POLFREE

POLICY OPTIONS FOR A
RESOURCE EFFICIENT ECONOMY

Policy Mixes for a Resource-Efficient Europe

SUMMARY OF KEY POINTS

It is clear that resource efficiency is a multi-aspect and crosscutting issue, requiring an appropriate and well-designed policy mix in order to properly address a 'web of constraints'. The component instruments of a policy mix must be delineated from 'policy fields' that hold great resource efficiency potentials, while potential features and key trade-offs within such policy mixes require specific attention and analysis. Due to a high complexity, the creation of an effective and efficient policy mix for resource efficiency that is equally consistent, coherent and credible for stakeholders remains a substantial challenge and calls for further research.

The POLFREE (POLicy options For a Resource-Efficient Economy) project explored drivers and barriers for a resource-efficient economy in Europe. The project investigated why resources have been used inefficiently, developed new concepts and paradigms for resources efficiency, and examined through modeling different policy scenarios for resource efficiency. This Policy Brief belongs to a series of five, listed below. These, and all other project outputs, may be found at www.polfree.eu

POLICY BRIEF SERIES

1   Understanding the Web of Constraints to Resource Efficiency in Europe – Lessons for Policy

2   Constraints to Resource-Efficient Consumer Behaviour

3   Constraints to Resource-Efficient Business Models and Practices

4   Global Governance for Resource-Efficient Economies

5   Policy Mixes for a Resource-Efficient Europe

6   Pathways to a Resource-Efficient and Low-Carbon Europe – Lessons from the Modelling

Conclusion 1

Policy intervention to improve resource efficiency is necessary

Concerns over a warming planet, transgressing 'planetary boundaries' (Rockström et al. 2009) and risks stemming from the global resource nexus (Lee et al. 2012) are key drivers for exploring the potential for green growth (or de-growth) around the world. One of the underlying aspirations of resource efficiency policy is that both the environmental and socio-economic challenges ahead will become easier to address by using all natural resources more efficiently (McKinsey Global Institute 2011).

Following Oates (1972), all environmental policies derive their legitimacy from existing market failures. As long as human activities directly and indirectly harm the environment with potentially disastrous outcomes, policies to counteract such failures are legitimate. Acknowledging the systemic character of many challenges, the recent discussion has shifted towards 'system failures', requiring more complex analyses on shared responsibilities between market participants and the public sector.

According to several studies, it is clear that:

- **Global resource use is rising**. While some EU-15 countries experience a decline in resource use, some EU-12 countries show sharp increases.
- **Decoupling between economic growth and environmental degradation is neither strong nor evenly distributed**. Countries are very heterogeneous with respect to their economic structure and power, the endowment with natural resources, and their performances in resource extraction and use.
- **Material leakages and problem shifting** to developing countries counteracts improvements made in developed economies substantially.
- **Path dependencies prevail** and established resource-intensive patterns and maintenance require additional material inputs.
- **Rebound effects** in the range of 10-50% occur, depending on the specific instruments and resources considered.

Conclusion 2

Resource efficiency is a multi-aspect and cross-cutting issue, requiring an appropriate policy mix to address a 'web of constraints'

The POLFREE project is based on the evidence that the current utilisation of resources (especially non-renewable) in Europe, is not sustainable. Indeed, the European Commission states that 'continuing our current patterns of resource use is not an option' (EC 2011). The project also utilises the concept of a 'web of constraints' as an analytical framework in order to explain why resources have been and are being used inefficiently (see Policy Brief N.1). In doing so, it moves beyond the traditional concept of clearly identifiable, independent 'barriers' to resource efficiency.

Public policy must seek to overcome this web of constraints in order to achieve a resource-efficient economy. However, policy formulation for resource efficiency is at an early stage. Considering the multilevel and multi-aspect condition of the resource efficiency challenge, as exemplified by the web of constraints, a resource-efficient economy cannot be achieved by applying individual instruments alone. A combination of several instruments – a 'policy mix' – will be needed. This is all the more true when taking into account the crosscutting dimension of resources, and the often unintended effect on their use as a result of many other policies and policy fields. There is no single policy tool that would be equally suited for all problem structures, goals, actors, types of resources, etc. Instead a policy mix is required that overcomes a variety of hurdles, is mindful of separate innovation stages, and effectively addresses future global challenges.

Conclusion 3

Component instruments of a policy mix may delineated from 'policy fields' that hold great potential to drive resource efficiency

Given the countless applications and use of resources, and the variety of influences that impact the production, use and end-of-life phase of products that make use of resources, the first step in order to develop an appropriate policy mix is the systematic identification of relevant policy 'fields' with untapped resource efficiency potentials. Based on an intensive literature review on policy instruments applied in EU member states (EEA 2012) and other sources, nine policy fields, represented by three innovative instruments in each case (related to the pathways developed by the POLFREE project – see Policy Brief N.6), which in combination are (*a priori*) able to induce a radical reduction in resource use, were identified and analysed (see Table 1).

A common analytical framework was developed for the analysis of each instrument in order to allow for conclusions to be derived on the effectiveness of the policy mix. Application of the assessment framework distinguished between the policy context, the instrument's design features and the implementation process – including an analysis of potential barriers, veto players and flanking instruments.

Table 1: Selected policy fields and instruments; Source: Wilts et al. 2015, p. 166

Phasing out environmental harmful subsidies	A comprehensive inventory of EHS in the EU
	Environmental Subsidy Controlling: The 'Environmental Check' for Subsidies
	Systematic phasing out of EHS
Internalisation of external costs	European-wide harmonisation and introduction of construction minerals taxes (incl. border tax adjustment) – Construction Minerals Directive
	TMR-based material input taxes
	LCA-based Value Added Taxes
Resource-efficient electricity production and distribution	Smart grids
	Effective levels of carbon taxation through changes in the ETS and carbon border adjustments
	Integrated micro-generating systems and through incentives and subsidies in industries and households accompanied with energy efficiency audits
Resource-efficient mobility	Strict CO_2 emission standards
	Vehicle and road tax
	Prioritising urban non-car infrastructure
Resource efficiency in the building sector	Landfill bans and landfill targets on C&D waste
	End of life of buildings and building passports
	Promoting 'co-housing alternatives' and living together through economic and planning instruments
Minimisation of food losses and waste	Resource efficiency across the supply chain – Supporting cooperation, capacity building and innovation
	Green Public Procurement
	Courtauld commitment of food waste prevention
Resource efficiency by product service systems	Awareness raising campaign about existence and advantages of PSSs
From waste disposal towards a resource-efficient circular economy	Individual producer responsibility
	Mandatory eco-design standards for reuse and repair-ability
	Waste targets for resource efficiency
Resource efficiency by industrial symbiosis	Landfill taxes, bans and end of waste criteria
	Pan-European network of industrial symbiosis programmes/coordinating bodies
	Incorporating IS requirements in regional planning and activity permits

Conclusion 4

Key trade-offs within a policy mix for resource efficiency require attention

Three key conclusion were drawn from the analysis of the instruments presented in Table 1:

Conclusion 1 – The more ambitious an instrument, the lower the immediate benefits for the actors involved. There is a trade-off between those instruments that offer the highest potential increases for resource efficiency and those that could be easily implemented due to market incentives. This point also relates to the political acceptance of instruments and specific measures: The process of designing policies for resource efficiency cannot be based soley on theoretical preferences for a given instruments, but needs to take into account the political economy. The higher the general acceptance for resource efficiency policies, the more stringent instruments may be. This is especially the case if instruments aim at influencing or even regulating the consumer side.

Conclusion 2 – In many cases there is a trade-off between the 'predictability' of an instrument and its flexibility. Instruments are often considered as more efficient and acceptable if the evolution of tax rates, recycling rates, etc., is clearly defined over time, such that actors can adapt their investment decisions to expected future developments. However, this self-binding character reduces the flexibility of an instrument, and the ability of policy makers to adapt instruments in light of external factors such as technology or market developments. Nevertheless, the analysis has also shown that there are approaches to successfully deal with this trade-off. A specific example is the presence of clear and transparent mechanisms for the revision of specific elements of an instrument. Whilst this does not reduce the risks of mis-investment in the longer-term, it nonetheless prevents abrupt, unplanned instrument alterations that may induce even higher costs, and reduces damage to investor confidence.

Conclusion 3 – A third trade-off may be found between the level of specificity of an instrument and its 'depth'; the ability of an instrument to incentivise resource efficiency across up- and downstream actors. While technical standards or permitting procedures may include plant-, region- or sector-specific aspects but do not set incentives to seek improvements beyond the requirements set, market-based instruments are able to set dynamic incentives for continual improvement that can be passed on and diffused to other sectors (e.g. in the case of material extraction taxes).

Conclusion 5

An effective and efficient policy mix for resource management has to be consistent, coherent and credible

Establishing an integrated policy mix for resource efficiency that is consistent, coherent and credible is a substantial challenge. The figure below provides a description of each of these elements.

The more promising specific instruments seem in terms of their potential to improve resource efficiency and reduce the environmental burden from resource use, the more actors must be involved along the value chain in its development and implementation. This often requires a **complex coordination effort between different policy fields**, (e.g. food waste prevention efforts must include policy relating to the agriculture sector, industrial food processing, retailers and consumers). Despite the obvious potential environmental and economic benefits, the potentially high transaction costs of such coordination are a powerful barrier. New platforms for coordination but also improved framework conditions for promoting

Consistency of elements	Coherence of processes	Credibility and stability
• "Characterised in its weak form by the *absence of contradictions* and in its strong form by the *existence of synergies within and between the elements of the policy mix*" (Rogge & Reichardt 2013) • preferably no negative interactions between single policies (ie, instruments already in place and new ones) but mutual benefits with existing policies • preferably no target conflicts with fundamental social policies	• "referring to the process of policy making and implementation, ensuring that they are not in contradiction with one another or may even reinforce one another" (Rogge & Reichardt 2013) • policy integration and coordination	• "extent to which the policy mix is believable and reliable, both at overall level and at the level of its elements or processes" (Rogge & Reichardt 2013) • influenced by a range of factors (commitment from political leadership, operationalisation of targets by a consistent instrument mix and the deregulation of competences) • stability of targets may influence credibility

niche developments will be necessary in order to boost the uptake of existing technological and social innovations for resource efficiency alongside value chains.

However, crosscutting approaches also increase the potential number of **veto players**. Resource efficiency is often considered a win-win strategy but it is confronted with an **identifiable but powerful number of actors** who generate income and influence from wasteful patterns of resource consumption. For almost all policy approaches the need for **flanking instruments** was identified to reallocate some of the cost savings or the revenues from new business models to those who potentially might hinder their diffusion. These elements can be seen as one of the key success factors for an effective policy mix.

The Roadmap for a Resource-Efficient Europe has set a further pioneering milestone: 'By 2020, waste is managed as a resource' (EC 2011). However, the implementation of present EU legislation in national law is not sufficient in order to achieve this ambition. The effects of waste management on resource efficiency can differ enormously and is also dependent on the choice of additional instruments, and their approach to transposing the waste hierarchy into improved waste and resource management structures. The newly released Circular Economy Package therefore considers the transition to a circular economy to be 'a systemic change' (EC 2015). It is obvious that a high quality management of waste and resources depends on ambitious and consistent regulatory frameworks and a mix of innovative policy instruments at all governance levels in order to deliver a circular economy.

Further Reading

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