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The institutional dimension of resource efficiency in a multi-level governance system—Implications for policy mix design

Bettina Bahn-Walkowiak*, Henning Wilts

Wuppertal Institute for Climate, Environment and Energy, Döppersberg 19, Wuppertal D-42103, Germany

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ABSTRACT

The paper undertakes a closer look on the relation of institutions and policy mixes within the multi-level scope of the European Union in the policy field of resource efficiency and maps out different configurations. Based on an extensive analysis of scope, foci, instruments and especially the distribution of institutional responsibilities in 32 EU countries, the paper aims to amplify the categorisation of policy mix characteristics developed by Rogge and Reichardt by considerations on the institutional background of policy mixes. It specifically brings into question the potential impact of different institutional settings on the consistency and coherence of approaches in this evolving policy field. Resource efficiency is an eminently cross-cutting policy concept and a specific interesting unit of analysis due to the observable heterogeneity of implementation approaches. However, it is still mainly disconnected from energy issues and, at the same time, EU policy has shifted to the circular economy approach, indicating further need for streamlining with the resource efficiency approach. The paper stresses the need to include institutional and multi-level governance issues for policy design and the development of policy mixes, especially in the context of the now refocused resource efficiency agenda to the transition to a circular economy.

1. Introduction

A recently finalised research project "Policy Options for a Resource Efficient Economy", funded by the European Commission, points to the need of innovative policy mixes for resource efficiency [1]. An essential output of this project was the development of quantitative headline targets for the environmental characteristics concerning the major categories material use and carbon emissions [2]. In order to accommodate future generations needs and global equal distribution as well as seriously combat climate change a target vision for Raw Material Consumption (RMC)[1] of 5 t per capita and year (globally) was specified as to be achieved by 2050. In view of an average consumption of about 14 t per capita and year today (see Fig. 1) in Europe, the vision is ambitious and indicates need for strong policy effort.

In 2011, the European Union had named resource efficiency as one out of seven flagship projects to pursue its so-called Europe 2020 strategy considering resource efficiency a top policy priority and the Roadmap to a Resource Efficient Europe at its core [3,4]. Since that time it also has been increasingly acknowledged that the use of resources is deeply interwoven with the use of energy [3,4] however with limited political and institutional consequences so far. Fossil fuels belong to the four main material categories that are used to calculate the resource use and the global and national resource productivities and it is clear that, for example, construction activities, cement production and the use of buildings are not only material but also energy intensive. Measures to increase resource efficiency or to reduce resource use therefore often directly impact energy use and CO_2 emissions in many ways [5,6].

There is, of course, no single policy tool that would be able to address the challenges caused by the use of different resources, consisting of different problem structures, involving diverse actors and stakeholders pursuing different goals. Instead, many policy mixes at different governance scales are required to overcome the variety of barriers, take separate innovation stages into account, and effectively address national and global requirements.

Earlier studies have shown that the economic development and the resource use connexion is shaped by a complex interplay between informal constraints and formal rules and their enforcement mechanisms, environmental policies and systems of innovation [10–12]. More targeted analyses of resource efficiency policies and eco-innovation systems have also revealed the importance of the analysis of country-specific national governance patterns, structures and institutional

* Corresponding author.
E-mail address: bettina.bahn-walkowiak@wupperinst.org (B. Bahn-Walkowiak).

[1] RMC is based on raw material equivalents required for domestic consumption, including the raw materials that are embodied in traded products which are not considered in the indicator Domestic Material Consumption (DMC), which is commonly used at national scale. The difference between RMC and DMC is ca. 5% on average.

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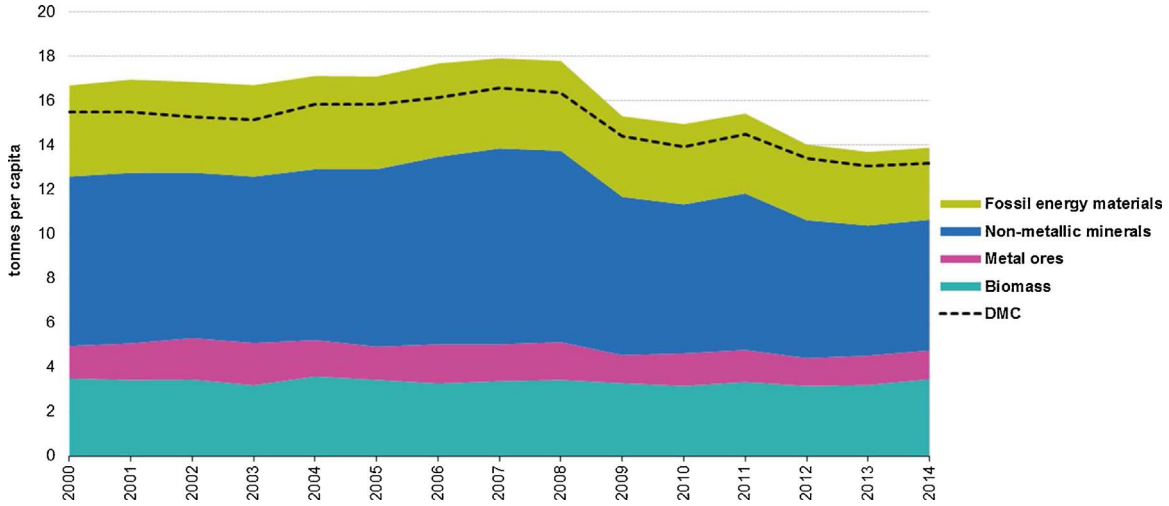

Fig. 1. Raw material consumption (RMC) by main material categories, EU28, 2000–2014; Source: [7].

developments [13–16]. Flanagan et al. highlight that policy makers, scholars and analysts alike increasingly focus on challenges stemming from policy complexity and point out that this shift in emphasis is exemplified by the uptake of the term 'policy mix' [17]. The uptake of this term in the current resource and energy efficiency research reflects that modern states are increasingly characterized by the dispersal of power, not merely upwards and downwards from the national level to supra- and sub-national actors, but also outwards to quasi-state and non-state actors.

Against this background the paper is guided by the following research question:

> How can the interplay of institutions, governance levels and policy mixes be better integrated in the policy mix analysis and design?

The paper is based on (parts) of empirical surveys of 32 European countries observing the development of the institutional settings for the implementation of resource efficiency policies and policy mixes [15,16]. It further draws on qualitative studies investigating the status-quo of policy mixes [48,54,55]. The paper is structured as follows: Chapter 2 reflects on the analytical framework for policy mixes (rationale, essential characteristics, coordination challenges), and chapter 3 provides empirical results from the institutional and policy context in the field of resource efficiency and example countries (current policy status, mechanisms for stakeholder inclusion, multi-level issues). Based on these outcomes, conclusions are drawn in chapter 4 with regard to the research question and further need for research.

2. Analytical framework for policy mixes

The increased complexity of the policy processes virtually precludes any static-comparative analysis of instruments as if they were stable, discrete and independent units. Hence, single instruments can never be conclusively evaluated because their actual state is influenced by the fact that they always come in a mix, or more commonly, they are added to an existing mix. However, few studies have systematically explored interactions between different instruments, be it across time or across other dimensions of the policy process. Against this background, the paper especially focuses on the institutional dimension of policy mixes by taking the example of resource efficiency policy.

Institutional framework will be understood as a conglomeration of organisations and agencies, instruments and strategies, actors, target systems and arrangements/mechanisms for the interest-sharing and involvement of stakeholders. This understanding goes beyond North's interpretation of institutions as systems of formal laws, regulations, and procedures, and informal conventions, customs, and norms, that shape socioeconomic activity and behaviour by (simply) including the organisational outcome of those as analytical unit. Policies mixes, therefore, shall be understood as a specific orchestration of well-matched packages of elements and instruments within a given and evolving institutional framework. This is important because, as Foxon states, *"the complexity of the goals of politics as well as the loose and diffuse links between actions and outcomes make politics inherently ambiguous and mistakes difficult to rectify"* [18,p.3].

2.1. Rationale for resource efficiency policy mixes

The fundamental basis for any policy mix design has to be the question whether a mix is actually needed, i.e. if "*the environmental issue at hand is a 'single-aspect' or a 'multi-aspect' one*" [9,p. 21]. While single-aspect environmental problems are characterised by only one relevant dimension or characteristic—for example, the total amount of a certain type of emission that can be combated with a specific filter technology—, the reality of resources and raw materials is a multi-aspect issue [8,9]. They

- are partially private goods, partially club goods, common pool resources and—like in the case of global climate—even public goods,
- underlie extreme informational constraints, knowledge and data gaps, concerning the interplay of the socio-industrial metabolism and the ecosystems (so-called resource nexus) and
- are subject to (often irrational) behaviour of the relevant actors and stakeholders guiding consumer choices as well as policy design.

Based on the concept of 'second-best' theory, Lipsey and Lancaster [19] emphasised that in such situations one instrument per market failure will be needed. *"For example, if the assumption about full information is invalid (while all the other assumptions hold), one instrument would be needed to address the environmental externality per se, and another instrument would be needed to address the information failure"* [9,p. 22]. Thus—according to the 'Tinbergen Rule' and considering the multi layer issues of the resource challenge as a 'multi-aspect' environmental problem—a first-best optimum cannot be reached by applying only one instrument but a combination of several instruments—an 'instrument mix'—will be needed [8,9]. This is all the more true for the resource efficiency topic when one takes into account the crosscutting dimension of resources as part of various policies fields (e.g., economic policy, fiscal policy, trade policy, environmental policy). Resource efficiency policy has to be seen as a prototype of a 'multi-aspect problem' of a kind that requires a mix of different instruments, policies and strategies at different governance levels.