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Analyzing the ambitions of renewable energy policy in the EU and its Member States

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Abstract: This paper investigates whether the EU's governance framework facilitates an ambitious transition to renewable energy sources (RES) in the EU and its Member States. First, we propose a comprehensive concept of ambition based on targets, target achievement and enforcement procedure. Second, we analyze empirical evidence regarding these aspects for RES policy in the EU. In particular, a thorough synthesis of the current state of RES target achievement throughout the EU is provided. Our analysis suggests that Member States' progress towards the 2020 RES targets is only modestly affected by the EU governance framework. Instead, national RES expansion trajectories seem to be strongly path-dependent – the ambition of national RES policy, then, depends primarily on factors internal to the Member States. In other words, frontrunners tend to remain frontrunners and laggards tend to remain laggards (for now). Meanwhile, frontrunner Member States' over-achievements enable the EU to close in on its 2020 target.

Keywords: ambition; energy policy; frontrunners; governance constraints; laggards; renewable energy sources

1. Introduction

The EU fosters its self-proclaimed status as a global leader in climate and energy policy. Indeed, after adopting the climate and energy package for 2030, already touted as an “ambitious legislative framework” (EU Commission 2019), the EU now aims at “stepping up Europe’s 2030 climate ambition” with further tightened goals (EU Commission 2020). Nevertheless, environmental NGOs regularly criticise the EU’s efforts as insufficient with respect to the Paris Agreement (Climate Action Network 2018, 2020, Ecologic and Climact 2019). Moreover, a cutting back of renewable energy policy on national level has been observed: For instance, Spain and the Czech Republic, previously frontrunners with respect to specific support policies for renewable energy sources (RES), later partly dismantled these policies (Gürtler et al. 2019). On what basis, then, should we assess whether current EU climate and energy policy counts as ambitious? And to what extent does the EU governance framework, with its dynamically evolving multi-level interactions, facilitate ambition?

Approaching this issue, one first encounters ambiguity about what constitutes “ambition”. Every operationalisation of ambition builds on a specific vantage point and corresponding value judgments. For instance, Burns et al. (2019), analyzing the effect of the financial crisis on EU environmental policy in general, ascertain “waning ambition” in the wake of the crisis but still judge the result as “relatively positive” (2019, p. 14) in that they find only “limited evidence of active dismantling of environmental policy post-crisis” (ibid., p. 15). So depending on what is considered the reference, the same empirical trend might entail negative or positive assessments of ambition – for instance, a Business as Usual reference scenario yields a more favorable evaluation of climate and energy policy than referring to a fixed objective such as zero carbon emissions in 2050.

Against this background of conceptual ambiguity we first structure “ambition” comprehensively to clarify its different facets. In particular, we suggest to include delivery as an aspect of ambition – this avoids cases of hollow ambition-in-name-only where targets are not backed up by genuine efforts to achieve them. Specifically, ambition ideally presupposes *targets*, *target achievement (instruments, outcomes)* and an *enforcement procedure* that consistently connects the former aspects. These ideal conditions of ambition have to be situated in the EU’s multilevel-framework. Here, we conceptualise the interaction between EU level and MS with a stylised qualitative toy model of a feedback cycle. On this basis, we analyze whether positive (fostering) or negative (restraining) feedbacks pertain between the EU and the national level.

Within the wide field of climate and energy policy, we focus on RES policies for three reasons. First, the transition from fossil energy to RES constitutes an essential precondition for broader decarbonisation. Without RES as an abundant clean substitute, the sustainable transformation of specific areas, such as the transport sector, remains beyond reach. Second, a mismatch exists between concrete RES projects being initiated and implemented overwhelmingly on (sub-)national levels, whereas energy markets are coupled on a European level – both technologically and economically. Third, and most importantly, this mismatch is reproduced as regards RES governance, with RES targets being agreed on EU level and RES policies being designed and implemented on Member State (MS) level – a “dealignment of responsibilities” (Veum and Bauknecht 2019). Hence, the challenge for the EU governance framework to facilitate an ambitious transition towards RES appears particularly pronounced.

This paper links several strands of literature. A first swath of literature from political science deals with the development of multi-level energy policy in the EU, generally emphasising the growing procedural stringency of the governance framework (e.g., Buergin 2015, Oberthuer 2019, Ringel

and Knodt 2018). A second strand of literature from both economics and political science reflects on the determinants of national ambition in climate and environmental policy – with contradictory results: some see (Liefferink et al. 2009, Tobin 2017), others reject (Avrami and Sprinz 2018, Lachapelle and Peterson 2013) an impact of the EU climate and energy framework (and/or other supranational target schemes). Third, legal studies (e.g., Jack 2013, Batory 2016, Ludwig 2019) critically evaluate the EU’s enforcement procedure.

From these literatures, it remains unclear whether national ambitions are substantially affected by the EU governance framework. This paper hopes to shed some light thereon as follows: Conceptually, it indicates ideal conditions for EU-MS interactions driving ambitions; absence of ideal conditions does not mean “no ambition” but that national ambitions are predominantly determined by other factors. Empirically, evidence is presented on RES target setting, on the MS’ current progress towards the 2020 goals, and on the EU’s infringement proceedings. In particular, we provide a thorough synthesis of the current state of RES target achievement throughout the EU. Here, the analysis suggests a modest impact of the EU governance framework on national RES ambitions that seem mostly path-dependent – with the EU-wide target being within reach even before any repercussions from the Covid-19 pandemic (such as projected lower electricity consumption in 2020).

The remainder of this paper is structured as follows: We set up the conceptual framework of ambition and introduce a stylised interaction model between MS-level and EU-level in Section 2. Subsequently, Section 3 summarizes methodology and data. In Section 4, we present empirical data on the ambition of RES targets and current progress towards target achievement; we then review the enforcement procedure with a focus on the EU’s infringement proceedings. In the final section 5 we discuss our findings.

2. Policy Ambition and the Feedback Cycle between MS and EU

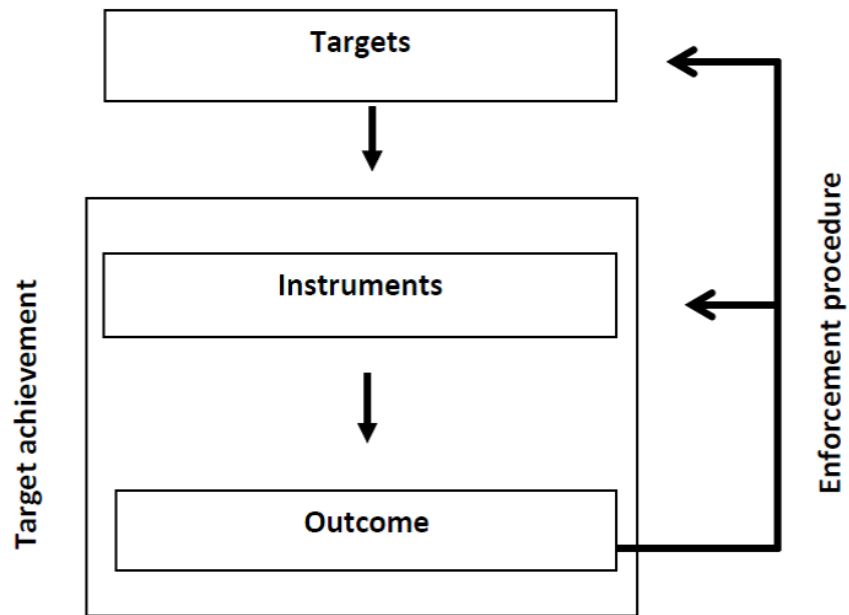
In a first approximation, RES policy ambition implies strong efforts to increase the share of RES at overall energy consumption – hence, we focus on *internal* ambition, as compared to the *external* ambition of explicitly aiming to attract followers (Liefferink and Wurzel 2017). We further substantiate the concept by taking the policy process from target setting to policy implementation into consideration (Strunz et al. 2018): Ambition thus combines meaningful targets, target achievement (instruments and outcomes) and an enforcement procedure (Figure 1a). The main advantage of such a broad concept is that it excludes empty cases of ambition-in-name-only. Specifically, we propose that a target is meaningless if it does not differ from Business as Usual (BAU) or, alternatively, if it is set very high but not backed up by adequate instrumentation. By implication, we here define an ambitious target as one that at the very least goes beyond BAU and that is complemented with effective instruments to achieve the target; in contrast, lofty targets not underpinned by instrumentation should be regarded as irrelevant. Ideally, enforcement procedures ensure that targets are met by monitoring outcomes and adjusting instruments accordingly. In other words, Figure 1a) summarises the ideal of an ambitious policy process.

In the case at hand, this process has to be situated within the EU’s RES governance. Here, a typical agency problem results from the discrepancy between target structure being negotiated at EU level and RES policies being primarily determined and implemented on the national level (Veum and Bauknecht 2019). Thus, the capacity of EU RES governance “to make and enforce rules” (Fukuyama 2013, p. 350) in order to deliver on its RES targets needs to be investigated more closely.

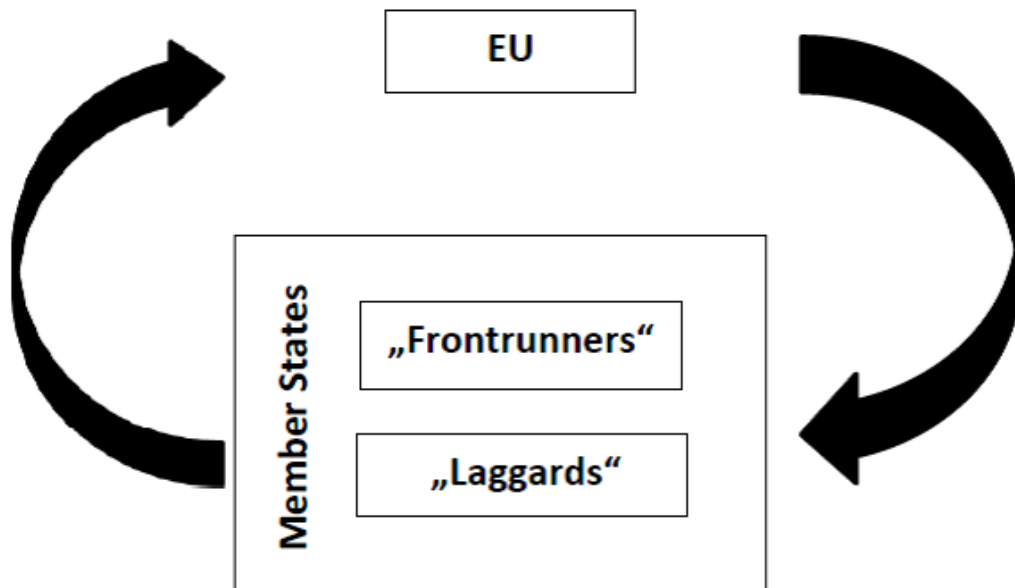
Generally, the interactions between EU and MS level may be interpreted as an iterative feedback cycle stylised in Figure 1b. While this also draws on the policy feedback literature (e.g., Skogstad

2017, Skjærseth 2018), our interest concerns the dynamic of EU-level affecting MS-level and vice versa (as compared to the specific feedback of adopted EU policies on actors' preferences often analysed in this literature, e.g., Jordan and Matt 2014).

Figure 1: Conceptual framework (source: authors)



a) Components of an ambitious policy process



b) Stylised feedback cycle between EU-level and MS-level

The left arrow (Figure 1b) represents an intergovernmental perspective on the EU’s energy policy framework with MS as crucial actors – gradual Europeanisation notwithstanding. MS’ continued veto power is assured by Article 192 (2)(c) TFEU stipulating unanimous Council decisions for “measures significantly affecting a Member State's choice between different energy sources and the general structure of its energy supply”. In addition, policy uploading by MS co-determines the EU policy agenda (Börzel 2008). And via EU primary law, any significant boost of the Commission’s enforcement capabilities necessitates MS’ consent.

The right arrow represents neofunctionalist arguments on supranational activism and spill-over effects as drivers of European integration (c.f. Niemann 2017). The toy model does not explicitly differentiate between EU institutions, but, as further detailed below, the Commission is clearly the essential driver of harmonizing RES policy across the EU (e.g., Strunz et al. 2019). Thus, the right arrow highlights integration through the Commission monitoring MS’ progress, while MS implement directives and download policy recommendations. As our focus lies on the interaction

between governance levels, the feedback cycle abstracts from recently adopted EU level instruments such as the EU renewable energy financing mechanism.

Overall, the stylised feedback cycle could give rise to self-reinforcing or self-undermining processes, that is, positive or negative feedbacks on EU-wide ambition (cf. Skogard 2017). What conditions engender a positive or negative feedback cycle? In order to address this question, it appears useful to distinguish MS broadly into frontrunners and laggards. Certainly, this strongly simplifies a heterogeneous preference landscape (e.g., Burns et al. 2019, p. 11). For the purposes of our stylised feedback model, however, a very rough characterization of “frontrunner” as a MS that pushes RES deployment and “laggard” as a MS that rather delays RES deployment seems adequate – whereas a precise delineation into two (or more) categories would arguably necessitate a multi-criteria evaluation (such as the Climate Change Performance Index, see Germanwatch 2019) and might invite prolonged discussions about how to categorize some MS at a given point in time. Instead, the rough characterization suits our analytical focus: The relative impact of frontrunners compared to laggards on EU level decisions determines whether increasing harmonisation yields more or less ambition. Any frontrunner/laggard categorization should be made ex-post only. As argued below, most frontrunners and laggards appear to maintain their status over time; yet, MS may also change over time (e.g., Hoppe and van Bueren 2017 on the Netherlands). Also, note that speaking of frontrunners instead of leaders (who explicitly aim to attract followers, see Liefferink and Wurzel 2017, Wurzel et al. 2019) or pioneers (who are purely internally motivated) indicates that our interest here lies exclusively on who prevails in controlling the ambition level, rather than on distinguishing MS’ motivations.

Under what conditions, then, does Figure 1b imply a positive feedback? First, consider the left arrow. Frontrunners might set the target agenda, upload effective policies and consequently ratchet

up overall ambition (cf. Börzel 2002). Indeed, some attest the EU an “in-built affinity towards ever-ambitious climate and energy policy” (cf. Ćetković and Buzogány 2019, p. 126). Moreover, for the right arrow to denote a positive feedback on ambition, two aspects are necessary: i) EU regulations result in MS employing policy instruments adequate to reaching the targets; ii) enforcement procedures push all MS, in particular laggards, towards fulfilling their commitments (as opposed to foot-dragging and evasive actions). In other words, a positive right hand side implies that EU integration transforms laggards into frontrunners, without holding the latter back.

Conversely, the left-hand side implies a “retardation” effect in case the laggards drag ambition down to the lowest common denominator (Skjærseth 2018, p. 502f.). The right-hand side indicates a negative feedback if regulations and policy recommendations are inadequate or counterproductive, thereby inhibiting frontrunners on the national level.

Based on the above conceptualisation of ambition and the stylised feedback model, we now suggest ideal conditions for the EU governance framework entailing ambitious RES policies:

- (1) *Targets*: Meaningful (at least beyond BAU) and legally binding MS targets are set on EU level.
- (2) *Instruments*: The EU governance framework induces the MS to employ adequate instruments.
- (3) *Outcomes*: MS targets/instruments translate into target achievement.
- (4) *Enforcement procedure*: The EU Commission can effectively sanction MS if outcomes suggest MS miss their targets.

These conditions might be understood as Weberian ideal types, serving as reference points for discussing our lead question: Does the EU governance framework facilitate ambitious RES policy? We now introduce our approach to analyse (1)-(4) in more detail.

3. Methods and Data

The time frame of our analysis starts with the adoption of the 2001 EU Renewable Electricity Directive, focusses on the period leading up to the 2020 goals and closes with the recent launch of the 2030 climate and energy policy framework. Note that the time periods covered by the 2020 framework and the 2030 framework (i.e., the post-2020 period) enter the analysis in a differentiated way: specifically, for analysing targets (ideal condition (1), cf. Section 4.1) and the enforcement procedure (ideal condition (4), cf. Section 4.4), comparisons between the pre-2020 period and the new 2030 framework are essential. By contrast, investigating instruments (ideal condition (2), cf. Section 4.2) and outcomes (ideal condition (3), cf. Section 4.3) mostly or exclusively (outcomes) deals with ex-post evaluation; in these cases, we can only hint at possible future developments.

Methodologically, the ideal conditions are investigated by a combination of qualitative and quantitative methods. Since measuring policy ambition or stringency quantitatively is not robust with respect to indicator choice (Galeotti et al. 2020), we abstain from quantifying to what degree these ideal conditions are matched in reality (as in: “ideal condition (2) is met by 74.5 %”). Instead, comparing abstract ideal types and empirical reality involves judgements that need to be undergirded argumentatively. Hence, we rely on desktop-based literature analysis for the qualitative investigation of ideal conditions (1), (2) and (4). Particularly, (1) and (2) are inherently based on evaluative judgments about interactions between legal, political and economic variables. Such judgments might differ, for instance, with the researcher’s disciplinary background. Therefore, we draw on literature from different disciplines (political science, legal studies,

economics) as well as on assessments by NGOs to substantiate our own evaluation of the EU-MS feedback cycle with respect to targets and instruments.

As regards ideal condition (3), we investigate empirical data, where data on RES shares is provided by Eurostat, data on RES targets is taken from EEA (2019). Note that the analysis inevitably also contains an evaluative element via data interpretation and contextualization.

Finally, we approach ideal condition (4) by summarizing literature from both legal studies, political science and economics. In principle, future research might also benefit from analysing data on whether (and how) the EU will sanction MS that fail to meet their 2020 RES targets. Retrospectively, however, as the 2010 RES targets were only indicative, there are no RES-target-related infringement proceedings to be investigated. Thus, we synthesize the discussion on the overall EU enforcement procedure and provisions of the EU's climate and energy framework for 2030 more specifically.

4. Empirical Analysis

4.1 Targets: Ambition of RES Targets

Ideally, targets go beyond BAU and are legally binding. Do RES targets in the EU since the passage of the 2001 Renewable Electricity Directive (2001/77/EC) fulfill these criteria? Historically, the EU firmly set RES on the agenda for the first time in several MS. This particularly holds for laggards, that is, MS that did not traditionally have strong geographical or ideological inclinations to deploy RES. For instance, MS joining in 2004 *inter alia* set RES targets when implementing the legal requirements for accession (Jørgens et al. 2017). Specifically, the *Renewable Electricity Directive* 2001/77/EC had introduced an EU-wide target for electricity from renewable sources by 2010 and required MS to indicate individual targets for the electricity sector. Both the overall and

the MS targets were indicative only. The 2020 framework went two steps further. First, it broadened the scope in that the 20%-target refers to the share of RES at overall energy consumption in 2020. Second, the MS targets for 2020 are legally binding.

The 2030 framework now stipulates a target share of 32% RES share at overall energy consumption in the EU for 2030. Depending on the yardstick, this target may appear as either ambitious or unambitious. It has been judged unambitious, in that it “largely falls short to comply with the Paris agreement objectives” (Ecologic and Climact 2019, p. 19). Then again, comparing past and future trajectories, the 2030 target implies higher average annual increases in RES shares than those achieved annually since 2005 (EEA 2019, p. 40). So the 2030 target requires more than what has happened in the past (and would thus conform to the “at least beyond BAU”-specification of condition 1) above) but less than what would be necessary from a full-decarbonisation-by-2050 perspective.

As regards the MS level, the 2030 framework displays lower ambition: the EU target is not differentiated into legally binding MS targets. Instead, MS have to provide and update so-called integrated National Energy and Climate Plans (NECPs). As part of these NECPs, MS need to outline their contributions to the overall RES target. Essentially, this means that RES targets on MS level are again non-binding. In section 4.3 we will further discuss the stringency of the 2030 framework. With respect to the RES targets, the important point here is that the decrease in ambition/legal status mostly resulted from the laggards’ veto power via the unanimity principle. In particular, Polish intransigency inhibited a binding 2030 RES target during Council meetings in 2014 (Skjærseth 2018), leading Jankowska and Ancygier (2017, p. 192) to coin the term “Polonisation” in response. Yet also one important actor on the EU-level, the energy

Commissioner, contributed to the target's non-bindingness by acting as a "brakeman" (Buergin 2015).

Let us now look at the Commission's influence on the NECPs and the frontrunner/laggard divide. MS were to provide their first draft NECPs at the end of 2018 (seven MS missed the first deadline¹) and to submit final NECPs by the end of 2019. Fifteen final NECPs were submitted by 1st May 2020 (CAN Europe 2020), the latecomers arriving by September 2020. Assessments of the final NECPs again differ. The Commission projects that full implementation of the plans would lead Europe to overachieve its RES target (achieving an RES share of 33.1%-33.7% as compared to the 32% goal, EU Commission 2020b, p. 1f.). At the same time, however, the Commission also indicates that a tightened emission reductions goal of -55% by 2030 would necessitate a higher RES share of 38%-40% at gross final energy consumption (EU Commission 2020a). What is more, NGO assessments of the NECPs conclude that "many of the renewable energy contributions are not ambitious enough to be in line with the Paris Agreement objectives" (CAN Europe 2020, p. 7, Ecologic and Climact 2019). In short, if the emission reduction goal is tightened, MS' RES contributions would need to step up considerably as well.

Is there evidence that the Commission succeeded in ramping up MS' pledged contributions from draft NECPs to their final versions? The Commission (2019) compared MS' pledged increases in RES share from 2017 to 2030 in the draft NECPs with its own calculation about what each MS *should* contribute to match the overall EU target of 32%.² Four MS exactly met the Commission's calculation, nine MS pledged more, and fifteen MS displayed ambition gaps. Consequently, the

¹ <https://www.euractiv.com/section/climate-strategy-2050/news/seven-eu-nations-miss-climate-and-energy-plan-deadline/>

² The Commission uses the formula as laid down in Regulation (EU) 2018/1999, Annex II, according to which each MS' contribution is composed of five parts: a) the MS' target for 2020, b) a flat rate contribution, c) a GDP-per-capita based contribution, d) a potential-based contribution, e) a contribution reflecting the interconnection level of the MS.

Commission advised these MS to close the gaps. While some MS did raise their pledges in the final NECPs, at least six MS still fall short of the Commission's recommendation (CAN Europe 2020, p. 45). Strikingly, it is mostly MS with comparatively low RES shares in 2017 that still display ambition gaps. For instance, final NECPs for Poland, Belgium, Hungary and Malta (all in the “bottom ten” as regards RES shares) still indicate ambition gaps; in fact, Belgium *decreased* its projected RES contribution from draft NECP to final NECP.³ By contrast, it is often MS with comparatively high RES shares in 2017, such as Denmark or Lithuania, that pledge significantly higher contributions by 2030 than those calculated by the Commission. Overall, this pattern does not suggest a closing of the divide between laggards and frontrunners but, if anything, a deepening.

Let us summarise in terms of the feedback cycle from Figure 1b: On the right hand side, the initial impact from EU integration on MS was surely positive, in particular as regards the central and eastern European MS, several of which might have been (or might still be) considered as laggards. So the 2020 framework with binding and meaningful targets on MS level can be considered ambitious. Regarding the 2030 framework, an important question is whether ambition gaps will be closed. In particular, will increased stringency of the governance mechanism (see Section 4.4) suffice to compensate for the left-hand side of the feedback cycle having turned negative in the run-up to the 2030 framework?

4.2 Instruments: The Evolution of RES support in the EU

The 2000s saw a proliferation of support instruments for RES in the EU. While in 2000 ten MS had implemented major support instruments for RES, by 2007 all 27 MS, including the new ones, had instruments such as a feed-in tariff, a feed-in premium or quota scheme with tradeable green

³ For an overview see CAN Europe (2020), all final NECPs as well as the Commission's assessment thereof are available online at https://ec.europa.eu/info/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-energy-and-climate-plans_en

certificates in place (Kitzing et al. 2012, p. 196). As with the RES targets, the impact of EU integration on support instruments appears to have been strongest in the MS acceding in 2004/2008, where the 2001 and 2009 RES directives played an “important role in the first stages of RES-E promotion” (Jörgens et al. 2017, p. 293). Thus, we may record a positive influence from the EU level on laggards by obliging them to set up explicit support instruments.

That said, this positive influence seems to have partly petered out over time in that case studies on typical laggards often depict a boom-and-bust pattern (Davidescu et al. 2018, p. 611). For instance, a “failure of the spirit of the EU RES directive” is reported to take hold in Bulgaria (Hiteva and Maltby 2017, p. 234) and “shallow institutionalisation and some innovative ways of bending the rules” in Romania (Davidescu 2017, p. 218). Similarly, Poland is criticised for “superficial implementation” of the 2009 Renewable Energy Directive “without any deeper compliance” (Jankowska and Ancygier 2017, p. 198). The structural reasons behind this development relate to diverse internal issues, such as grid overload due to the ramp-up of RES deployment or the absence of advocacy coalitions that would lobby for RES support on the national level. The result is “short-term compliance, but not substantive change” (Davidescu et al. 2018, p. 621). Put differently, the overall EU impact on laggards – while palpable in the short term – causes no catalysis, no transformation into frontrunners.

In comparison, the direct adaptation pressure for MS that had already RES support schemes in place was generally weaker. Early on, the EU Commission tried to nudge MS to implement a quota scheme with tradable certificates for electricity from RES. The Commission reasoned that such an instrument would not only be cost-effective from an economic perspective but also easily amenable to EU-wide harmonisation. Repeated efforts by the Commission to create such a harmonised quota scheme were, however, blocked by MS with already operating RES instruments (Lauber and

Schenner 2011). In particular, this concerns MS with well-functioning feed-in tariff schemes such as Denmark and Germany that might be considered as prototypical frontrunners in the 2000s and that “tried hard to avoid any EU-wide harmonisation of support schemes” (Jörgens et al. 2017, p. 293). As a result, RES instruments converged toward feed-in tariff schemes at the end of the 2000s (Strunz et al. 2018).

Intriguingly, the frontrunners’ blockade of an EU-wide quota scheme might be interpreted as positively fostering the ambition of RES support: The comparative literature on RES instruments rather conclusively reports that feed-in tariffs more effectively increase the deployment of RES than quotas with tradable certificate schemes (e.g., Haas et al. 2011, del Río and Bleda 2012). In terms of Figure 1b, therefore, the frontrunners blocking EU integration of RES instruments *raised* ambition compared to a scenario with an EU-wide quota scheme. This result resembles policy uploading by frontrunners as known from other instances of EU environmental policy (Börzel 2008). To this, one might add that from a normative meta-perspective, premature policy harmonisation is not necessarily beneficial in that the theory of fiscal federalism emphasises the merits of decentralised experimentation as a “laboratory” (Gawel and Strunz 2019).

After the attempts to nudge MS towards a quota scheme had failed, the Commission somewhat shifted its course while sticking to its overall agenda of aligning energy policy with the EU internal market. In the 2010s, the Commission promoted tender schemes (i.e., auctioning of RES production quantities to the least costly producer) as the most cost-effective RES instrument. Indeed, the Commission’s “Guidelines on State aid for environmental protection and energy 2014-2020” initiated a shift towards tender schemes around the EU and generally contributed to their global spread (e.g., Fitch-Roy et al. 2019, McGowan 2020).

Whether and how tender schemes affect the effectivity of RES support is still a matter of debate. The Commission argues that tendering facilitates RES deployment at least cost, thereby freeing up scarce resources for other investments in the sustainability transition. By contrast, some critics fear disadvantages from tender schemes for potential small bidders (such as community cooperatives) and point to past cases where auctions entailed poor realisation rates – a critique that the European Environmental Agency partly concedes (EEA 2018, p. 33). The scientific literature, in turn, suggests that carefully designed tenders need not necessarily engender such negative effects (e.g., del Río 2017). Moreover, the Commission intends to bolster cross-border cooperation on RES via the opening of national tenders for other MS. Specifically, the Commission suggests indicative shares of min. 5 % cross-border projects (of the tendered amount) from 2023 to 2026 and min. 10 % from 2027 to 2030. So far, cross-border tenders have been limited (e.g., the joint PV auction between Denmark and Germany) but the Commission considers a mandatory opening-up of national schemes.

Relating to the feedback model, the initial positive impact from EU regulation on laggards on the right hand side appears to have subsequently weakened. Furthermore, the impact on frontrunners might well have been negative if they had not rejected the Commission's efforts to install an EU-wide quota scheme. By implication, the frontrunners' blockade can be interpreted as maintaining or even increasing overall ambition. As regards the ongoing switch towards auctions and more market-based RES instrument design, evaluations will vary according to whether the cost-effectiveness rationale is accepted or not.

4.3 Outcomes: Progress towards the 2020 RES Targets

In the following, we look at the current progress towards the 2020 RES targets. The EU seemed to be closing in on the 20%-target (EEA 2019), without accounting for decreasing energy

consumption as a side effect of the Covid-19 induced recession in 2020. As shown in the following, this goal achievement on the average results from an over-performance by some MS and delivery gaps by others.

Figure 2) plots the MS' increases in RES shares from 2008 to 2018 against the targeted increases by 2020. The grey triangle represents the target area: The upper line implies that the 2020 target is exactly met, the bottom line denotes proportional progress in 2018 (i.e., 5/6 of the 2008-2020 period). Consequently, all MS that lie below the triangle face a delivery gap, whereas MS above the triangle in 2018 have already exceeded their 2020 target. The dashed trend line has a positive slope – but markedly lower so than the triangle's bottom line. Thus, the (on paper) more ambitious MS tend to underperform (w.r.t. their targeted increase) while the less ambitious MS tend to overperform. In particular, some MS with very high targeted increases fall short of their pledges by 2018 (e.g., France, the Netherlands). Overall, a regression analysis yields a correlation coefficient of 0.255 which is *not* statistically significant at the 5%-level (p-value: 0.182). So we note a weak positive correlation but cannot reject the null hypothesis that targeted increases in RES shares are unrelated to actual increases.

By comparison, Figure 3a) maps the increases in RES shares by 2018 against the MS' initial RES shares in 2008. These variables are stronger correlated with a coefficient of 0.418 that is also statistically significant at the 5%-level (p-value: 0.0239). This suggests some form of path-dependency: MS with higher “initial” RES shares also tend to deliver higher increases in RES shares. Visually, this becomes even clearer in Figure 3b), which arranges the same data in a slightly different way: it plots MS' delivery gaps (calculated as the difference between actual increase by the end of 2018 and targeted increase in RES shares up to 2020) in relation to their initial RES shares in 2008. While those MS that have met or even substantially exceeded their 2020 targets in

2018, such as Sweden, Croatia and Denmark, already had comparatively high initial shares, those MS with substantial delivery gaps still to close, such as Ireland or the Netherlands, rather started out from comparatively low initial shares in 2008.

Identifying the causal mechanisms behind individual MS' RES trajectories largely lies beyond the scope of this paper. We may, however, indicate some factors likely contributing to the apparent path-dependencies.

First, continued increases in RES shares possibly reflect public preferences for ambitious climate mitigation. Denmark and Sweden, the states with the highest increases in RES shares from 2008-2018 are the only MS in which a majority named climate change as the single most important global issue (Eurobarometer 2017, p. 8). Second, frontrunners may establish self-reinforcing politico-economic dynamics: Early RES adoption creates interest groups lobbying for continued RES-support, thereby facilitating further increases in RES shares. This economic 'push'-factor is complemented by a political 'pull' from energy transition narratives superseding fossil-nuclear narratives (Strunz et al. 2016). Third, the boom-and-bust pattern in laggard MS has been related to socio-technical barriers, such as limited administrative capacity causing insufficient investment in grid infrastructure (Davidescu et al. 2018): In fact, Hungary and Romania reached their targets already in 2011, respectively 2014, but did exhibit slightly lower RES shares in 2018. Finally, other aspects, such as geographical predisposition and economies of scale may add to the above path-dependencies.

We suppose, however, that geographical factors mainly affect the specific choice of RES technologies to be deployed but that they do *not* exert a strong influence on national ambition in the long run: to see this, compare, Austria and Sweden – both countries had very high initial RES shares due to substantial hydropower capacities. Yet, while Sweden continues to be a frontrunner

by ramping up windpower capacities, Austria will probably meet its RES target rather narrowly. As one possible reason for this discrepancy, observe that Austria's overall stance on climate policy has been evaluated as "surprisingly unambitious" (Tobin 2017). Generally, the mix of RES technologies can be expected to substantially alter in many countries, following the maturing of technologies and the transition from RES-niche-support to energy markets becoming increasingly dominated by RES (Miller et al. 2013). In light of all this, the correlation depicted in Figure 3a is even more striking: Notwithstanding a common EU governance framework and rapid technological progress with RES leaving the niche status in many countries, frontrunners appear to remain frontrunners and laggards to remain laggards – even if the latter may catch up in the long run (cf. Strunz et al. 2018).

In sum, the empirical evidence in our view suggests that the MS' EU targets only weakly contribute to the actually observed national RES trajectories that seem to be path dependent. This result also aligns with similar findings by Lachapelle and Peterson (2013) for the case of emission reductions.

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Figure 2: MS' increases in RES shares 2008-2018 in relation to targeted increases by 2020

(Data Source: EEA 2019, Eurostat; own illustration)

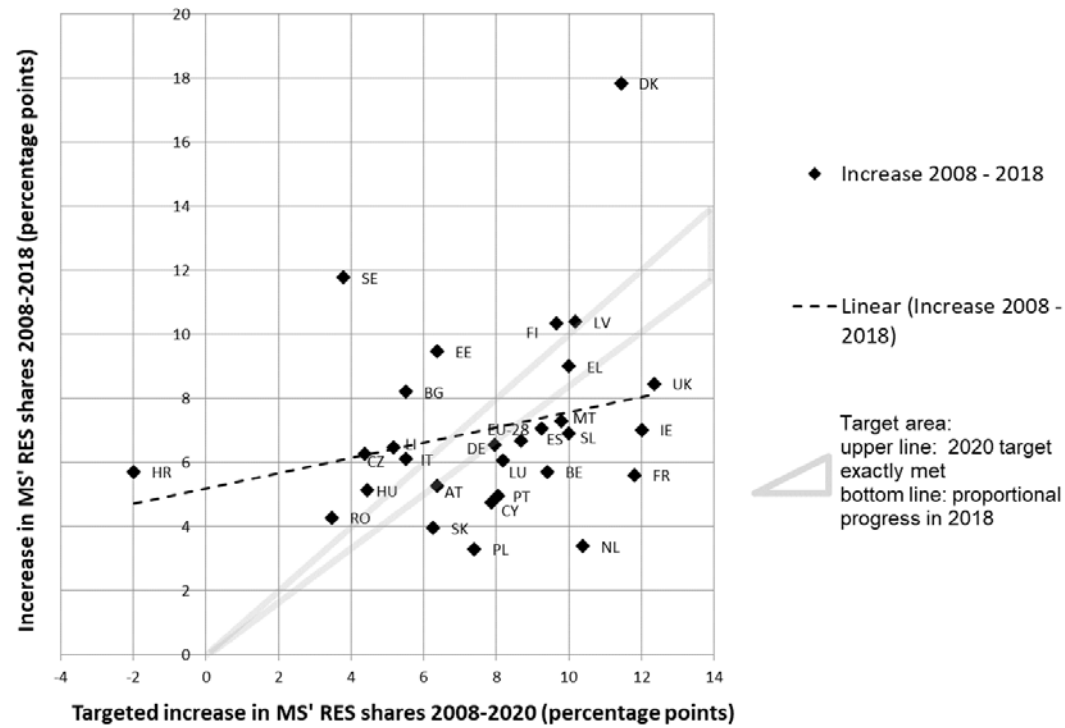
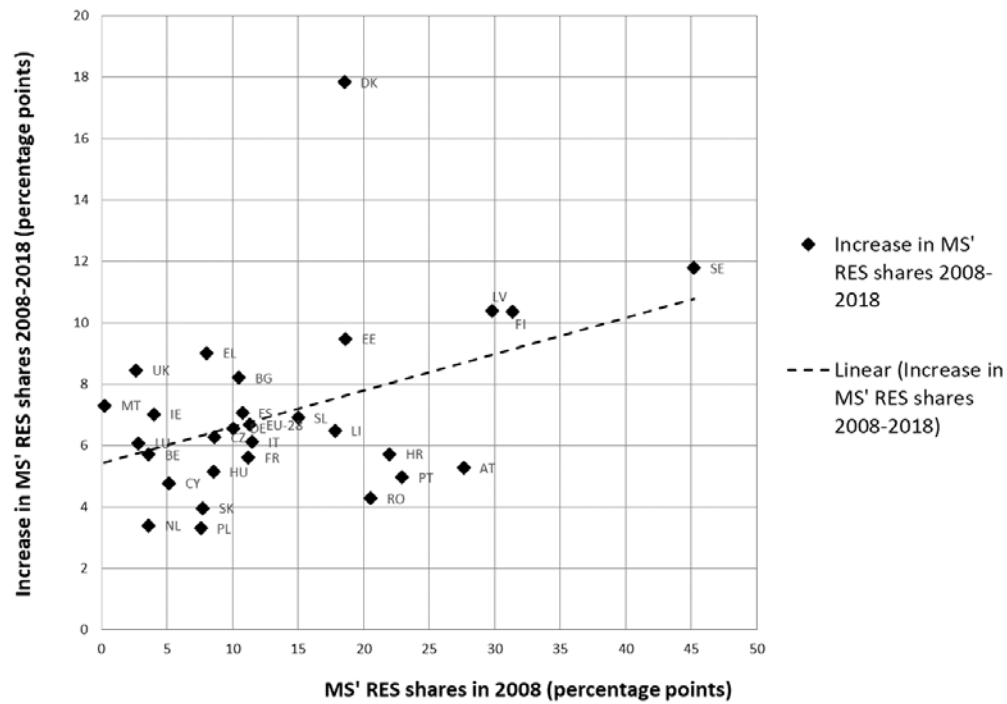
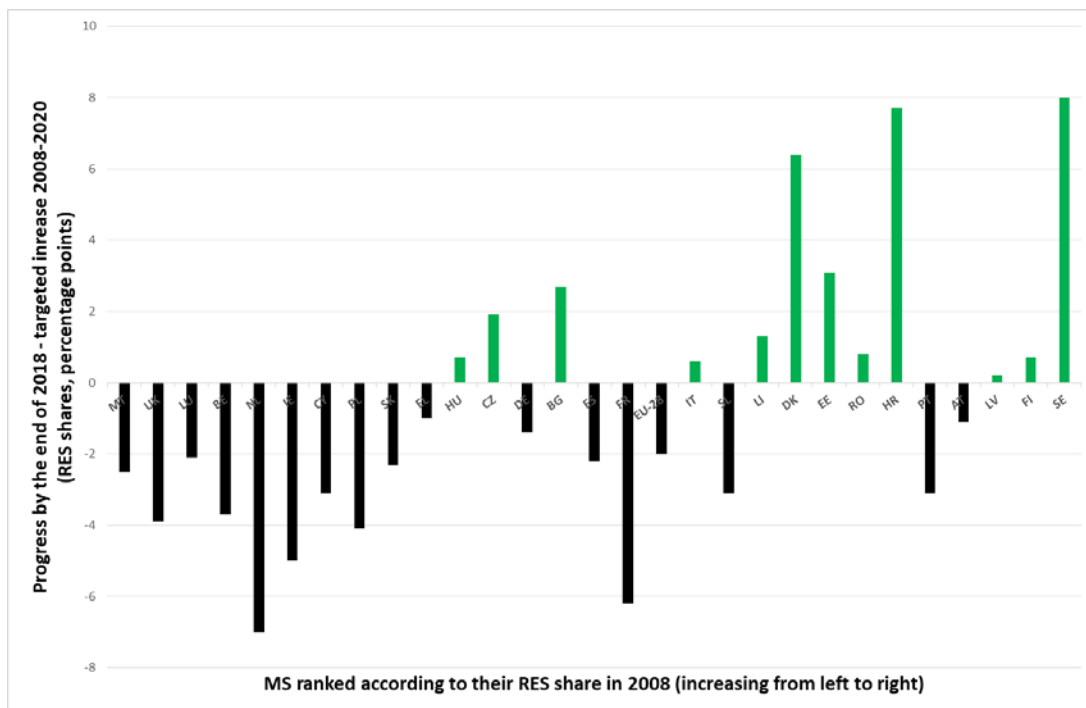


Figure 3: Path dependencies in MS's RES deployment trajectories (Data Source: EEA 2019, Eurostat; own illustration)



a) MS' increases in RES shares 2008-2018 in relation to initial shares in 2008



b) MS' delivery gaps w.r.t. the 2020 target in relation to initial shares in 2008

4.4 Enforcement Procedure

Ideally, an effective enforcement procedure ensures compliance via continuous monitoring and combinations of “carrots and sticks”. As indicated above, the EU’s 2030 climate and energy framework requests the MS to regularly report their progress to the Commission. Indeed, some argue that these provisions substantially strengthen enforcement. For instance, Ringel and Knodt (2018) emphasise that the Commission may take corrective action in the form of additional EU legislation if MS under-perform. Similarly, Oberthuer (2019; p. 22) maintains that the MS’ strengthened procedural obligations balance the abandonment of binding RES targets. However, during the legislative process the governance regulation’s wording has been substantially downgraded at the expense of the Commission’s position: The initial formulation read that MS “shall take the utmost concern of any recommendations by the Commission” and thus

recommendations by the Commission might have had a legally binding character (Ringel and Knodt 2018; p. 215). Yet the finally published version only requires MS to take the Commission's recommendations into "due account" (Regulation (EU) 2018/1999, Art 9(3), Art 34(2a)). This explicitly non-binding formulation implies that "the Commission's ability to challenge pledged contributions is weak" and that, therefore, MS "will have many ways to avoid strong commitments (Ludwig 2019, p. 91). It has been questioned, therefore, whether the EU's current soft governance approach suffices to ensure fulfillment of the RES targets in 2030 (Veum and Bauknecht 2019). While stringency of the energy policy enforcement procedures may be incrementally increasing, the picture remains ambivalent. Consequently, it seems useful to look more closely at the "stick" in the Commission's toolbox – the infringement proceedings as a sanctioning device if MS consistently miss their targets.

Borrowing the Commission's own words, the infringement process "in itself is a means to enter into a problem-solving dialogue with a Member State"⁴. That is, the proceedings represent a "compliance pyramid" (Koops 2014, p. 152) of gradually increasing pressure aimed at consensual agreement – only a fraction of cases ends up at the EU Court of Justice (EUCJ). The ultima ratio of the infringement proceedings consists in financial penalties that may be imposed by the EUCJ if it detects a breach of law. Yet the literature seems to concur that these fines do not unfold a deterrence effect: Empirical analyses of past cases that ended with a financial sanction show that in about half of the cases, the MS did not seem to comply after having paid the fine, which might, therefore, be interpreted as "a kind of financially negligible 'infringement tax'" (Falkner 2016, p. 42) that enables MS to "purchase continued noncompliance" (Jack 2013, p. 421). In consequence, the Commission resorts to more informal and softer efforts as well as positive incentives in a

⁴ http://ec.europa.eu/internal_market/scoreboard/performance_by_governance_tool/infringements/index_en.htm

parallel fashion so as to reach conciliatory results – and also not to erode its own authority. The Commission may accept symbolic compliance in order not to lose its face through open non-compliance by the MS in question (Batory 2016, p. 696). The upshot: even the Commission’s “stick” is pliable.

In light of this, MS that do not meet their legally binding 2020 RES targets have little to fear from the infringement proceedings. After receiving a formal letter of notice by the Commission, MS might first justify their achievements, for instance by pointing to policies implemented or aggravating economic circumstances; and even if no mutual agreement can be found and financial penalties should eventually be inflicted by the EUCJ, these penalties are unlikely to significantly impact upon the MS’ decisions. Likewise, an econometric analysis finds that infringement proceedings did not significantly affect actual MS’ emission trajectories from 2008 to 2012 (Avrami and Sprinz 2018). In sum, even though the Commission incrementally acquires more leverage vis-à-vis the MS with respect to energy policy (Maltby 2013, Strunz et al. 2019), it lacks an effective compliance tool (Kochenev and Pech 2015).

5. Conclusion and policy implications

Above, we put forward ideal conditions for the EU governance framework entailing ambitious RES policies:

- (1) *Targets*: Meaningful (at least beyond BAU) and legally binding MS targets are set on EU level.
- (2) *Instruments*: The EU governance framework induces the MS to employ adequate instruments.
- (3) *Outcomes*: MS targets/instruments translate into target achievement.

(4) *Enforcement procedure:* The EU Commission can effectively sanction MS if outcomes suggest MS miss their targets.

Based on the above analysis, we may conclude as follows. (1) Albeit the EU RES target for 2030 goes beyond extrapolating past developments, some MS' pledged contributions display ambition gaps (and the overall RES target would need to be revised upwards in line with the recently tightened emissions reduction target). Moreover, unlike the legally binding MS' 2020 targets, the 2030 framework requires MS only to indicate non-binding contributions. (2) The EU energy governance framework induces MS to act and encourages horizontal processes of policy diffusion. However, direct effects of EU regulation on MS' RES support have been short-lived if not outright negative (the EU Commission's push for a harmonised quota scheme). (3) MS' trajectories seem to be path-dependent and only weakly affected by the EU targets. (4) The 2030 framework increases procedural obligations for the MS but the Commission lacks an effective compliance mechanism. Overall, the RES target setting stage seems closest to the ideal condition, while the enforcement procedure seems furthest.

Let us relate these results to the feedback cycle (Figure 1b). On the left-hand side, the unanimity principle prevents a consistently ambitious structure of binding MS targets and credible enforcement procedures. That is, frontrunners do not routinely prevail over laggards in negotiating the governance framework. On the right-hand side, harmonisation on EU-level does not necessarily yield more ambitious RES policies and a weak enforcement procedure means that delivery gaps are not thoroughly sanctioned. Overall, therefore, substantial grounds for assuming a positive feedback cycle from the governance framework on RES ambition are found wanting. Thus, we cannot confirm the clearly positive impact from the EU on national ambitions posited by Tobin (2017). Then again, we do not find conclusive evidence for a negative feedback loop either. Put

differently, neither systematic transformation of laggards into frontrunners, nor dragging down of frontrunners has occurred.

Does the EU governance framework, then, facilitate ambitious RES policy? First, at the very least, frontrunners' ambitions, whose over-achievements compensate for the delivery gaps of laggards, have not been curbed. As our thorough synthesis of the current state of RES target achievement has shown, the EU-average target for 2020 is likely to be met. Second, the limitations of the governance framework may yield positive side-effects for climate and energy ambition as well: If frontrunners had not defended feed-in tariffs in the early 2000s, RES shares might subsequently have grown more slowly. Third, the EU Commission demonstrates perseverance and ingenuity in pursuing its agenda with limited competencies: After a quota scheme was blocked by frontrunner resistance, the Commission's switch to promoting tender schemes proved successful. In sum, while energy policy governance in the EU may fall short of ideal conditions, this does not preclude ambition on the average.

Moreover, positive feedbacks may develop in the long-run: On the feedback cycle's left-hand side, laggards do not vote as a homogeneous, coordinated block but rearrange in changing, topic-specific coalitions (Ćetković and Buzogány 2019). Consequently, windows of opportunity for ramping up the ambition of target and compliance structures may arise. On the right-hand side, EU integration might incrementally increase laggards' ambitions: As the policy feedback literature notes (e.g., Skjærseth 2018), preferences within MS may change over time, for instance via internal balances of power gradually shifting towards advocates of energy transition policies. More hypothetically still, if infringement proceedings were to include stronger sanctions, such as withholding of subsidies from the EU's structural and investment funds, non-compliance with climate and energy targets would potentially become much more costly.

The present analysis connects to other trends in the EU as well. First, consider increasing regional divisions that may amplify the challenge of delivering ambitious RES policy: in particular, regional diversity has grown due to successive EU enlargements and as a further result of the financial crisis (Skovgaard 2014). If the divide between proponents and opponents of ambitious climate and energy policy further deepens, the prospects for more ambition seem to deteriorate (whereas problem acuteness steadily rises). Second, consider legitimacy challenges related to the EU's predominant reliance on output legitimacy. Here, our analysis suggests a mitigating effect: EU-wide, RES policy output is, by and large, on track. Furthermore, to the extent that the observed diversity of MS' outcomes (delivery gaps on the one, overachievement on the other hand) follows public preferences, this pattern might be regarded as more legitimate than one where all MS exactly meet their targets. Also, weakening ambition of RES policy after the financial crisis could mainly reflect changing public priorities (Scruggs and Benegal 2012). Thus, RES policy in the EU rather moderates legitimacy challenges.

As any conceptual framework, the stylised feedback model is limited. Classifying MS into two types abstracts from dynamics and heterogeneity between and within subgroups. A more complex setup that also addresses interactions between MS might elucidate horizontal policy diffusion as a driver of ambition; by comparison, accounting for heterogeneity, such as from increasingly diverse national ambitions, might rather stress the obstacles for more ambition on EU level. Moreover, the toy model is closest to a liberal intergovernmentalist view, the functionalist aspects notwithstanding. For analyzing other empirical cases, where policies are predominantly designed on EU level, awarding MS a less prominent position in the conceptual framework might be more adequate; the same goes for a possible future with further increasing EU-institutionalisation of energy policy design. For instance, the EU renewable energy financing mechanism adopted in late 2020 might be one step in this direction. We may note, however, that a recent analysis of

mechanisms to enhance the ambition of the EU Emissions Trading Scheme – as the primary EU-wide climate policy instrument – also emphasises cleavages between MS as an essential barrier towards more ambition on EU-level (Dorsch et al. 2019).

In conclusion, the main conceptual contribution of this paper consists in the comprehensive syntax of ambition. This broad concept serves to exclude instances of ambition-in-name-only and lends itself to formulate ideal conditions adaptable to various contexts. In this way, the conceptual framework may also inform future research, on RES policy and other aspects of climate and energy policy or EU governance more generally. For instance, further research should investigate more deeply the interactions between different causal mechanisms behind MS' over- or under-performance. In particular, we have argued that the EU's relatively weak enforcement proceedings are unlikely to lead under-performers to ratchet up their efforts – this proposition should be examined empirically after 2020.

References

- Avrami, L. and Sprinz, D.F., 2018. Measuring and explaining the EU's effect on national climate performance. *Environmental Politics*, 28 (5), 822-846.
- Batory, A., 2016. Defying the Commission: Creative compliance and respect for the rule of law in the EU. *Public Administration*, 94 (3), 685-699.
- Börzel, T.A. 2002. Pace-Setting, Foot-Dragging, and Fence-Sitting: Member State Responses to Europeanization. *Journal of Common Market Studies* 40(2): 193-214.

- Börzel, T.A., 2008. Environmental Policy. *In*: P. Graziano and M.P. Vink, eds. *Europeanization*. London: Palgrave Macmillan.
- Buergin, A., 2015. National binding renewable energy targets for 2020, but not for 2030 anymore: why the European Commission developed from a supporter to a brakeman. *Journal of European Public Policy*, 22 (5), 690-707.
- Burns, C., Eckersley, P. and Tobin, P., 2019. EU environmental policy in times of crisis. *Journal of European Public Policy*, 27 (1), 1-19. doi.org/10.1080/13501763.2018.1561741
- Climate Action Network Europe (CAN Europe) (2018). Off target. Ranking of EU countries' ambition and progress in fighting climate change. Brussels.
- Climate Action Network Europe (CAN Europe) (2020). Pave the way for increased climate ambition. Opportunities and gaps in the final national energy and climate plans. Brussels.
- Ćetković, S. and Buzogány, A., 2019. The Political Economy of EU Climate and Energy Policies in Central and Eastern Europe Revisited: Shifting Coalitions and Prospects for Clean Energy Transitions. *Politics and Governance*, 7 (1), 124-138.
- Davidescu, S., 2017. The Europeanization of renewable energy policy in Romania. *In*: I. Solorio and H. Jörgens, eds. *A Guide to EU Renewable Energy Policy. Comparing Europeanization and Domestic Policy Change in EU Member States*. Cheltenham: Edward Elgar, 204-223.
- Davidescu, S., Hiteva, R. and Maltby, T., 2018. Two steps forward, one step back: Renewable energy transitions in Romania and Bulgaria. *Public Administration*, 96 (3), 611-625.
- Dorsch, M., Flachsland, C. and Kornek, U., 2019. Building and enhancing climate policy ambition with transfers: allowance allocation and revenue spending in the EU ETS. *Environmental Politics*, <https://doi.org/10.1080/09644016.2019.1659576>.

- del Río, P., 2017. Designing auctions for renewable electricity support. Best practices from around the world. *Energy for Sustainable Development* 41, 1–13.
- del Río, P., Bleda, M. (2012). Comparing the innovation effects of support schemes for renewable electricity technologies: A function of innovation approach. *Energy Policy* 50: 272–282.
- Ecologic and Climact, 2019. *Planning for net zero. Assessing the Draft National Energy and Climate Plans. Study commissioned by the European Climate Foudnation*, May 2019.
<https://europeanclimate.org/wp-content/uploads/2019/05/Planning-for-Net-Zero.-Assessing-the-draft-NECPs.pdf>
- EU Commission, 2019. *United in delivering the Energy Union and Climate Action – Setting the foundations for a successful clean energy transition*. COM (2019) 285 final.
https://ec.europa.eu/energy/sites/ener/files/documents/recomondation_en.pdf
- EU Commission, 2020. *Stepping up Europe’s 2030 climate ambition. Investing in a climate-neutral future for the benefit of our people*. https://ec.europa.eu/clima/sites/clima/files/eu-climate-action/docs/com_2030_ctp_en.pdf
- Eurobarometer, 2017. *Special Eurobarometer 459. Climate Change*.
https://ec.europa.eu/clima/sites/clima/files/support/docs/report_2017_en.pdf
- European Environmental Agency, 2018. Trends and Projections 2018. Tracking progress towards Europe’s climate and energy targets. *EEA Report* 16/2018.
- European Environmental Agency, 2019. Trends and Projections 2019. Tracking progress towards Europe’s climate and energy targets. *EEA Report* 15/2019.
- Falkner, G., 2016. Fines against member states: An effective new tool in EU infringement proceedings? *Comparative European Politics*, 14 (1), 36-52.

- Fitch-Roy, O., Benson, D. and Woodman, B., 2019. Policy instrument supply and demand: How the renewable electricity auction took over the world. *Politics and Governance*, 7 (1), 81–91.
- Fukuyama, F., 2013. What is governance? *Governance: An International Journal of Policy, Administration, and Institutions*, 26 (3), 347–368.
- Galeotti, M, Salini, S. and Verdolini, E., 2020. Measuring environmental policy stringency: Approaches, validity, and impact on environmental innovation and energy efficiency. *Energy Policy*, 136, 111052. doi.org/10.1016/j.enpol.2019.111052
- Gawel, E. and Strunz, S., 2019. Energy Policies in the EU – A Fiscal Federalism Perspective. In: M. Knodt and J. Kemmerzell, eds. *Handbook of Energy Governance in Europe*. Cham: Springer. https://doi.org/10.1007/978-3-319-73526-9_51-1.
- Germanwatch 2019. Climate Change Performance Index. Background and Methodology. https://www.germanwatch.org/sites/germanwatch.org/files/CCPI%202019_Background%20and%20Methodology.pdf
- Gürtler, K., Postpischil, L and Quitzow, R., 2019. The dismantling of renewable energy policies: The cases of Spain and the Czech Republic. *Energy Policy*, 133, 110881. <https://doi.org/10.1016/j.enpol.2019.110881>
- Haas, R., Resch, G., Panzer, C., Busch, S., Ragwitz, M. and Held, A., 2011. Efficiency and effectiveness of promotion systems for electricity generation from renewable energy sources – Lessons from EU countries. *Energy*, 36 (4), 2186-2193.
- Hiteva, R. and Maltby, T., 2017. Hitting the target but missing the point: failing and succeeding in the Bulgarian renewable energy sector. In: I. Solorio and H. Jörgens, eds. *A Guide to EU*

Renewable Energy Policy. Comparing Europeanization and Domestic Policy Change in EU Member States. Cheltenham: Edward Elgar, 224-244.

Hoppe, T., van Bueren, E. 2017. From frontrunner to laggard: The Netherlands and Europeanization in the cases of RES-E and biofuel stimulation. In: Solorio, I., Jörgens, H. (eds.). *A Guide to EU Renewable Energy Policy. Comparing Europeanization and Domestic Policy Change in EU Member States.* Edward Elgar: Cheltenham, pp. 65-42.

Jack, B., 2013. Article 260 (2): An effective judicial procedure for the enforcement of judgments? *European Law Journal*, 19 (3), 404-421.

Jankowska, K. and Ancygier, A., 2017. Poland at the renewable energy crossroads: an incongruent Europeanization? In: I. Solorio and H. Jörgens, eds. *A Guide to EU Renewable Energy Policy. Comparing Europeanization and Domestic Policy Change in EU Member States.* Cheltenham: Edward Elgar, 183-203.

Jordan, A. and Matt, E., 2014. Designing policies that intentionally stick: policy feedback in a changing climate. *Policy Sciences*, 47 (3), 227–247.

Jörgens, H., Öller, E. and Solorio, I., 2017. Conclusions: patterns of Europeanization and policy change in the renewable energy policy domain. In: I. Solorio and H. Jörgens, eds. *A Guide to EU Renewable Energy Policy. Comparing Europeanization and Domestic Policy Change in EU Member States.* Cheltenham: Edward Elgar, 289-313.

Kitzing L., Mitchell C. and Mothorst P. E., 2012. Renewable Energy Policies in Europe: Converging or Diverging? *Energy Policy*, 51, 192–201.

Kochenov, D. and Pech, L., 2015. Monitoring and enforcement of the rule of law in the EU: rhetoric and reality. *European Constitutional Law Review*, 11 (3), 512-540.

- Koops, C.E., 2014. *Contemplating compliance: European compliance mechanisms in international perspective*. Thesis (PhD). University of Amsterdam.
<https://dare.uva.nl/search?identifier=c0dd56a2-3d95-4742-ba7e-63b3144a56f2>
- Lachapelle, E. and Paterson, M., 2013. Drivers of national climate policy. *Climate Policy*, 13 (5), 547-571.
- Lauber, V. and Schenner, E., 2011. The struggle over support schemes for renewal electricity in the European Union: a discursive-institutionalist analysis. *Environmental Politics*, 20 (4), 508-527.
- Liefferink, D., Bas, A., Kamstra, J. and Ooijevaar, J., 2009. Leaders and laggards in environmental policy: a quantitative analysis of domestic policy outputs. *Journal of European Public Policy*, 16 (5), 677-700.
- Liefferink, D. and Wurzel, R.K., 2017. Environmental leaders and pioneers: agents of change? *Journal of European Public Policy*, 24 (7), 951-968.
- Ludwig, G., 2019. A step further towards a European energy transition: the “clean energy package” from a legal point of view. In: E. Gawel, S. Strunz, P. Lehmann and A. Purkus, eds. *The European Dimension of Germany's Energy Transition – Opportunities and Conflicts*. Cham: Springer, 83-94.
- Maltby, T. 2013. European Union energy policy integration: A case of European Commission policy entrepreneurship and increasing supranationalism. *Energy Policy*, 55, 435-444.
- McGowan, F., 2020. Policy learning or politics as usual? Explaining the rise and retrenchment of renewable electricity support policies in Europe. *Environmental Politics*, 29 (4), 589-608.

- Niemann, A. (2017). Neofunctionalism. *Oxford Research Encyclopedia of Politics*.
<https://oxfordre.com/politics/view/10.1093/acrefore/9780190228637.001.0001/acrefore-9780190228637-e-149>.
- Oberthuer, S., 2019. Hard or Soft Governance? The EU's Climate and Energy Policy Framework for 2030. *Politics and Governance*, 7 (1), 17-27.
- Ringel, M. and Knodt, M., 2018. The governance of the European Energy Union: Efficiency, effectiveness and acceptance of the Winter Package 2016. *Energy Policy*, 112, 209-220.
- Scruggs, L. and Benegal, S., 2012. Declining public concern about climate change: can we blame the great recession? *Global Environmental Change*, 22, 505–515.
- Skjærseth, J.B. 2018. Implementing EU climate and energy policies in Poland: policy feedback and reform. *Environmental Politics*, 27 (3), 498-518.
- Skogstad, G., 2017. Policy feedback and self-reinforcing and self-undermining processes in EU biofuels policy. *Journal of European Public Policy*, 24 (1), 21-41.
- Skovgaard, J., 2014. EU Climate Policy After the Crisis. *Environmental Politics*, 23 (1), 1–17.
- Strunz, S., Gawel, E. and Lehmann, P., 2016. The political economy of renewable energy policies in Germany and the EU. *Utilities Policy*, 42, 33-41.
- Strunz, S., Gawel, E., Lehmann, P. and Söderholm, P., 2018. Policy convergence as a multi-faceted concept: The case of renewable energy policies in the EU. *Journal of Public Policy*, 38 (3), 361-387.
- Strunz, S., Gawel, E. and Lehmann, P., 2019. Between energy transition and internal market agenda: The impact of the EU Commission as a distinct energy policy actor. *In: E. Gawel, S.*

Strunz, P. Lehmann and A. Purkus, eds. *The European Dimension of Germany's Energy Transition – Opportunities and Conflicts*. Cham: Springer, 413-432.

Tobin, P., 2017. Leaders and laggards: Climate policy ambition in developed states. *Global Environmental Politics*, 17 (4), 28-47.

Wurzel, R.K., Liefferink, D. and Di Lullo, M., 2019. The European Council, the Council and the Member States: changing environmental leadership dynamics in the European Union. *Environmental Politics*, 28 (2), 248-270.

Veum, K. and Bauknecht, D. 2019. How to reach the EU renewables target by 2030? An analysis of the governance framework. *Energy Policy*, 127, 299-307.