POLICY BRIEF

3rd POLICY BRIEF July 2016

Energy efficiency policy mixes under Article 7

Energy Saving Policies and Energy Efficiency Obligation Scheme

ENSPOL

ENSPOL is an EU-funded project targeting the effective and proper implementation of Article 7 of the Energy Efficiency Directive in all Member States and beyond. Major objective of ENSPOL is the establishment, revision and implementation of robust Energy Efficiency Obligation Schemes or alternative policy measures to each Member State. At the same time the project envisages the provision of appropriately refined information and supportive strategic tools to all targeted stakeholders. The project is coordinated by the research organization Joint Implementation Network.

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Summary:

Energy efficiency policy is expected to play a key role for meeting the European Union's energy targets (particularly for reduced energy demand and reduced CO_2 emissions) using a range of policy instrument combinations. However, most analyses undertaken so far have focused on single-policy measures rather than developing a more generic framework for assessing to what extent a particular policy mix is effective and under which specific conditions. Based on an assessment of the interaction of policies from MS under their Article 7 notifications to the EC, some policies seem to complement others, while in other cases we have overlaps that can hinder the effectiveness of the policy mixes. This policy brief presents lessons on how buildings policy mixes could be made more effective and efficient.

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ENSPOL Energy Saving Policies

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1 Introduction

The EU Member States (MS) have produced reports to show how they will meet the targets set by Article 7 of the Energy Efficiency Directive (EED). They have taken a wide range of approaches, with most MS having employed a mix of policies, rather than single policies. Reasons why MS chose such mixes could be rooted across different contextual factors, including history, geography, politics and broader policy goals. Nonetheless, most MS are trying to encourage the adoption of similar technologies and it is worthwhile trying to understand the advantages and disadvantages of different policy mixes for doing this.

This Policy Brief synthesises the analysis of research done in the framework of the ENSPOL project[1] in order to get a better understanding of the types of policy mixes currently used in the EU, and to develop an analysis of the different types of mix. So far, the primary focus of policy literature has been mostly on evaluating single policy instruments. More recently, there has been a shift of interest towards policy coordination, complexity, and the role of the policy mix, mainly originating from climate policy, which has provided the background for analysing such interactions in the energy efficiency policy field. In this policy brief we demonstrate the key findings from most MS showing which types of policy interactions seem to work efficiently in the market, which can serve as guidance to MS that plan to introduce or amend the existing policy instruments they use for the Article 7 targets.

2 Policy classes

As a starting point, the ENSPOL project has defined six 'policy classes'. For a policy mix, several policies from one or more of these classes are to be combined. Therefore, it has been analysed to what extent policies from these classes are suitable for interaction with other policies, in order to create a policy mix.

2.1 Energy and/or CO_2 taxes

Energy or CO_2 taxes increase the cost of (carbon-based) energy and, as a result, energy efficiency should be favoured in any decision affected by economic considerations. Generally, energy and CO_2 taxes are compatible with all other instruments as they increase the incentives for people and organisations to use financial incentives and implement regulations to reduce their energy consumption, as well as using more efficient technologies. For instance in Italy, energy tax deductions have had a positive effect in existing technologies in the residential sector (heating and cooling and building envelope related ones) next to the existing White Certificate scheme, which addresses the industrial users.

[1] More information can be found in the D5.1 report of the ENSPOL project "Combining energy efficiency obligations and alternative classes".

2.2 Purchase subsidies

Energy Efficiency Obligations (EEOs) are classified as a 'purchase subsidy' because this is how they appear to beneficiaries. Combining purchase subsidies (EEOs, grants, tax rebates) with providing access to capital measures (loans, on-bill finance) for the same technologies is likely to deliver less savings compared to the sum of savings when those measures are used on their own. The reason is due to the fact that the same beneficiary can be over-paid for the same savings.

2.3 Access to capital

Loans and on-bill finance both offer access to capital. They are alternatives and would overlap if used together. Instruments in this class, such as loans, would overlap with purchase subsidies – as the recipient would be given two forms of financial assistance, where one should be sufficient. Access to capital however interacts positively with information measures.

2.4 Information and feedback

Instruments in this class include information campaigns, education, advice, feedback, and engagement. In general, it is found that those approaches with greater personal relevance have the greatest impact. All of these "information-based instruments" have the aim of removing barriers to energy efficiency. These instruments are judged to be complementary with all other instruments and within the same class. This is because they influence decision-making in a different way from other instruments as they, use social, psychological or behavioural economic mechanisms rather than economic influences. Coupled with all other policy instruments, they have reinforcing effects.

2.5 Minimum standards

Regulations setting minimum energy efficiency standards should not be combined with financial incentives (grants, loans, on-bill financing), because financial incentives are potentially used to fund investments which are required by law and would happen even in absence of those incentives. If used in sequence, financial incentives can be used to support 'early action' prior to regulation.

2.6 Underpinning measurement standards

Without standards and norms for measuring the efficiency of products, homes, insulation materials etc. most policy instruments would not be able to function. They are therefore not so much complementary as much as foundational for all policy instruments. Standards and norms help ensure that the quality of technologies adopted is high as well as increasing transparency and reliability, and reducing information asymmetries, which in turn reduces transaction costs. Underpinning measurement standards are therefore universally complementary to other instruments.

3 Policy mix by sector

Figure 1 provides an overview of the most commonly used policy instrument types for the purpose of complying with Article 7 of the EED across the 14 MS analysed.[2] In the residential sector the most frequently used instrument is grants (33%) followed by regulations (17%), loans (16%) and energy efficiency obligations (11%). The non-residential sector is very similar with the main exception being that no voluntary agreements were included in the sample. In the industry sector grants play a less important role (although they are still being the most frequently used instrument) and the various instrument types are more evenly distributed. In transport, regulations and loans are not used by the MS analysed for the purpose of complying with Article 7 of the EED. Not surprisingly, the cross-cutting category consists primarily of energy and CO_2 taxes and EEO schemes, which often target a wide range of sectors.

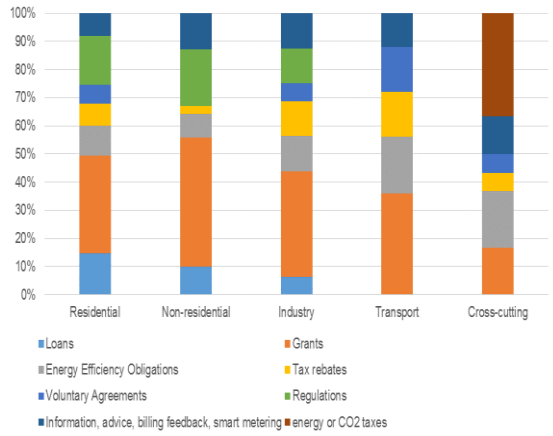

Figure 1: Policy mix by sector

In general, the analysis shows (Figure 2) that loans focus on the most complex and costly technologies which is in line with the evidence on loans being able to achieve higher leverage effects than direct subsidies of energy efficiency measures. Loans are closely followed by grants and EEOs which are firmly targeting technologies of medium complexity and cost. Tax rebates appear to focus on low to medium cost measures which is in line with the evidence from other global tax rebate programmes.. Voluntary agreements target a similar cost and complexity segment with regulations supporting slightly cheaper and less complex measures. As expected, information, advice, billing feedback and smart metering are located within the low cost and low complexity category. However, this policy instrument indirectly also helps facilitate the implementation of the other policy instruments that are focused on more costly and complex technologies. None of the instruments target highly complex and capital intensive technologies which indicates that further policy development is required in order to achieve deeper energy efficiency improvements.

[2] Austria, Belgium, Bulgaria, Denmark, Estonia, France, Germany, Greece, Italy, Netherlands, Poland, Spain, Sweden and the United Kingdom.

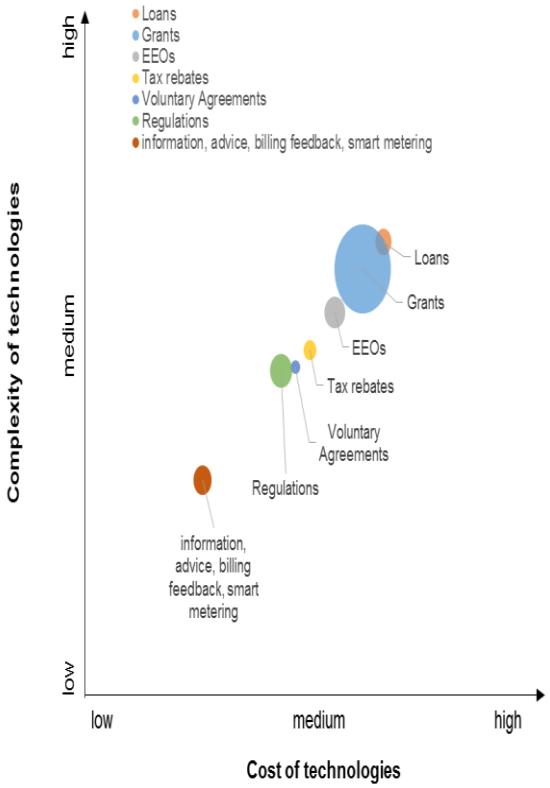

Figure 2: Taxation based on technology cost and technology complexity

3.1 Residential sector

Most policy instruments in the residential sector focus on the medium cost and medium complexity segment. As expected, loans clearly target the higher cost and complexity measures. Surprisingly, information measures target low cost but medium complexity measures, partly due to the inclusion of smart meters in this policy instrument category which are more complex than other information measures.

3.2 Non-residential sector

The focus of policy instruments used in the non-residential sector is very similar to the residential sector in that most policy instruments focus on the medium cost and complexity segment. However, loans are used to target more complex and costly technologies compared to the residential sector.

3.3 Industrial sectors

Policy instruments used in the industry sector focus on more complex and capital intensive technologies compared to the other sectors. Many energy efficiency improvements fall under particular sub-sectors and cannot be standardised easily as for example in the buildings sector. The industrial sector is the only one where loans are not used for the most expensive measures. Voluntary agreements target more costly measures than regulation which is expected as regulation defines the floor whereas voluntary agreements go beyond compliance.

3.4 Transport sector

The transport sector can be characterised by a relatively small number of policy instruments and types (there are no loans and energy taxes). The order of policy instruments does not differ from the patterns observed across the other sectors with increasing complexity and cost from information measures to grants. The previously noticed correlation between

cost and complexity is most profound in the transport sector with a clear linear correlation.

4 Discussion and conclusions

Using empirical evidence (alone) to measure the effectiveness of policy mixes is generally understood to be very problematic, given the lack of sufficiently good monitoring and evaluation of individual policies. It is particularly difficult in this case, as policy mixes are considered which may have only recently been put into place, to meet the requirements of Article 7. Thus, the analysis has been made with reference to literature, and using expert judgement across the ENSPOL team.

This analysis suggests that some policy instruments only interact with others in a positive way, meaning that their inclusion within a policy mix should always be encouraged in terms of effectiveness. The universally complementary policies, with the exception of taxation, are in most cases already in place at the EU level for energy-using products, buildings and building components. This includes energy labelling schemes, a requirement to introduce smart meters, and test standards and procedures (which may be international, rather than just at the EU-level). Their usefulness has been recognised by policy makers. The policies which tend to be neutral in their interactions, regulations and voluntary agreements, also have a strong place in the EU as well as on national level policy. Where these policies are missing for sectors or sub-sectors, their introduction should be considered.

While theoretical analysis suggests carbon or energy taxation would be complementary with all other policy types, countries take very different approaches on energy taxation across different types and sectors. Some countries, such as Sweden, have high rates of taxation, while others are as low as EU legislation allows. Theoretically useful policies can be politically unacceptable, or not fit with other policy goals. This illustrates one weakness of this method, which is that it can only consider the effect of a policy mix on a single goal (effectiveness), whereas policy is usually required to deliver multiple goals simultaneously.

In terms of managing the risk of counter-productive policy mixes, there are a relatively small number of policy instruments which can deliver less than the sum of their parts when combined. When these combinations appear in national policy mixes, this points to potential problems.

Given the many simplifications which were made to carry out this analysis, particularly the need to look at one success criterion only and to disregard many important contextual factors, it would be wrong to over-claim its potential usefulness to policy makers. However, it does offer a very clear way of thinking about policy combinations as well as identifying areas of potential under-performance, and last but not least, highlights policy instruments which can always make a positive contribution to a policy mix.