



**APRAISE - Stakeholder Consultation Workshop**

**“Improving Environmental Policy Making in the EU: from  
Member State Experience to EU Policy Design”**

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**Background Paper**

***Transposition of the EU Renewable Energy Directive and its interactions with other  
environmental objectives (focussing on biofuels for transport)***

***The cases of Austria and United Kingdom***

## Introduction

This background document presents the assessment of environmental and sustainability-related policies in different policy fields: waste management, water management, resource efficiency and climate protection. These policy fields are reflected in four case studies

- Waste management with focus on plastic packaging waste
- Promotion of energy efficient buildings
- Use of biomass for the production of bio-fuel
- Hydro-power as an example of renewable energy sources

Starting point of each of these case studies is one (or a set of related) directive(s) enacted by the European Commission, which have to be transposed subsequently into national law. In most cases, the directives describe the environmental targets that are to be achieved, but do not prescribe exactly how the targets should be achieved. This leaves the countries plenty of room with regard to the choice of policy instruments and their respective designs. But not only the type and design of policy instruments is decisive for the effectiveness of the transposed policies; also many other factors can influence the policy output in favourable or unfavourable ways. These factors – specifically assessed in the APRAISE project – can result from

- The broader **context** including environmental, economic, social, and technological factors;
- Institutional settings that prevent the transposition and **implementation** of EU directives as well as policy specific context such as policy instrument design, operation and enforcement; and
- **Interactions** between policies and policy instruments, where one policy instrument can possibly reduce the effectiveness of another instrument or joint implementation of policy instruments could result in synergies.

Altogether, the specific policy instruments, their design, their interaction with one another and with other policy instruments, the context in which they work and the way they are implemented give rise to their specific output. For the assessment in APRAISE, this output is measured against the environmental targets stated in the policies – mainly in the directives, but also in the national laws – and the degree, to which the targets are achieved, is called the policy instrument's **effectiveness**. However, actual effectiveness sometimes differs from how a policy instrument could perform in theory. Therefore, not only the actual effectiveness of the assessed policy instruments is measured, but also the (maximum) level of achievement that could potentially be achieved. In many cases, this is also what the policy makers expected, when they planned and implemented the policy. In APRAISE, this potential achievement is called **efficacy**. Eventually, in order to assess the usefulness of policy instruments in achieving a certain target, their effectiveness (and efficacy) has to be related to the cost of implementing and pursuing these targets. This is determined by the **efficiency** of the policy instruments.

Eventually, measuring the effectiveness, efficacy and efficiency of a policy instrument and relating these results to the policy instrument's characteristics, their working context, specific implementation process and interaction with other policy instruments allows drawing conclusions as to why, possibly, a policy instrument does not perform as it was expected to and how the performance could be improved.

## Transposition of the EU Renewable Energy Directive and its interactions with other environmental objectives (focussing on biofuels for transport) – the cases of Austria and United Kingdom

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For making the mobility sector more sustainable and climate friendly biofuels as bioethanol, biodiesel and biomethane are intended to contribute to this aim (8.45 % biofuel target in Austria and 4.7% in the UK). This aim is achieved in EU- member states by different ways, because country-specific characteristics and conditions have to be taken into consideration for achieving this aim.

The promotion of biofuels is differently successful in different EU-MS and leads potentially to interrelations with aspects regarding biodiversity, water bodies' protection and waste reduction. Furthermore agriculture and climate protection issues are of interest in this respect. Thus, the case study explores how the aims of the EU renewable energy Directive (with special focus on biofuels for transport) are achieved in Austria and UK, which policy instruments have been used and how did they perform, and what are the (positive and negative) interactions with other (mentioned) policy themes (biodiversity, water, etc.). The bases of this analysis are the EU Renewable Energy Directive (2009/28/EC) as well as the repealed Biofuels Directive (2003/30/EC).

The table below shows that both countries have set policy instruments (PIs) setting targets for biofuels, whereas Austria preferred a command & control measure and UK a market based system for key biofuels policy instruments. Both countries introduced different tax rates for biofuels and fossil fuels at certain points in time.

Crucial domestic policy instruments	
Austria	UK
<ul style="list-style-type: none"> <li>• <b>Fuel Decree:</b> Defines an Austrian biofuel target for 2020; minimum substitution shares for transport fuel suppliers; options for double counting of biofuels from waste; minimum GHG reductions of biofuels compared to the corresponding fossil fuels (includes instructions for set-up of national system for certifying sustainability);</li> <li>• <b>Decree regarding agricultural outputs for biofuels:</b> Defines land areas which must not be used for cultivation of biofuels' feedstock (includes instructions for set-up of national system for certifying sustainability);</li> <li>• <b>Mineral oil tax law:</b> Defines different tax rates for 100% fossil fuels and transport fuels blended with biofuels; positive tax discrimination of fuels blended with biofuels;</li> <li>• <b>Decree for bioethanol mix:</b> Defines partial tax refunds for E75/E85</li> </ul>	<ul style="list-style-type: none"> <li>• <b>The Renewable Transport Fuels Obligation (RTFO),</b> a transposition of the Renewable Energy Directive and the former Biofuels Directives, establishes a mandatory biofuels target and tracks the obligation through a certificate trading system.</li> <li>• The <b>Excise Duty</b> overseen by HM Revenue and Customs sets taxation rate for all fossil fuels including biofuels based on the Energy Taxation Directive.</li> <li>• The <b>Motor Fuel and Merchant Shipping Regulations (MFMS)</b> address the goals of the Fuel Quality Directive to reduce emissions in the transport sector by allowing the sale of biofuel content between 7-30 % for transport fuel.</li> <li>• <b>Environmental Permitting Regulation (EPR),</b> is a board environmental programme that sets controls for the transport, storage, use and the treatment of biodiesel from tallow such as melted animal fat and waste oils</li> </ul>

The upcoming discussion about ILUC (connected with availability of land for cultivating biofuels' feedstocks) and subsequent limitations for 1<sup>st</sup> generation biofuels impact effectiveness and efficiency negatively in both countries. Other aspects (technical limitations for B10, taxes on imported biofuels)

are country specific. Continued increases in global GHG emissions would intensify pressure to invest in low carbon and renewable energy technologies. Additionally, uncertainties surrounding indirect land use changes have also temporarily placed a cap on biofuels in the UK and targets are unlikely to change until major sustainability issues are addressed. Energy security concern is a positive driving force for the UK biofuel sector, which promotes domestic fuel production (to a certain degree).

Crucial context factors impacting effectiveness/efficiency of policy instruments			
Austria	Impact on Effectiveness	Impact on Efficiency	UK
<ul style="list-style-type: none"> <li>Change in final energy consumption in transport sector;</li> <li>Scientific knowledge on impacts of biofuels on climate protection and biodiversity (ILUC);</li> <li>Technical usability of biofuels in current car engine technologies (limitation for B10);</li> <li>Providing guidance for market actors to achieve obligations (certification procedure);</li> <li>Providing long-term investor certainty</li> </ul>	    	    	<ul style="list-style-type: none"> <li>Increases in total GHG emissions increased need for action</li> <li>Indirect land use change (ILUC) uncertainties</li> <li>Energy dependence concerns</li> <li>Availability of land in the UK</li> <li>View of general public towards biofuels</li> <li>Biofuel/feedstock subsidies in key biofuels export countries</li> <li>Regulation regarding taxes on imported biofuels</li> </ul>

It turns out that considerably different aspects in the national implementation process had impacts on effectiveness and efficiency of PIs. In Austria the failure of introducing E10 had negative impacts whereas the national administrative framework and coordination among institutions have been beneficial. In UK fluctuating conditions (prices for RETC, tax incentive) have negative impacts on success of biofuels in UK.

Crucial policy implementation factors impacting effectiveness/efficiency of policy instruments			
Austria	Impact on Effectiveness	Impact on Efficiency	UK
<ul style="list-style-type: none"> <li>Non-introduction of biofuel E10;</li> <li>National administrative set up of certification system;</li> <li>Coordination and management among institutions</li> </ul>	  	  	<ul style="list-style-type: none"> <li>Fluctuating prices for the Renewable Energy Transport Certificates</li> <li>Cancellation of the differential duty for biofuels</li> <li>Coordination and management among institutions</li> </ul>

Upcoming knowledge about ILUC and thereby assumed potentially lower GHG abatements by 1<sup>st</sup> generation biofuels have led (will lead) to a limitation of these biofuels. This provision to ensure climate mitigation due to biofuels has highly negative impacts on achieving national biofuel targets.

Crucial interaction factors impacting effectiveness/efficiency of policy instruments			
Austria	Impact on Effectiveness	Impact on Efficiency	UK
<ul style="list-style-type: none"> <li>Interactions within the stakeholder system</li> <li>Interactions with biodiversity policies</li> <li>Interactions with climate protection targets</li> <li>Interaction with waste legislation</li> </ul>	   	   	<ul style="list-style-type: none"> <li>Interaction between UK policies</li> <li>Interaction within the stakeholder system</li> <li>Interactions with climate protection targets</li> <li>Interaction with the Clean Air Act &amp; Landfill Tax</li> </ul>

Due to different biofuel targets in Austria (8.45%) and UK (4.7%) problems associated with national biofuel target achievement are different. The high Austrian interim targets on biofuel-shares could always be overachieved in the past; however, the (likely coming) limitation of 1<sup>st</sup> generation biofuels and technical limitations for introducing B10 highly jeopardize the Austrian 2020-biofuel target. The market-based system in the UK has not sufficiently contributed to meeting the biofuels target. The B10 cap threatens the biodiesel market as it eliminates the differentiation between the bioethanol and

biodiesel market in the UK. As a result, the biodiesel market is likely to shrink in the UK, as bioethanol is more economical compared to biodiesel

Expected and observed effectiveness of domestic policy instrument	
Austria	UK
<ul style="list-style-type: none"> <li>• Expected by policy makers: achieving 8.45 % biofuel target (energetically) by biofuels E10/B10 subject to sustainability criteria of EU Dir. 2009/28/EC;</li> <li>• Observed: overachievement of interim targets of biofuel shares;</li> <li>• Tax exemptions/refunds makes it profitable for market agents to use blended fuels rather than 100% fossil fuels;</li> <li>• Current 6% limit on 1st generation biofuels <u>jeopardizes biofuel-target achievement</u> considerably, as non –biofuel options are technically highly limited;</li> <li>• Also the current technical constraints to apply B10 <u>hinders target achievement</u></li> <li>• Sustainability and minimum GHG reduction of biofuels is guaranteed by legislation</li> </ul>	<ul style="list-style-type: none"> <li>• Expected: biofuels target has originally set to 5 % for 2010 (by blending 5 % bioethanol and 7 % biodiesel);</li> <li>• The biofuel target was reduced to 5 % from 2012 onwards, latest revision sets target on 4.7 % from 2013 onwards (continuous revision of targets)</li> <li>• Since the RTFO was implemented in 2008, biofuel targets have not been met (with the exception of 2008)</li> <li>• The RTFO addresses sustainability and GHG emissions savings through sustainability criteria, which are tracked and verified through the issuance of RTF certificates (RTCF)</li> <li>• The duty differential was the primary driver developing the biofuels in the UK and the industry has lagged since its cancellation 2009</li> </ul>

For Austria options other than biofuels are considered as more efficient in achieving the 10% RES-target for the transport sector (e.g. modal shift). However, in Austria these other options are considered not to be viable for achieving the 2020-target. In the UK, biofuels contribute less to the 10% RES target than other renewable energy options. Confusion in certification procedure might be a problem especially in Austria, which produces much more of its biofuel demand domestically (in %) than UK.

Observed efficiency of domestic policy instrument	
Austria	UK
<ul style="list-style-type: none"> <li>• Achieving the RES-target mostly by biofuels is not the most efficient strategy (in the long term);</li> <li>• However, it is the only option in the short term with essential leverage</li> <li>• EU-wide confusion in certification procedure reduces efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• The RTFO and its corresponding RTFC has not been successful in meeting biofuel targets thus questions the efficiency of the market based mechanism</li> <li>• It may take some time for the RTFC prices to stabilise but this is also dependent on other factors such as setting sufficient biofuel targets to drive demand and supply</li> <li>• Uncertain biofuel policy strategies at the EU level impacts UK biofuel policies</li> </ul>

The fixed biofuel targets and external contextual factors in both Austria and the UK limit the expansion of first generation biofuels and second-generation biofuels are not likely to make a sizable contribution to meeting 2020 targets, although in the UK there is growing investment and research and development in the area. Overall Austria and the UK have interpreted EU directives and implemented national policies

differently. The command and control mechanism in Austria appear to be more effective and efficient in meeting national biofuel targets compared to the market based instruments in the UK.

### Conclusions and country comparisons

#### Austria

- Command and control measures have been effective in combination with fiscal incentives to achieve Austrian biofuel target;
- However, 6% limit for 1<sup>st</sup> generation biofuels jeopardize both biofuel and RES-target achievement;
- Another barrier: Applying B10 is technically not viable yet;
- Thus, putting strong focus on just one option (i.e. biofuels) makes target achievement vulnerable if conditions change (rare diversification of options);
- Future generation biofuels are not likely to be provided to a sufficient extent until 2020;
- Increasing R&D in future generation biofuels would reduce (at least short-and medium term) efficiency of strategy for RES-target achievement;
- Changing conditions have decreased investment certainty;
- Confusion with certification obligations/procedures considerably reduce efficiency of using biofuels;
- No biodiversity damages domestically, but potentially abroad because of displacement of food cultivation potentially also to areas with high ecological value;
- **Austria has chosen a command & control instrument with fiscal incentives → high efficacy (high expected effectiveness);**
- **Changing external conditions (1<sup>st</sup> generation biofuels) and technical limitation (B10) jeopardize target achievement, low diversification of measures to achieve RES-target → low expected effectiveness → need to adjust policy instruments domestically;**
- **Confusion about certification (e.g. mutual compatibility) reduced efficiency → need to adjust policy on EU level.**

#### UK

- A market mechanism along with quota setting (RTFO certificate trading) has been questionable in terms of its effectiveness in meeting biofuel targets;
- Policy interactions: other policies include command and control measures that either increase the cost of biofuels production or indirectly encourage biofuels production;
- The 4.7% cap on biofuels limits further development of first generation biofuels. The 4.7% target is unlikely to increase until the major issues on indirect land use changes are sufficiently addressed;
- The cancellation of the duty differential increased uncertainty in the biofuels market and led to that fact that biofuels higher taxed than fossil fuels (due same tax rates but lower energy content of biofuels);
- Second generation biofuels and biofuels from waste are expected to play a more important role in biofuels production within the mid-term;
- The majority of biofuel feedstock are imported from abroad due to lower/more competitive prices from subsidised biofuels in other countries as well as limited land in the UK
- **The overarching biofuel policies do not consider the wide variety of feedstocks for biofuels and different environmental impacts → differentiated policy targets may necessary for different types of biofuels based on their environmental impact;**
- **The implementation of the RTFO has not been as effective and efficient in meeting biofuel targets or developing a UK biofuels sector → need to re-examine the implementation process and targets as well as the impacts on different biofuel producers (small vs. large scale production, biodiesel vs. bioethanol).**

**Questions to stakeholders**

**Austria**

- Why was no unique European sustainability certification system established?
- What are potential solutions for the problem of dislocating food cultivation to potentially areas with high ecological value?
- Is there a “plan B” of EC if future generation biofuels cannot be provided until 2020 to a sufficient extent?
- Which factors have considerably impacted achievements of national biofuel targets?
- Which factors have considerably impacted efficiency of national biofuel targets?

**UK**

- Do you think that a quota and certificate policy such as the RTFO or a command and control policy (ie. taxation) creates a more viable environment for developing the biofuels sector?
- Does there need to be separate targets set for biodiesel and bioethanol due to the diverse feedstocks used and also different environmental impact for each fuel type?
- Are separate targets required for biodiesel and bioethanol? And why?
- What role do you think second generation biofuels will play in the UK biofuels sector in the medium and long term?