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Perspectives

Assessing the European Union's energy efficiency policy: Will the winter package deliver on 'Efficiency First'?

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ABSTRACT

The European Commission's so-called 'Winter Package of energy legislation will provide the framework for energy policy in the European Union for many years to come. It contains proposals for a whole range of energy-related issues including energy markets, energy infrastructure, renewable energy, climate policy and also energy demand. In this paper, we carry out a preliminary review of the proposals and what they mean for energy efficiency. The European Union has adopted the principle of "Efficiency First" through the launch of the Energy Union Communication in February 2015. We assess the extent to which the Winter Package keeps the promise of putting energy efficiency first. More specifically, we analyse the revised Energy Efficiency Directive (EED), the Energy Performance in Buildings Directive (EPBD) the Directive on common rules for the Internal Energy Market for electricity (IEM), the Regulation on the electricity market, and the Regulation on Governance of the Energy Union. We conclude that, while there are many improvements across the different pieces of legislation, the Winter Package falls short of comprehensively reflecting the Efficiency First principle. The paper provides a number of concrete policy recommendations in order to incorporate the Efficiency First principle more fully into the proposed set of European energy legislation.

1. Introduction

2017 will be a big year for European energy policy. The legislative proposals in the European Commission's recently released and long-awaited 'Winter Package' (also branded as 'Clean Energy for All' proposals) [1] will be negotiated in the European Council and European Parliament. Those negotiations will be of critical importance as the Winter Package addresses all areas of the energy system and will shape the policy framework for many years post-2020. Energy efficiency is one of the key elements of the Winter Package and features in the various legislative proposals.

In this paper, we examine some of the key elements of five of the proposed legislative instruments that directly affect the Energy Union's goals to deliver greater energy efficiency to European energy economies: the revised Energy Efficiency Directive (EED), the Energy Performance in Buildings Directive (EPBD) the Directive on common rules for the Internal Energy Market for electricity (IEM), the Regulation on the electricity market, and the Regulation on Governance of the Energy Union.

Our assessment is carried out against the commitment of the European Union to make 'Efficiency First' a guiding policy principle in future energy policy making [2]. Efficiency First is a principle applied to policymaking, planning and investment in the energy sector. Put simply, it prioritizes investments in customer-side efficiency resources (including end-use energy efficiency and demand response) whenever they would cost less, or deliver more value, than investing in energy infrastructure, fuels, and supply alone [3–6]. At a first look, this is purely a common-sense policy – surely public policy should promote end-use efficiency whenever saving energy or shifting its use in time costs less or delivers greater value than conventional supply-side options. However, through long experience we know that this does not happen by itself. On the demand side, investments in efficient solutions are impeded by numerous market barriers to individual action; and on the supply side, industry traditions, business models and regulatory practices have always favoured, and continue to favour, fossil fuel based

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energy infrastructure and sales over lower sales and energy saving technologies.

Implementing Efficiency First comprehensively is a big task for the European Union and the Winter Package takes first steps towards making this a reality. Below, we analyse each of the policy proposals made in the Winter Package in turn and assess them against the ambition that the Efficiency First principle represents. We then summarise the main policy recommendations and conclude.

The Winter Package consists of around 4500 pages of legislation and associated documents. It would be impossible to analyse all of the planned energy efficiency provisions in one paper. Instead, we focus on key elements of the Winter Package providing a critical view on whether or not the proposals are likely to deliver on energy efficiency. Our assessment is informed by previous analyses of European energy efficiency policy [3,7,4,8–10,11,5].

2. Energy Efficiency Directive

The EED (2012/27/EU) was designed to achieve a 20% energy consumption reduction target across the EU. The Energy Efficiency Directive puts in place a number of important provisions to be implemented by Member States including the requirement to establish binding national energy efficiency targets (Article 3), national building energy efficiency strategies (Article 4), a requirement to renovate 3% of public sector buildings each year (Articles 5 and 6), the need to establish energy efficiency obligation schemes (Article 7), and provisions for auditing and metering (Articles 8–12). The most important Article of the Directive (Article 7) requires 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 [5,6]. 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 EED in terms of its contribution [12].

The proposed revisions in the Winter Package primarily concern the headline target and Article 7. Some revisions are proposed for other articles of the EED but we focus on the headline target and Article 7 as those are the key elements under revision.

2.1. Headline target

The Winter Package proposes a 30% energy savings target by 2030, instead of the 27% initially discussed in the 2030 Energy Strategy [13]. The target relates to a reduction of primary energy compared to a 2007 baseline. The Commission's analysis suggests that a 30% target represents a drop in final energy consumption of 17% by 2030 compared to 2005 [14].

Previous analysis has demonstrated that the cost-effective potential for energy efficiency exceeds 30% of primary energy compared to a 2007 baseline significantly [15] and this is one of the reasons the European Parliament has called for a 40% target by 2030 [16]. This means there is a case to be made for a more ambitious target for economic reasons alone. This is also illustrated by analysis in the Commission's impact assessment of the EED which shows substantial economic benefits from a more ambitious target [17].

The other main change regarding the headline target is the nature of the target. Previously, the 20% target was non-binding and Member States were required to indicate their individual contributions to that target to the European Commission.

2.2. Sunset clause

As outlined above, the EED previously required Member States to set targets for 2020. This potentially provided a disincentive to Member States regarding the promotion of technologies with long lifetimes and longer payback periods. The 1.5% target now extends to 2030 and for 10 years beyond unless it is concluded that this is no longer necessary in order to meet the EU's energy targets. This change will provide investor certainty over a time horizon of 20 years and is an improvement of the current version of Article 7.

However, by creating a new "starting point" in 2021, the EED creates a new opportunity for slippage in attainment. The revised Article 7 introduces a new savings period (2021–2030) in addition to the existing period (2014–2020). For each period, cumulative savings equivalent to 1.5% added each year (minus exemptions and exclusions) must be reached by the end of the period.

In a process that requires sustained, growing savings over time, claimed measures that are no longer delivering savings must be replaced either in situ, or with new measures. Under the EED today, savings by technologies installed before 2020 with lifetimes coming to an end before 2030 would need to be replaced in order to keep the same level of energy efficiency improvements. Using data from Forster et al. [11] we estimate that by 2030 about 18% of all measures implemented before 2020 will no longer deliver savings in 2030 and beyond, and those currently do not need to be replaced. This is equivalent to 7% of the sum of the cumulative savings delivered over both periods. In other words, resolving the issue of short lifetimes and replenishing 'old' savings would lead to 7% more energy savings over the period 2014–2030 (Fig. 1).

This matter becomes more severe over time and by 2040 only about ¼ of all savings resulting from measures implemented before 2020 are still 'alive'. The most straightforward answer to this problem is to require Member States to account for savings erosion from earlier measures as they leave the system and to compensate for them with additional savings in the relevant time frame (2020–2030).

2.3. Treatment of old savings

As described before, Article 7 requires Member States to implement measures that achieve 1.5% annual incremental savings of final energy sales in the period 2014–2020. The new period in which 1.5% savings have to be achieved is 2021–2030.

In a previous leaked version of the proposed EED the wording was unclear, implying that Member States could potentially count against future years' incremental savings requirements (in the period 2021–2030), savings from measures that were delivered before 2020, provided their lifetimes extend beyond 2020. Based on data provided by Forster et al. [11], we estimate that this effect could have reduced the level of ambition under the EED between 2020 and 2030 by 84%.

Article 7 now clearly says that *new savings from new measures* are required. Under the more recent proposal, Article 7 will continue to deliver new savings at the same rate as before 2020.

2.4. Exclusions and exemptions

A number of exclusions and exemptions currently allow Member States to reduce the 1.5% target – this has resulted in planned savings of just ~0.75% per year [5,6]. In the proposed EED the same exclusions from the baseline can be made (transport, non-energy use). The exemptions remain the same but now include renewable energy produced and consumed on site. To include renewables within the exemptions has little impact for now on the level of energy savings required given that almost all Member States fully use the exemptions up to the 25% maximum already [11].

2.5. Additionality

As a general rule, efficiency performance that merely complies with broadly-applicable standards does not qualify as "additional"