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# A public choice view on the climate and energy policy mix in the EU – How do the emissions trading scheme and support for renewable energies interact?



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## HIGHLIGHTS

- We analyze the interaction of the EU Emissions Trading Scheme and support policies for RES.
- Stylized framework with emission cap as variable to be negotiated between regulators and emitters.
- RES-support contributes to a more stringent emission cap and may even increase overall efficiency.

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## ABSTRACT

In this paper, we analyze the rationale for an energy policy mix when the European Emissions Trading Scheme (ETS) is considered from a public choice perspective. That is, we argue that the economic textbook model of the ETS implausibly assumes (1) efficient policy design and (2) climate protection as the single objective of policy intervention. Contrary to these assumptions, we propose that the ETS originates from a political bargaining game within a context of multiple policy objectives. In particular, the emissions cap is negotiated between regulators and emitters with the emitters' abatement costs as crucial bargaining variable. This public choice view yields striking implications for an optimal policy mix comprising RES supporting policies. Whereas the textbook model implies that the ETS alone provides sufficient climate protection, our analysis suggests that support for renewable energies (1) contributes to a more effective ETS-design and (2) may even increase the overall efficiency of climate and energy policy if other externalities and policy objectives besides climate protection are considered. Thus, our analysis also shows that a public choice view not necessarily entails negative evaluations concerning efficiency and effectiveness of a policy mix.

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## 1. Introduction

The current mix of policies in European climate and energy policy consists most prominently of the EU Emissions Trading Scheme (ETS) on the European level and additional policies supporting renewable energy sources (RES) on the level of member states. Started in 2005 and entering its third trading period in 2013, the ETS sets an overall cap on CO<sub>2</sub>-emissions in the EU. Following the economic textbook, the ETS corrects externalities from CO<sub>2</sub>-emissions in a cost-effective manner as its trading mechanism minimizes the costs of emission reductions. On top of the ETS, the member states of the EU employ policies supporting RES. Since

2009, member states have legally binding targets concerning their national share of RES. Via these RES targets and policies, member states express different levels of ambition and different technology priorities. This policy mix of a European cap-and-trade system and national RES-support schemes draws harsh critique concerning efficiency and effectiveness of policy intervention.

Several mainstream economists argue that the ETS suffices for optimal climate and energy policy whereas additional instruments only reduce overall efficiency (e.g., Sinn, 2011). From this perspective, the ETS represents a first-best policy instrument which ensures that anthropogenic climate change is strictly limited to an optimal (or at least politically determined) level. Hence, there is no need for additional policy instruments, which interfere with the ETS in a detrimental way: for instance, subsidies for RES undermine the carbon price within the ETS, thereby distorting the trading mechanism's price signal (Fankhauser et al., 2010). Thus, pushing relatively costly RES technologies into the market

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**Table 1**  
Framework.

		Objectives of regulation	
		Single objective: climate protection	Multiple objectives/externalities
ETS design	Corresponds to the textbook model Results from a political bargaining game	Case A (Chapter 2) Case B (Chapter 3)	Case C (Chapter 4.1) Case D (Chapter 4.2)

increases the overall social cost of climate protection and reduces the efficiency of policy intervention. In this way, RES-subsidies may also lower public acceptance of renewable energies (Frondelet et al., 2012) and thus may reduce the political leeway for climate protection in general (Weimann, 2008).

While mainstream economists find fault with the efficiency of the policy mix, others question the effectiveness of the policy mix due to regulatory capture. Helm (2010: 195) argues that “capture has, indeed, been the norm rather than the exception”. In particular, the ETS abounds in loopholes and only simulates effective climate protection. So far, ETS-related effective emission reductions have not occurred and cannot be expected to occur in the future, since “the EU ETS avoids the politically difficult cases having to be addressed” (ibid.: 190). Similarly, Spash (2010: 169) suggests that emissions trading “is creating a distraction from the need for changing human behavior, institutions and infrastructure” and likens mainstream economists’ approval of emissions trading to the drug “soma” in Aldous Huxley’s novel “Brave New World”. From this view, European climate and energy policy appears as another instance of “simulative politics” that only “sustains the unsustainable” without effectively addressing environmental problems (Blühdorn, 2007).

Thus, there is the puzzling situation that European climate and energy policy is criticized from two different directions – both resulting in very negative assessments of the current policy mix. While the attacks on RES-support policies draw on *efficiency* arguments from the economics textbook, the critiques of the *effectiveness* of the ETS follow from a public choice perspective on regulation. In their extremes, however, both alternatives seem to be futile for practical policy advice: either one strives in vain for the attainment of ideal, textbook-like policies or one succumbs to a fatalist diagnosis of merely symbolic politics.

Other approaches in the literature, which employ a realistic public-choice view on climate and energy policy without a fatalist stance appear to be more useful: Brunner et al. (2012) provide specific policy recommendations how to address the commitment problem of climate policy. Hanoteau (2005) establishes a political-economy model of emissions trading, which shows how stringency of regulation might be increased by free allocation of allowances.

Hence, the literature so far provides specific public choice analyses of stand-alone ETS on the one hand, and general discussions of the policy mix on the other hand (e.g., Sijm, 2005, Kemfert and Diekmann, 2009, Lehmann and Gawel, 2013). What is lacking from the literature, however, is a public choice analysis of how the current main instruments of European climate and energy policy interact. To fill this gap, we assess the impacts of additional RES-support policies on the ETS from a public-choice perspective. In particular, we analyze the specific rationale for a policy mix when the ETS originates from a political bargaining game within a context of multiple policy objectives.

The analysis starts from a hypothetical reference case under which the ETS provides a sufficient first-best policy instrument. This case arises if (1) climate protection is the sole objective of energy policy intervention and (2) the design of the ETS corresponds to the idealized textbook model. The first assumption rests on the twofold premise that only market failures justify policy interventions and unregulated CO<sub>2</sub> emissions are the only relevant market failure

related to energy provision. The second assumption implies an exogenously given, optimal emissions cap perfectly implemented by efficient instrument design. However, we argue that policy objectives beyond climate protection, such as member states’ RES targets or specific technology restrictions (e.g., Germany’s nuclear phase out) must not be ignored. These objectives may be economically warranted – e.g. due to externalities arising from fossil-nuclear energy production (long-run risks of nuclear power, oil spills, security of supply) – or simply politically set. Furthermore, we point out that the design of the ETS should be conceptualized as the result from repeated bargaining games between regulators and interest groups which try to maximize their rents. Concluding that the real ETS cannot be expected to live up to the textbook’s requirements, we examine what the relevant deviations imply for the design of climate and energy policy. We differentiate four possible cases which we address in turn (see Table 1).

We first replicate the reference case A (chapter 2), where the ETS is efficiently designed and only meant to address climate change. In this case, additional RES-policies are welfare-decreasing. We subsequently demonstrate that in case B (chapter 3), where the emissions cap results from continuous bargaining, RES-support schemes may increase the effectiveness of emissions trading. In particular, we argue that the level of the politically set cap is not a function of the overall social costs of climate and energy policy; rather, the cap depends on the abatement costs of powerful ETS participants only. As the ETS-abatement costs decrease with deployment of RES technologies, we expect RES-policies to have a *positive* effect on the eventually politically feasible level of the ETS cap. This conclusion rests on the assumption that ETS participants (who benefit from lower allowance prices) are better able to influence political decisions than household electricity customers (who face higher retail electricity prices due to RES-deployment). From this point of view, RES may help to attain more ambitious reduction targets. In case C (chapter 4.1), we assume that the ETS is ideally designed yet multiple policy objectives need to be achieved. We point out that, following the classical Tinbergen rule, a policy mix is needed in this case to address multiple policy objectives at least cost. Finally, we argue that in practice climate and energy policy most likely operates in a context such as case D (chapter 4.2), where the ETS needs to be continuously negotiated and multiple objectives are to be attained. This makes a strong case for additional instruments supporting RES. First, RES policies help to reduce the political costs of implementing emissions reductions. Second, RES-support may actually improve the overall efficiency of climate and energy policy as it helps to internalize other externalities than climate change if corresponding first-best policies are not enforceable.

## 2. Reference case: ideal emissions trading for climate protection

Under case A, optimal climate protection is the only regulatory goal that complements energy policy’s main objective of providing efficient energy supply. Furthermore, the ETS is efficiently designed: the emissions cap  $\bar{E}$  is exogenously given and

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