



How is Article 7 of the Energy Efficiency Directive being implemented? An analysis of national Energy Efficiency Obligation Schemes

Paolo Bertoldi and Luca Castellazzi

European Commission, DG Joint Research Centre

Vlasis Oikonomou Joint Implementation Network

Tina Fawcett ECI, University of Oxford

Niki Artemis Spyridaki UPRC, University of Piraeus

Nele Renders and Ils Moorkens VITO

Joint
Research
Centre



Introduction - 1

- One of the key articles of the EED is **Article 7**, introducing **Energy Efficiency Obligation Schemes (EEOS)**. Article 7 of the EED requires MSs to achieve a certain quantity of final energy savings in end-use sectors.
- Article 7 of the EED requires MSs to establish Energy Efficiency Obligation schemes (EEOs) mandating energy retail energy sales companies or distributors to reach energy savings targets or use alternative policy measures to deliver a targeted amount of energy savings amongst final energy consumers.
- The energy savings to be achieved by EEOs must be at least equivalent to achieving new savings each year from **1 January 2014 to 31 December 2020 of 1.5% of the annual energy sales** to final consumers of all energy distributors or all retail energy sales companies



Introduction - 2

- The EED required the MSs to submit plans for EEOs and/or equivalent alternative measures by 5 December 2013.
- MSs are allowed to exclude all sales from transport from the baseline, and all but Sweden did so. Furthermore, countries are allowed to use exemptions up to reduce their target by a maximum of 25%.
- The 25% exemptions include 4 specific elements:
 1. progressive phase-in of the target;
 2. exclusion of energy sales in the ETS sector;
 3. energy savings from early actions;
 4. energy savings achieved in the energy transformation, distribution and transmission sectors implemented under Articles 14 and 15 of the EED.



Introduction - 3

- As an alternative to setting up an EEOS, MSs may opt to take other policy measures to achieve the same savings among final customers. Also, a combination of EEOs and other policy measures is possible; this is in fact the solution chosen by the majority of MSs.
- In the paper we focus only on the EEOs introduced by MSs and not on the alternative measures.

Suppliers Obligations - 1

- In the early 2000s, in some EU MSs, the role of **energy companies** in providing energy efficiency were regulated by law and targets were introduced.
- This **market-based policy** oriented towards end-use energy efficiency is based on **energy-savings quota** (obligations) for some categories of energy market operators (usually energy distributors or suppliers.)
- The savings are normally be **verified** by the regulator
- In some national schemes are certified by means of the so-called '**white**' **certificates** (certificates for energy savings).
- In some national schemes the **trading** of certificates or energy-efficiency measures is allowed; in this case other parties that are not subject to an energy-saving quota can also be allowed to certify the energy savings from eligible projects and sell the white certificates



Suppliers Obligations - 2

In principle a portfolio or obligation for energy savings involves four (five in case of trading) key elements:

- Creation and framing of the demand (obligation, obliged parties, eligible parties, sectors);
- Processes to support the scheme and the market (measurement and verification, evaluation methods and rules for issuing certificates, a data management and certificate tracking system and a registry);
- Cost recovery mechanism in some cases, and
- Enforcement mechanisms and sanctions.
- And in the case of tradable certificates: Tradable instrument (certificate) and the rules for trading.

Similar policy portfolios have been introduced in Italy, Great Britain, France, Denmark and the Flemish region of Belgium. Poland introduced a white certificate scheme in 2009.



MSs plans to meet the energy saving target of Article 7:

- EEOS only: Bulgaria, Denmark, Luxembourg and Poland (of these countries, only Denmark has long and successful experience of an EEOS policy)
- EEOS plus alternative policies: Austria, *Belgium*, Croatia, Estonia, France, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, Slovenia, Spain, UK
- Alternative policies only: Cyprus, Czech Republic, Finland, Greece, Germany, The Netherlands, Portugal, Romania, Slovakia and Sweden

Timescale

- EEOS are not an immediate means to delivering energy savings. It usually takes a number of years from design of an EEOS to delivery of significant savings, due the following elements: discussion with relevant stakeholders, learning by the obligated parties how to implement energy efficiency projects, sector delivering energy efficiency services needs to be built up establishing the relevant M&V procedures, establishing the overseeing authority and enabling it to verify projects, savings and possibly issue sanctions.
- Many of the existing schemes started with low targets (e.g. Italy, France, Flanders). The targets in these schemes were increased over time, allowing a "learning" period



Similarities and differences

- As for the existing schemes, all the planned EEOs have differences in design as allowed by the EED: e.g. obligated parties (distributors or retailers; type of energy supplied: electricity, gas, heating oil, district heating, transport fuel), eligible sectors, eligible projects, M&V, the fund raising mechanism, cost recovery, issue of certificates, trading.
- Design is driven by a combination of national circumstances (e.g. policy priorities and baselines), long discussions / negotiations with stakeholders, and, perhaps, the 'not invented here' syndrome (i.e. the perceived need to put a national stamp on an idea established elsewhere).
- All schemes have in common the provision of subsidies for end-use efficiency, but the level of subsidies varies a lot.

Obligated parties

- There is no evidence that distribution or retail companies are better suited to carry out the energy saving obligation.
- Distribution companies are still regulated monopolies (for gas and electricity) and the cost recovery mechanism could be easily implemented in the distribution tariff, while retailers are free to set their tariff and decide on how to recover their costs.
- In addition, it may well be that the obligated parties are a mix of regulated and un-regulated organisations.

Sectors, technology and measures - 1

- MSs' EEOS cover different sectors, technologies and measures. Common to all schemes is energy use in buildings, while industry and transport are only included in a limited number of EEOs (e.g. Italy, France, Poland, etc.).
- In the residential sector, there has been very successful experience of delivering high volumes of low cost measures (e.g. efficient lighting, efficient appliances, efficient boilers) in a number of MSs. Now with the progresses in the Eco-design and the additionality criteria this option is almost gone.
- Therefore most EEOS will need to address higher cost measures (e.g. solid wall insulation, etc.) or to be implemented in other sector where possible (e.g. industry).

Sectors, technology and measures - 2

- This marks a very significant change, and there are questions as to whether a policy which has been successful in delivering low-cost measures is equally appropriate for higher-cost measures.
- With a focus on a smaller number of higher cost measures, the distributional issues over who pays and who gains a benefit from the EEOs can become more contentious. In addition, the cost per kWh/kg CO₂ saved is also usually higher.
- In order to use EEOS successfully for higher cost measures, most MSs will need to combine EEOS with other incentives (e.g. tax rebates as in France) - and this is a new challenge for EEOS.

Scale of expenditure

- Is there a limit to the amount of money which can be raised via an EEO? And how might this vary by country / energy prices / economic cycle? The evidence so far is mixed.
- Some of the long-established schemes, e.g. Denmark and the UK, have increased the amount of savings to be delivered, and thus expected expenditure considerably over time.
- In the UK as result of rising costs, the EEOS was altered to reduce savings and the consequent expected impact on household energy bills.
- In Denmark, the effect has been that due to the high costs the (considerably increased) targets in 2013 were not met – the first time this has happened in the scheme.



Number of obligated parties

- The number of obligated parties can range from less than 10 (e.g. the UK) to several hundred (e.g. Denmark) or even thousands (e.g. France).
- Schemes that include district heating companies and / or heating oil or transport fuel retailers tend to have higher numbers of obligated parties.
- In countries that have a dominant gas and electricity supplier (e.g. France), even though there are thousands of obligated parties, most savings may be delivered by a very small number of organisations.
- The size and number of obligated parties is not a major constraint on scheme design.



The business model of energy companies

- In the UK, Italy and France, the energy suppliers have not become ESCOs and seldom deliver energy efficiency programmes or measures themselves. They contract out the delivery of measures to insulation, building and energy system businesses.
- In Denmark, the electricity distribution companies have used the new market for energy efficiency services to establish energy service companies. In Denmark, the EEO has delivered innovation in business models.
- There are many differences between the Danish and UK schemes, and also differences in national energy markets, which may have helped shape the response of the obligated parties.



Re-designing schemes

- Most of the schemes are adapted and modified during their "life". For example in the French scheme the transport oil suppliers were added to the scheme, while in Italy the energy saving evaluation and the eligible and obliged actors have been modified.
- For the Flemish and Danish systems which have developed over time, some of the same issues have faced regulators who have responded in different ways.
- For example – the issue of whether energy audits for companies deliver savings, and the scale of savings, was managed differently.

Conclusions - 1

- A **majority of MSs** plan to continue to use or to introduce new EEOS, but 10 MSs intend to meet their savings targets without EEOS. Out of **18 MSs** using EEOS to meet the Art. 7 obligations, only 4 MSs plan to use only the EEOS, while the remaining 14 MS will combine it with alternative measures.
- EEOS mainly cover buildings, with some schemes also covering industry and transport.
- While established schemes have a good record of meeting their savings targets, for "newcomers" the EEOS have just been implemented or are still in the design phase and therefore it is still impossible to judge their effectiveness and the added value compared to other existing policy instruments.
- It is important that EEOs are carefully **monitored** to see whether the ambitious Art. 7 target will be met and to ensure that the cumulative savings will be delivered by 2020.



Conclusions - 2

Introducing a new EEOS is a challenging process. The established schemes have developed and changed over time, with the energy saving targets increasing as the obligated parties and regulators gained experience with this policy mechanism.

While MSs can learn from others' experience, each MSs will face unique issues and has its own priorities.

EEOS have to fit into the existing policy landscape and are often used to meet multiple goals, rather than simply delivering energy savings. They can be used to help transform the business model of energy companies, to develop the supply chain and improve the installation quality of particular measures, to prioritise vulnerable customers or to encourage new actors into the energy efficiency market (e.g. ESCOs in Italy).

Conclusions - 3

- Many of the lower cost, mass-market efficiency opportunities in the buildings sector can no longer be counted as ‘additional’, due to the requirements of other EU legislation.
- This implies that EEOS will need to target higher cost measures or other sectors, e.g. industry, where allowed - a very different proposition in terms of distributional impacts and cost per kWh saved.
- Co-funding measures with other policy instruments may be part of the answer, as may focussing more effort on the transport and industrial sectors.
- All MS will need to consider how EEOS can best be used under these new conditions, and should continue to learn from each other.



THANK YOU FOR YOUR ATTENTION!

For more information

paolo.bertoldi@ec.europa.eu

www.enspol.eu