficient accountability is necessary for legitimacy, while predictability in turn may also benefit from accountability. Knowing that there is due process in formulating policy, the possibility for legal redress or scrutiny of decision-making can engender confidence and stability.

Effectiveness

In the words of the EC, “policies must be effective and timely”, to which we may add that that cost-efficiency is also required. This principle is not dissimilar to the World Bank’s government effectiveness dimension, with a key difference being that this principle explicitly addresses the meso-level of policy.

In the EU, effectiveness is also bound by the principles of proportionality and subsidiarity, described below. The element of policies having “[to be] timely” relates to timing as a core principle of our ideal governance system, next to stability and predictability.

Coherence

In the context of a larger EU, with more competences, coordination of policies is crucial, also between different institutions and layers of government. Coherence should ensure not just consistent policies that are not mutually incompatible, but a coherent framework that, ideally, are mutually reinforcing. This principle of coherence represents another crucial element of a sound system for EU climate policy, owing to the many interactions between different actors and policies.



Proportionality and Subsidiarity

These are fundamental principles of EU law, explicitly enshrined in the Treaty on European Union. The principle of proportionality stipulates that measures should not go beyond what is necessary to reach objectives. The principle of subsidiarity means that decisions should be taken at the lowest possible level of governance where they can effectively be exercised.

Together with the principle of conferral, which states that the EU shall only act whenever the Treaties have conferred powers onto it, these principles represent a check on the competences and discretion of the EU institutions by demarcating when and how it can act.

Any successful system of EU governance invariably will need to take these principles into account. In fact, these principles may often have had a decisive impact of the design of policy frameworks and the implementation thereof. Examples include the Effort Sharing framework or the absence of an EU-wide cap on allowances in the EU ETS before the start of its third trading phase in 2013.

When it comes to the EU's competence to act, the EU is explicitly allowed to act in the field of environmental and climate policy. The Treaty on the Functioning of the European Union (TFEU) explicitly confers this power to the EU institutions. A section below will further explain this EU competence, as well as the roles different actors and institutions play in exercising this power.

Summary

There are elements in the above sets of indicators, dimensions, and principles from the OECD, World Bank, and EU that are recurring. In particular, input into decision-making processes, processes to ensure effectiveness, coherence and regulatory quality return as key concepts in good governance.

Whilst stability and predictability did not explicitly show up as core principles as such, some of the governance dimensions and principles may serve as conduits for stability and predictability.