

Evaluating the Implementation of Article 7 of the Energy Efficiency Directive

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Abstract

The Energy Efficiency Directive calls for EU Member States to put in place ambitious energy efficiency policies. One of the most important Articles of the Directive is Article 7 which required Member States to implement Energy Efficiency Obligations and/or alternative policy instruments in order to reach a reduction in final energy use of 1.5% per year. This paper assesses how Article 7 has been applied by Member States and what the implications are. Analysing the notifications and National Energy Efficiency Action Plans of all 28 Member States we evaluate how Article 7 is implemented across the EU. This includes an analysis of the types of policies used, the distribution of the anticipated savings across the different policy instruments, and whether or not the way Article 7 is applied meets the requirements set by the Directive. Our analysis shows that Member States take very different approaches with some using tens of policy measures and others just one. We also identify areas of concern particularly related to the additionality of the energy savings, the calculation methods, and the monitoring and verification regimes adopted by Member States. We model to what extent the projected savings are likely to materialise. Currently only 14% of all energy savings have been rated as fully eligible, fully additional, at low risk of double counting and at low risk of non-delivery. Although the policies adopted by Member States would in theory be sufficient to meet the Article 7 targets, given the total expected savings, our analysis suggests that 86% of these expected savings are at least partially at risk of not being realised. We make suggestions for modifying the Energy Efficiency Directive in order to address some of the problems encountered.

Introduction

The European Union (EU) seeks to deliver a 20% reduction of projected primary energy consumption by 2020 across all 28 Member States. In order to achieve this, it has introduced a range of energy efficiency legislation. Most recently, the Energy Efficiency Directive (2012/27/EU) was introduced in 2012. This was designed to bring the EU back on track to achieve the 20% reduction target following analysis which showed that existing energy efficiency policy measures would leave a significant gap of more than half of the required reduction (EC 2011a). Under the Directive, all EU countries are required to use energy more efficiently at all stages of the energy chain from its production to its final consumption.

The Energy Efficiency Directive contains a number of different ‘articles’ which cover a variety of policies, including the renovation of public buildings (Article 5) and introduction of mandatory energy audits for large organisations (Article 8). However, the most influential article is Article 7. Article 7 sets out how countries are to calculate their national energy

savings targets, notionally based on a rate of 1.5% savings per year, and the policy means by which this may be achieved, with particular mention of Energy Efficiency Obligation Schemes. Article 7 is expected to deliver more than half of the required energy savings of the 20% reduction target and is therefore the most important component of the Directive in terms of its contribution (EC 2011b). It is the subject of this paper.

The Energy Efficiency Directive (EED) intervenes to a much larger extent in national governance of energy efficiency than previous EU policies. These have sought either to set common frameworks for energy efficiency policy in Member States, e.g. the Energy Performance of Buildings Directive (2002/91/EC) and the Energy Services Directive or to use EU competencies in trade policy to establish common labels and standards, e.g. through the Ecodesign Directive. Together these have increasingly influenced national energy efficiency policies of EU Member States. However, the EED takes a much broader approach by setting firm energy savings targets and by suggesting more exactly the types of policy instruments to be used. The EED is as close as the EU comes to an EU-wide energy efficiency strategy anchored by legislation (CES 2013). EU countries were required to transpose the Directive's provisions into their national laws by 5 June 2014, with savings required 2014 - 2020, so Article 7 has a period of 7 years in which to deliver savings.

In theory, Article 7 targets can be met by delivering energy savings from all sectors of the economy, with a wide range of policy instruments, across all technologies and non-technological efficiency interventions. However, savings delivered by Article 7 policies have to be additional to those expected from existing EU policies, and in practice this restricts where and how savings can be made. So, for example, the Ecodesign Directive already requires minimum efficiency standards for products. While Article 7 policies could go beyond the requirements of this directive and promote uptake of the most efficient products (to a greater extent than current energy labelling requirements), the existence of strong minimum standards reduces the space for policy action. Efficiency improvements to buildings should only be included if they go beyond those already mandated in the Energy Performance of Buildings Directive (EPBD). The EPBD requirements have been implemented differently in different member states (Maldonado, 2016), making the additional savings opportunities specific to each country. However, as new buildings are required to meet high efficiency standards in all MS, in general the main opportunities for national policy are in accelerating the rate and depth of renovation of existing buildings. Given existing EU efficiency requirements, 'additionality' is a key issue in evaluating Member States' implementation of Article 7.

This paper provides an ex-ante evaluation of Article 7 based on an extensive review of Member States' plans for its implementation. We evaluate to what extent Article 7 is likely to deliver its aims and how it is being implemented by Member States. The paper is structured as follows: First, we discuss the challenges of evaluation, with reference to the literature. Second we describe the methodology used in the analysis which follows. Then the process of setting national targets, and how these compare with the expectations for Article 7, are described. We analyse the types of policies implemented and planned by Member States including a distribution of the anticipated savings across the different policy instruments. Finally, we identify areas of concern, in particular the additionality of the energy savings, the calculation methods, and the monitoring and verification regimes adopted by Member States. We discuss these findings and make a number of suggestions for modifying the EED.

The challenge of evaluation

Despite the rising influence of EU legislation on national energy efficiency policy, the literature evaluating energy efficiency policy at the EU level is rather scarce. A recent systematic review of peer-reviewed energy efficiency programme ex-post evaluations (Wade and Eyre 2015) identified only four studies analysing the effectiveness of EU energy efficiency policies (Bertoldi et al. 2001; Saussay et al. 2012; Schiellerup 2001; SRC 2001). All of the other papers found by Wade and Eyre deal with the evaluation of national energy efficiency policies. There are some studies that undertake pan-European analyses. For example, Filippini et al. (2014) carried out an econometric analysis of the level of energy efficiency across EU Member States and the impact of energy efficiency policies. However, they did not explicitly evaluate the impact of specific EU policies but instead focus on the role of national policies adopted, some of which are driven by EU initiatives. With regard to ex-ante evaluations, we are not aware of any peer-reviewed papers carrying out ex-ante evaluations of EU energy efficiency policies – the available ex-ante evaluations of EU energy efficiency policy are all located in the grey literature.

The wide-ranging nature of Article 7, and the way in which it interacts with other efficiency policies, makes it particularly difficult to evaluate. Article 7 is deliberately flexible; it allows MS to choose how to deliver their savings commitments. As explained later, most MS have chosen a different mix of policies to deliver savings. Even policies which might seem similar, such as Energy Efficiency Obligation Schemes, can be very different in intent, design and delivery (ENSPOL 2015a,b). This heterogeneity of policy responses necessarily makes any form of independent policy evaluation across MS very challenging.

In addition, the policies used to deliver Article 7 will just be one part of the policy mix delivering energy efficiency in each Member State (Figure 1). All EU countries also have an existing suite of EU efficiency policies. In addition, in some countries with efficiency targets higher than those mandated in Article 7, there are additional national and sub-national efficiency policies, which do not need to be notified to the Commission, as Article 7 targets can be met without them.

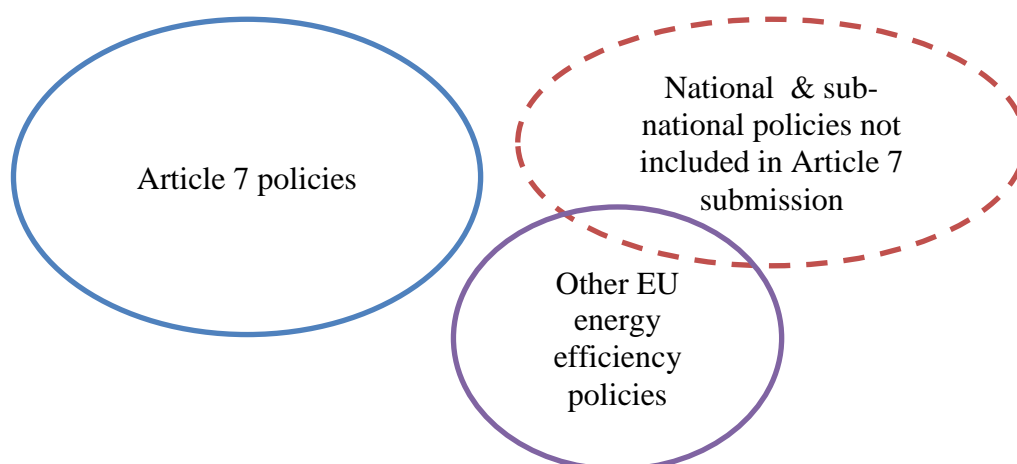


Figure 1: Groups of policies influencing national energy efficiency

Ex post evaluation is not yet an option for Article 7. At present Eurostat data is only available for the first year in which Article 7 should have had an effect (2014). In future, when data is available for several years, this will still not be straightforward because energy

use is influenced by a wide range of economic, climatic and social factors, as well as by energy efficiency policy, of which Article 7 policies form just one part.

Methodology

The data presented in this paper are based on a number of different pieces of work, to which the paper authors have previously contributed / led:

- Formal evaluation of Article 7 carried out for the EU Commission (Forster et al 2016, Rosenow et al 2015)
- Evaluation and descriptive work carried out within ENSPOL project
- Work for the European Parliament (Egenhofer et al 2016)

The most comprehensive source of data is the formal evaluation for the EU Commission, and so the methods used in these piece of work are described in further detail. Where no other source is quoted in this paper, data and analysis is derived from this work.

Evaluation for the European Commission

Sources used for this ex-ante evaluation include:

- formal notification of Member States' detailed plans to reach Article 7 targets, due by 5 December 2013;
- relevant additional information on Article 7 provided in the National Energy Efficiency Action Plans;
- information and data on progress provided in the Annual Reports due by 30 April 2015;
- replies by Member States to EU 'pilots' requesting additional information on the implementation of Article 7 (not publicly available).

In order to assess the plans of the 28 Member States the study team developed a data capture template, which was used to systematically analyse the documents submitted by Member States. The template included sections on:

- the baseline used to calculate the target and any exclusions made;
- the exemptions applied;
- the energy savings target;
- the list of policy measures used and the projected energy savings of each policy measure; and
- each individual policy measure covering the policy type, the calculation methods applied, the way additionality is addressed; the eligible measures supported by the policy instrument; the lifetimes used, and the monitoring and verification regime adopted.

For each Member State the template was populated with data, peer-reviewed by another member of the study team, and updated several times to reflect the most up-to-date information. The information presented in this paper is based on documents available up until 5th of October 2015.

Based on the 28 data templates, a database was developed. For each of the individual policies and measures, information was extracted on the main characteristics of the measure, and other information relevant to the calculation of the energy savings of the measure. The information within the database is entirely based upon the information provided by Member

States to the European Commission; it has not been possible to validate or cross check this information against other sources given the amount of material reviewed.

A similar process was carried as one component of the ENSPOL project (ENSPOL 2015a,b,c). However, this project covered 12 countries not all 28, and did not have access to material from the EU Pilots, so it is the Commission evaluation material which is used here, unless otherwise stated.

Setting national targets

Article 7 requires Member States to set an energy savings target for the period 2014-2020. Member States had to provide the calculation used to derive their cumulative energy savings target. This calculation needs to be based on a savings rate of 1.5% per year compared to the average energy consumption in the period 2010-2012. However, the total energy savings target may be lower than this savings rate for two reasons:

- 1) Member States can exclude the entire energy consumption of the transport sector, energy volumes transformed on site and used for own-use, and those that are used for the production of other energy forms for non-energy use.
- 2) Member States can use exemptions. Four different exemptions may be used, with the proviso that the maximum threshold of the exemptions should not exceed 25% of the target, based on the 1.5% per year saving rate.

Most Member States made use of both options to reduce their national savings targets. As a result, the average energy savings across the EU are approximately 0.75% per annum, half the headline rate of 1.5%.

Checking total energy savings against the Directive's intention

A key question is how the savings expected based on MS implementation of the Directive compare with its original goals. The first Impact Assessment of Article 7 assumed that, by 2020, annual savings in primary energy of 108-118Mtoe per year would be delivered (EC 2011b). This figure was based on the Commission's proposal and did not include exemptions and policy overlaps. Subsequent analysis (EC 2015a), based on the final negotiated EED text, provided an updated estimate for annual savings in 2020 of 84.8Mtoe. Figure 2 compares these estimates with energy saving targets based on MS calculations (as above) and expected savings calculated from declared policy measures and MS statements on savings they expect.

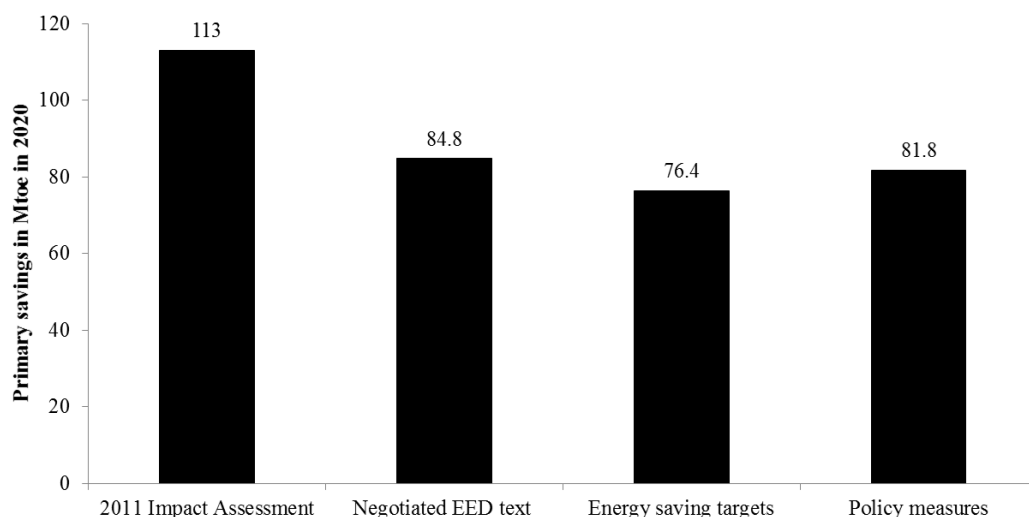


Figure 2: Comparison of proposed energy savings targets and policy measures to the Impact Assessment and Commission estimate based on final EED text

To calculate the savings expected from MS policy measures, a number of adjustments to the raw data reported were necessary, including making assumptions about annual savings (compared with cumulative savings), the lifetime of measures and conversion factors between final and primary energy (for a full description of this analysis see Forster et al, 2016).

This analysis shows that the energy savings targets and the savings from policy measures are 10% and 2% lower respectively than the estimate provided by the Commission, based on the final EED text (cf. Figure 2). This means that a) Member States plan to over-deliver against their energy saving targets and b) that the expected energy savings are close to the ambition of the negotiated EED text.

Policy measures

In this section we provide an overview of the types of policy measures implemented across all Member States. In total, Member States have implemented or plan to implement 479 policy measures. Five Member States have notified a single policy measure for the implementation of Article 7: Denmark, Poland and Bulgaria, and Luxembourg notified only EEOS whereas Sweden exclusively uses an energy/CO₂ tax. By contrast Germany has adopted 112 policy instruments, and Slovakia 66. This shows that there are significant differences in how Member States comply with Article 7.

There have been attempts to develop criteria for selecting optimal policy measures for compliance with the Energy Efficiency Directive (Mikucioniene et al. 2014) but in reality Member States do not use a consistent approach when deciding on which policy measures to implement. In many cases, existing policies determine the selection of policy measures for compliance with Article 7 (75% of all policy measures (Rosenow et al. 2015)), although some Member States have decided to follow the default recommendation of Article 7 to adopt EEOS as the analysis below illustrates.

Categorisation

The Directive allows for the use of any policy measures that result in end-use savings equivalent to the target defined by Article 7. It provides a typology of policy measures that can be considered for implementation, which has also been used in this paper:

- **EEOS: Energy Efficiency Obligation Schemes** oblige energy suppliers and/or distributors to deliver a specified amount of end-use energy savings within a defined period of time.
- **Energy efficiency national fund:** many MSs operate a national fund for financing energy efficiency measures. In this context, it either means a fund where obligated parties can make an annual financial contribution to fulfil their obligation under Article 7 as defined in Article 20(6) or a fund, from which Member States provide financing schemes (loans, grants, cf. point below) or fiscal incentives, or other alternative measures according to Article 7(9).
- **Energy or CO₂ taxes:** a levy on energy and/or the carbon content of energy above minimum EU-requirements that - by increasing the price of the energy - incentivises energy saving (where 'energy' includes all forms of energy products, combustible fuels, heat, renewable energy and electricity). Financial stimuli to energy efficiency investments through the taxation system (e.g. tax rebates for building renovation) are included in the financing and fiscal incentive policy group.
- **Financing scheme or fiscal incentive:** such schemes provide monetary support from public sources that are allocated either on the basis of application (e.g. applying for a grant under a renovation support scheme) or induce energy saving actions automatically (e.g. automatic eligibility to tax concession when purchasing an electric vehicle).
- **Regulation or voluntary agreements:** voluntary agreements are typically agreements by a sector -or group of similar actors- with public authorities in which they commit to a) reduce end-use energy consumption over time, b) design and implement an energy efficiency plan, or c) apply specific energy efficient technologies. Regulations – in this context - are obligatory and legally binding measures that do not belong in any of the other categories.
- **Standards and norms:** these administrative measures aim at setting minimum energy efficiency requirement of products and services in addition to mandatory EU requirements.
- **Energy labelling schemes:** energy labels provide easy-to-understand energy use information of products that facilitate energy-conscious consumer choices.
- **Training and education:** educational actions that results in the use of efficient technologies or behavioural changes reducing end use consumption.
- **Other policy measures:** this category comprises any other policy measures that do not fit with the main categories of policy instruments.

Share of different policy measures

Notified energy savings were aggregated by policy instrument type (Figure 3). The largest share of the overall savings is expected to be generated by EEOS (34%), financing schemes or grants (19%), and from taxes (15%). From the perspective of the beneficiary, EEOs provide an economic incentive to install energy efficiency measures (Rosenow et al. 2014, Rodhe et al. 2014). Taxation measures provide an indirect financial incentive to invest in energy efficiency as they increase the cost for using energy and reduce the payback periods of energy efficiency improvements. Thus, together, instruments changing the cost profile of energy efficiency investments are expected to generate about 2/3 of the overall savings.

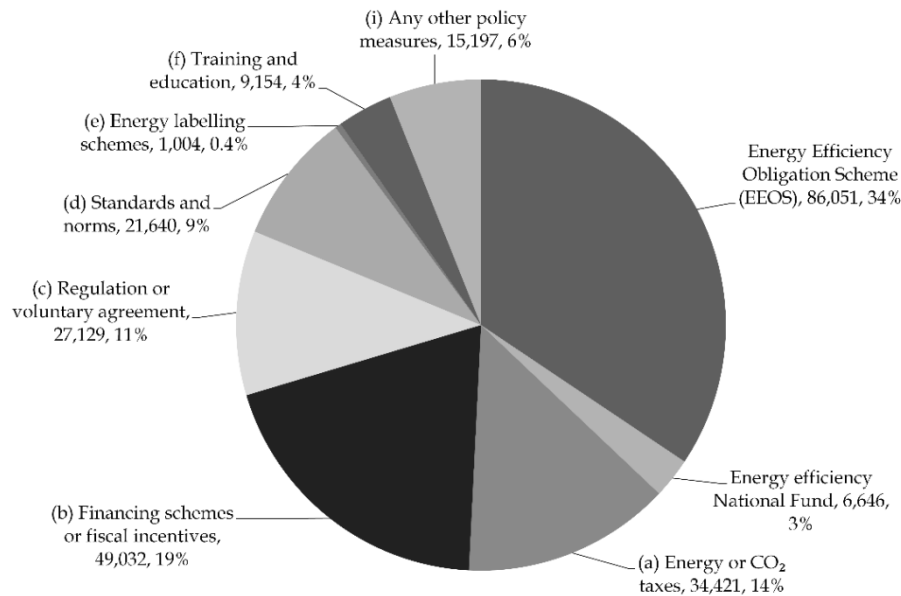


Figure 3: Expected energy savings by policy measure type (ktoe, %)

In the period 2014-2020 most of the savings (44%) come from measures that are cross-cutting, i.e. apply across more than one sector (such as taxes and financial incentives applying to multiple sectors). 42% of the savings is expected by the Member States to come from buildings. The direct contribution from industry is much smaller (8%), and transport smaller still (6%).

Assessment of the credibility of the notified savings

The energy savings presented above are based on the estimates provided by Member States in their notifications. However, it is necessary to consider whether these estimates are realistic or credible. To investigate this, four indicators to assess the credibility of the notified energy savings were used:

- **Eligibility:** This indicator addresses the purpose of the policy measure, i.e. whether the measure is primarily targeted at achieving end-use energy savings or whether it mainly focuses on other objectives e.g. renewable energy deployment. Only policy measures that deliver end-use energy savings are eligible.
- **Additionality:** This indicator relates to the additionality of the policy measures to minimum EU standards and in particular whether or not the requirements of the EPBD have been taken into account when calculating the energy savings.
- **Risk of non-delivery:** This indicator addresses the risk on non-delivery of the notified amount of savings. This depends on a wide range of issues such as potential over-estimations of energy savings due to methodological shortcomings.
- **Risk of double counting:** This indicator encapsulates that potential for overlap between policy measures targeting similar sectors and, as a result, the risk for double counting of energy savings.

These indicators do not explicitly look at ‘materiality’, another requirement of Article 7, which says that activities must be ‘demonstrably material to the achievement of the claimed savings’. The relationship between materiality and additionality is complex and

under-defined in the directive and guidance notes. Labanca and Bertoldi (2016) argue that if a policy is additional, it will necessarily be material, and that ‘additionality requirements alone should therefore be sufficient to prove the material contribution of involved actors’ (2016:39). This is the view also taken in this research, where only additionality was assessed.

For each of the indicators we analysed the evidence provided by Member States for each policy measure against a set of evaluation questions for each indicator. The results of the analysis for all indicators are presented in Table 1.

Table 1: Credibility assessment of notified energy savings

Indicator	Result
Eligibility	
Fully eligible	68%
Mainly eligible (>50% of savings eligible)	26%
Mainly not eligible (>50% of savings not eligible)	5%
Unclear	1%
Additionality	
Fully additional	43%
Mainly additional (>50% of savings additional)	24%
Mainly not additional (>50% of savings not additional)	14%
Unclear	19%
Risk of non-delivery	
Low	57%
Medium (>50% of savings likely to be delivered)	13%
High (>50% of savings at risk of not been delivered)	6%
Unclear	24%
Risk of double counting	
Low	81%
Medium (>50% of savings not at risk of double counting)	12%
High (>50% of savings at risk of double counting)	1%
Unclear	6%

Source: Forster et al, 2016

Currently only 14% of all energy savings have been rated as fully eligible, fully additional, at low risk of double counting and at low risk of non-delivery. This means that 86% of all savings are at least partially at risk of not being realised. This is a very striking figure.

ENSPOL has also looked at the plans of a subset of MS in considerable detail and identified key concerns for individual policies in each country, which highlight similar issues seen in the overview above. Labanca and Bertoldi (2016) have considered energy savings calculation methods and the impact these may have on delivering savings from Article 7, also identifying concerns. They looked at savings from taxation measures, estimation of which typically involves data-intensive econometric modelling. This requires accurate evaluation of trends, and data on a variety of macro-economic and structural factors, and the authors suggest more information is needed on how MS have evaluated and taken into account these factors. They also describe weaknesses in the methods and data used to calculate savings from the transport sector and from information measures, which include issues of double-counting, additionality and the persistence of savings.

Discussion

Assessing the plans of Member States involves considerable challenges both in terms of the complexity of the subject matter as well as the quantity of material that needs to be assessed. Most of the results of this paper are based on a detailed analysis over the course of two years analysing 7,653 pages of material submitted by the Member States to the European Commission. The volume of material is likely to increase over time.

Overall, it appears that Member States should be on course to deliver savings close to those envisaged in the Energy Efficiency Directive, if the savings envisaged on paper materialise in real life.

However, there are considerable uncertainties around the reliability of the energy savings estimates provided by Member States. Lack of additionality and the risk of non-delivery are key concerns. The risk of non-delivery derives from the lack of a consistent approach to monitoring and verification systems, and multiple methodological issues often not addressed by Member States when it comes to calculating energy savings from specific policy measures. The issue of eligibility of notified savings (e.g. those from renewable energy technologies) can be expected to be resolved as this is a simple compliance question. Double counting does not affect a large part of the notified savings.

We address additionality, monitoring and verification and calculation of energy savings in turn before we provide a number of suggestions for policy reform.

Additionality

Based on Table 1, additionality is the most significant concern about Article 7. A significant part of notified savings is at risk of not being additional to what would have occurred in the absence of policy. Some Member States have designed robust and comprehensive policy packages, but these are far from universal. One reason for the small number of Member States who addressed additionality comprehensively is likely to be the scarcity of detailed guidance issued by the European Commission and thus a lack of understanding of what is required.

The additionality of energy efficiency programmes has been discussed in the literature for some time (Vine and Sathaye 2000). Given that additionality is recognised as being an important element of energy efficiency policy the EED makes important provisions for how additionality should be ensured. First, any savings notified under Article 7 must be additional to existing EU minimum requirements. In particular, this includes the Energy Performance of Building Directive and the Ecodesign Directive (cf. discussion in Introduction section above). Second, when calculating energy savings Member States need to give consideration to the potential impact of free-riders i.e. beneficiaries of the policies that would have undertaken energy efficiency improvements even in absence of the policies. The issue of free-ridership has been discussed in the literature at length (e.g. Saxonis 1991) but in our analysis we found only very few Member States who appear to have systematically excluded free-rider effects from their estimates. This lack of a counterfactual appears to be a common problem in European climate policy evaluation (Haug et al. 2010).

Monitoring and verification

Whilst the information Member States submitted on their energy targets, the policy measures and the expected savings is relatively complete there are substantial gaps with

regard to monitoring and verification regimes adopted across the EU. In many cases the monitoring and verification system is described in the NEEAPs and the Article 7 notifications at a very high level only whereas in other instances even the most basic information is missing. However, partial or missing information on monitoring and verification does not necessarily imply that there are no robust monitoring and verification systems. Still, there is a significant risk that monitoring and verification regimes are weak and do not ensure that the estimated energy savings will be delivered in reality.

Recent analysis by Schlomann et al. (2015) illustrates that this is largely a result of the lack of binding rules for monitoring and verification at the EU level that provide sufficient detail and clarity to Member States. A lack of clarity of expectations for Article 7 provides potential loopholes and does not result in a consistent approach to monitoring and verification across the EU. Member States adopt different approaches to calculate their energy savings, and report on their methodologies in different ways. This may be well justified, since some calculation approaches are better suited to some policies than others. However, as a result of this flexibility, the energy savings that are notified by Member States, and the information reported on methodologies, are not fully consistent or comparable at an EU level. This inconsistency generates uncertainty about whether the EU is on track to deliver its target, and reduces the integrity of the savings that are claimed at an EU level.

Calculation of energy savings

Energy savings estimates often do not account for factors that reduce or increase the estimated savings. It has not been possible to review if and how those factors have been accounted for in Member States' estimations for all policy measures but initial probing suggests that for a large proportion of cases this may not be the case. Key issues which require further attention include the rebound effect, i.e. the fact that in theory energy efficiency improvements can be offset by increased demand for energy services. Also, assessments of energy efficiency programmes in buildings need to take account of the energy performance gap, i.e. the growing body of evidence that energy efficiency projects reduce actual energy consumption by less than the prediction of simple building physics models. Initial results suggest few countries in the EU systematically account for these effects. These factors should be taken into account in future programme evaluation for the purpose of reporting on Article 7.

The uncertainty and reliability of policy impact estimates appears to be a general issue in European energy and climate policy - less than 10% of the entries in the 2011 reporting cycle of the Monitoring Mechanism on emissions reductions in Member States included quantitative data based on ex post evaluations (Hilden et al. 2014). This finding is consistent with the analysis by Stern and Vantzis (2014) who argue that most evaluations carried out in EU Member States rely on ex-ante estimates whereas in the US the use of ex-post evaluations is more common. There are also significant differences with regard to the professional evaluation capabilities in the Member States (Huitema et al. 2011), which partly explains the inconsistencies in Member States' approaches.

Suggestions for policy reform

Policy reform could help resolve the key issues of non-additionality, the lack of robust monitoring and verification regimes, and poor quality calculation of energy savings. The requirements in the Directive related to additionality, policy overlaps and monitoring and verification should be re-visited with the view of providing more clarity and detail. Alongside this, templates covering all of the requirements in a systematic manner accompanied by clear

guidance would a) enable Member States to understand what exactly is required and how they have to report compliance and b) help the Commission with ensuring that the EED is implemented as intended.

Additionality is difficult to calculate and prove, and the Commission needs to give Member States as much help with this as possible (and remove excuses for questionable practice). Annex V – the technical annex to Article 7 - should state comprehensively which EU minimum requirements need to be considered. In addition, clear guidance on how to factor in EU minimum requirements in energy savings calculations with some worked examples would enable Member States to follow this approach more consistently. Finally, Member States should be required to report to the Commission in detail how they have ensured that savings from existing EU minimum requirements are not included in their estimates.

The inconsistent approach to measuring energy savings and monitoring and verification leads to considerable uncertainties. Following the implementation process of the Energy Services Directive in 2006 similar issues were discussed in the literature (Boonekamp 2006; Thomas et al. 2012). This literature can form the basis of a clear and consistent approach to monitoring and verification of energy savings across the EU.

Conclusions

Article 7 of the Energy Efficiency Directive is the most important delivery mechanism for energy efficiency in the EU, and in theory should deliver substantial energy savings to 2020. This paper provides an ex ante evaluation of how Member States have implemented Article 7, the policies they are using to deliver savings, and the degree to which these theoretical savings can be relied upon.

Article 7 is deliberately flexible; it allows MS to choose how to deliver their savings commitments. MS have chosen different mixes of policies. Further, even policies which might seem similar, such as Energy Efficiency Obligation Schemes can be very different in intent, design and delivery. This heterogeneity of policy responses necessarily makes any form of policy evaluation across MS very challenging. Added to this the sheer amount of documentation (over 7,000 pages to date, and rising), and lack of standard reporting formats further increases the challenge.

The good news is that Member States have submitted policies in theory sufficient to meet the Article 7 targets. The less good news is that there are considerable uncertainties around the reliability of these expected energy savings. This results from the inclusion of non-energy efficiency measures, the potential non-additionality of savings, double counting, the risk of non-delivery, and the implications of weak monitoring and verification systems. A significant share of the expected savings is at risk of not being delivered in practice. This puts into question whether the EED will achieve its aims.

A number of suggestions for policy reform were developed that would strengthen the Directive and increase the reliability of the anticipated energy savings. Needed are more detailed provisions, extensive guidance, and reporting templates that ensure Member States follow a more consistent approach in calculating the savings and reporting them as well as outlining their monitoring and verification regimes.

In addition, Member States have a responsibility for refining their plans to address the issues discussed above – they need to respond to the spirit as well as the letter of the legislation. This includes a more systematic development of implementation, funding and evaluation capabilities to reflect the ambitious requirements in the Energy Efficiency Directive.

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