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Energy Saving Policies and Energy Efficiency Obligation Scheme

D2.1.1: Report on existing and planned EEOs in the EU – Part II: Description of planned schemes

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Preface

Directive 2012/27/EU, the Energy Efficiency Directive EED, requires each Member States to apply an energy efficiency obligation scheme (EEOs) or alternative policy measures that would deliver a certain amount of end-use energy savings over the 2014-2020 obligation period. The ENSPOL project's main aim is to support member states who intend to set up new EEO schemes. This support starts from describing the current status of the EEO design and its implementation within the these member states. The member states concerned are: Austria, Bulgaria, Estonia, Hungary, Lithuania, Luxembourg, Malta, Ireland, Spain and Slovenia. To describe these schemes, the ENSPOL partners started from the submitted notifications that MS were required to submit under the Directive by 5 December 2013, the National Energy Efficiency Action Plans (NEEAPs) by 30 April 2014, and the updated 5 December 2013 notifications. These official notifications were completed with a national stakeholder consultation in the member states. Although the implementation of EEOs is still an ongoing process in all member states, it is clear that Energy Efficiency Obligation Schemes (EEOS) play a very important role in the translation of Article 7 of the Energy Efficiency Directive.

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1 Summary

The deliverable D2.1.1 ‘Description of Planned Schemes’ deals with the planned, new Energy Efficiency Obligation Schemes (EEOs) within the European Union Member States (MS), as requested for the implementation of the Article 7 of the Energy Efficiency Directive. The MS explored in this report, that have declared their plans to adopt an EEO scheme (often linked to alternative measures) are Austria, Bulgaria, Estonia, Hungary, Lithuania, Luxembourg, Malta, Ireland, Spain and Slovenia. This report is the sequence of the detailed analysis of the already, existing schemes in the United Kingdom, Belgium, France, Denmark, Italy and Poland (Part I of ENSPOL deliverable D2.1.1).

The European Commission DG Energy study *evaluating the national policy measures and methodologies to implement Article 7 of the Energy Efficiency Directive* (Ricardo AEA, CE Delft and REKK; February 2015) indicates clearly that “Energy Efficiency Obligation Schemes (EEOs) are the most important type of policy measure adopted by MS in terms of energy savings – 40% of the expected cumulative energy savings across all MS are expected to be generated from the implementation of EEOs, far more than any other type of policy measure”. The table below summarizes the key characteristics of this important policy instrument in the explored MS. This table points out immediately that in contrast to the EEOs popularity as a policy instrument, the actual design of the EEO scheme is yet limited described in the MS notifications. In addition, the stakeholder consultation within MS indicated that the actual implementation of EEOs can still change compared to the original concept for the reason they were initially designed. We therefore want to emphasize that this report describes the situation in the MS as it was known by December 2014, while few updates are envisaged by the end of 2015.

From the summary table, it is clearly that improving energy efficiency is the main driver of the new EEO schemes, in contrast to existing schemes like the UK where CO₂ savings and limiting fuel poverty are also important. The main obligated parties are energy suppliers, followed by energy distributors who will realize efficiency improvement in different end-use sectors. Most MS allow obligated parties to generate savings in all end-use sectors, but the residential sector is often indicated as a preferred sector. Concerning the flexibility mechanism, trading of certificates/credits is often allowed, at least as an option, although the trading conditions are not yet described in detail.

The EEO schemes are described more into detail for each MS individually in the following chapters. These chapters will help the reader to understand the logic and current status of the EEO’s design more profoundly and provide some basic outcomes that could be extrapolated in other MS.

Country	Spain	Malta	Lithuania	Estonia	Slovenia
Policy objectives of EEO	Improve energy efficiency in frame of EED	Improve energy efficiency by reducing primary energy consumed.	Final concept of EEO is still unclear. Improve energy efficiency, reduce the negative impact on the environment	EEO is a considered option to maintain final energy consumption at 2010 level	Reduce final energy savings
Design of EEO					
Target (savings) per year	ktoe final energy savings per year.	2014-2020: GWh annual primary energy savings	No targets so far. General compliance with EED targets.	No targets set so far	2014-2020: GWh yearly final energy savings
Scope - sector related	All sectors	Electricity consumers (households)	Mainly buildings and the industry, but focus unclear	All end-users sectors, besides transformation, distribution and transformation sectors	Households and commercial sector, incl. transport
Type of measures	1st period: financial equivalent to savings will be paid by obligated parties to the National Energy Efficiency Fund. At a later stage: white certificates	Smart metering system & behavioral change from 2016; Progressive rising block tariff system from 2014 discouraging overuse; Free audits	Not proposed at this stage	Investment support; Contributions to the Energy Efficiency National Fund; information activities;...	Linked to financial mechanism "Eco-Fund" financing investments in energy efficiency
Obligated parties	All traders of electricity, gas, liquefied petroleum gases and wholesalers operators of oil products, inclusive transport	Enemalta Corporation (monopoly electricity distributor)	Electric DSOs; Gas company; District heating companies	Energy distributors or retail energy sales companies in gas, electricity and district heating	Suppliers of electricity, heat, gas and liquid and solid fuels to final customers.
Administrator	Managing authority: IDAE (Institute for Diversification and Saving of Energy)	Ministry for Energy and the Conservation of Water	Lithuanian Ministry of Energy – Coordinator of EEO Scheme, The Lithuanian Energy Agency – Administrator of EEO Scheme	Competition Authority	Responsible for the administration, report and verification of energy savings under the Scheme is the Slovenian Energy Agency.
Penalty regime	Yes, exact level to be specified	Not proposed at this stage	Not proposed at this stage	Not proposed so far	Penalty foreseen but not specified, weighed based on infringement degree.
Allocation of costs	Not specified at this stage	No cost recovery allowed. Enemalta will finance the smart meter roll-out.	Full cost recovery will be allowed	Not specified at this stage	Passed through the costumers via energy price. These funds will be transferred to the Eco-Fund.
Flexibility	Certificates will be tradable if/when they will be implemented.	None proposed so far (trading is not relevant since one obligated party)	Not proposed at this stage	Not proposed at this stage	Flexibility of financing: carry out measures or making payment to EcoFund
Energy poverty	None proposed so far	None proposed so far	None proposed so far	Not proposed at this stage	None proposed at this stage.

Country	Austria	Ireland	Bulgaria	Hungary	Luxembourg
Policy objectives of EEO	Achieve final energy savings targets in frame of EED	To stimulate an active and cost-effective market for energy savings.	2014-2020: 647,50 ktoe final energy savings	Final concept of EEO is not available; Final energy savings in frame of EED	Improve energy efficiency in frame of EED
Design of EEO					
Target (savings) per year	PJ total final energy savings over lifetime	GWh yearly primary energy savings ; three-year cycles	Not proposed at this stage. General compliance with EED.	Not available so far. General compliance with EED.	GWh final energy savings over lifetime
Scope - sector related	All end-use sectors, but focus on households	Non- residential (75%), residential (20%) and energy poverty households (5%)	All end-use sectors, besides transformation, distribution and transmission sector	Not available so far	All end-user sectors, incl. transport
Type of measures	Different types of incentives	Energy Credits for realised Primary Energy Savings. Grants mainly at the residential sector. Energy Efficiency National Fund for non-residential sectors and energy performance contracting.	Not described so far	Not available so far	Financial assistance and advice/audits to consumers
Obligated parties	Retail energy sales companies of all energy carriers	Energy suppliers and retail energy sales	Energy traders, excl. transport	Not available so far	All electricity and gas suppliers
Administrator	A monitoring and control body "Monitoringstelle" will be installed	Sustainable Energy Authority of Ireland (SEAI)	National Sustainable Energy Development Agency	Hungarian Energy and Public Utility Regulatory Authority	Ministry of Economy
Penalty regime	0,20 €c per missing kWh	Penalty set at multiple of 1.25 of the buyout price across all sub- sectors	None proposed so far	Not available so far	Yes, lower then 2€/MWh
Allocation of costs	Cost recovery is not regulated in the Energy Efficiency Act	Not specified at this point, although expected that costs will be passed through to consumers via energy price.	Not available so far	Not available so far	Cost recovery is allowed
Flexibility	Tendering and bilateral trading are possible	Exchange of Energy Credits between obligated parties. Buyout option up to a maximum of 30% of total cumulative target. Banking of savings.	Not available so far	Not available so far	Fungibility; Transfer between parties and years; Third parties
Energy Poverty	Uplift by factor of 1.5 for savings achieved in energy poor households	5% of the target to be realised in households in fuel poverty	None proposed so far	Not available so far	None proposed so far

2 Methodology

The planned Obligation schemes are described for different topics, which we can cluster in the following two themes:

- Policy objectives
- Design of the EEO to realize these objectives

In this Methodology chapter, we explain the different topics that are discussed for each of the planned Obligation schemes. This methodology starts from “Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes, IEA, 2012 (Task XXII)”. To describe these topics, the ENSPOL partners started from the submitted notifications that MS were required to submit under the Directive by 5 December 2013, the National Energy Efficiency Action Plans (NEEAPs) by 30 April 2014, and the updated 5 December 2013 notifications. The ENSPOL partners completed this information with a national stakeholder consultation in the member states concerned.

Policy objectives of EEO

Determining and stating the policy objectives is an important stage in designing an EEO scheme because these objectives define what the obligation is intended to achieve and will significantly affect all the other parameters of the scheme. There is a range of policy objectives that can be achieved through establishing an EEO scheme, for example:

- to acquire cost-effective energy efficiency as an energy resource
- to reduce primary and/or final energy consumption
- to reduce CO₂-emissions
- to assist low-income households with their energy bills
- to stimulate the development of an energy services industry (eg. ESCOs);
- ...

The chosen policy objectives will strongly influence how the EEO scheme is designed and implemented.

Design of EEO

Type of measures

Obligation schemes differ strongly between countries, not only in scope, but also in the way they are implemented. Some countries prefer the prevalence of the market forces and

introduce hereto a trading system between the involved parties to reach the energy efficiency objectives (eg. white certificate system). Other countries promote energy efficiency by means of financial incentives (eg. subsidies, lower interest rates, tax reduction) or by providing information on energy saving opportunities (Source: IEA, 2012).

Scope - sector related and technology related

Although the objectives can be the same in different countries, the range of targeted sectors as well as the supported technologies can differ strongly between the member states. Moreover, the EEO schemes vary in how they determine the energy efficiency measures that will be eligible to produce energy savings that contribute to the energy saving target (Source: IEA, 2012). The targeted sectors (eg. households, industry, transport) as well as the type of technologies (eg. insulation, energy audits, priority for deep renovation) in the planned EEO schemes are listed in this report.

Obligated parties

In EEO schemes, obligated parties are the entities that are required to meet the scheme target. Most often these are the providers of the fuels covered by the scheme. It is necessary to decide which type of energy provider will be obligated. This decision should be based on whether a particular type of provider has relationships with end-users, has the infrastructure and systems necessary to manage the delivery and/or procurement of eligible energy savings, etc. Obligated energy providers may include: energy retailers and/or transmission and distribution system operators, road transport or heating fuel suppliers and energy utilities (Source: IEA, 2012).

Target setting

Setting the energy saving target is an important stage in designing an EEO. The target defines the path to achieving long-term energy saving goals. There are several decisions to be made when setting the energy saving target. The first decision involves setting the actual level of the target. The level is set in the light of the overall policy objectives for the EEO scheme. The second decision requires determining whether the target will be set in terms of primary energy or final energy. Although final energy relates most closely to the energy quantities familiar to end-users and energy providers, targets set in primary energy may be preferable for EEO schemes that cover a range of fuels with different conversion factors from primary to final energy. The third decision entails choosing the units that will be used for denominating the target, for example, energy savings in megawatt-hours (MWh), megajoules (MJ), or tonnes of oil equivalent (toe), or GHG emission reductions in tonnes of

carbon dioxide equivalent (tCO₂_e). The fourth decision involves determining the timeframe over which the target will be in place (Source: IEA, 2012).

Calculation method savings

EEO schemes vary in how they determine the expected savings from eligible measures that contribute to the scheme energy saving target. EEO schemes can establish a list of preapproved energy efficiency measures. Frequently each of these measures is assigned a deemed, ex-ante energy saving value that can be claimed each time the measure is implemented. Deemed values are usually assigned to simple energy efficiency measures and are calculated from engineering estimates of the energy saving typically achieved by the measure. Schemes may also establish procedures for calculating the energy savings from measures not on the approved list, or for calculating, on a case-by-case basis, the energy savings from complex energy efficiency projects that employ a range of energy efficiency measures (Source: IEA, 2012).

It is also important to set the time period over which eligible energy savings from energy efficiency measures will be calculated. The two major options are first-year savings or savings over the lifetime of the measure.

In this section, the estimation methods of the expected savings are described as far as known for the planned Obligation schemes.

Additionality

EEO schemes can require that eligible energy savings must be additional (i.e., energy savings that would not otherwise have occurred). In the member states, different types of additionality can be taken into account (Source: IEA, 2012):

- Energy savings additionality, in which energy consumption is actually reduced compared with the situation before the energy efficiency project was implemented;
- Policy additionality, in which the energy savings are in excess of any other policy, regulatory, or legal requirements to reduce energy consumption;
- Business as usual additionality, in which the energy efficiency project is in excess of what could reasonably be expected to occur in the relevant sector(s) (= business as usual or baseline situation); and
- Financial additionality, where the energy efficiency project would not have taken place if revenue from the sale of energy savings were not available.

EEO schemes vary in how they actually determine whether particular energy savings are additional or take this into account in the ex-ante savings.

Verification & Monitoring

EEO schemes rely on the establishment of robust systems for monitoring, verifying, and reporting the energy savings to guarantee a proper and effective implementation of the measures. Claimed energy savings may be verified by carrying out audits on energy efficiency projects. The results from monitoring and verification processes can also be used to (Source: IEA, 2012):

- track progress towards long-term goals;
- monitor cost effectiveness;
- inform the calculation and revision of deemed energy savings values; or
- identify problems requiring program changes or additional regulatory action.

The verification and monitoring process and its involved parties are described as far as known for the planned EEO schemes.

Control and Compliance

An EEO scheme requires a compliance regime to determine whether obligated energy providers have met their individual scheme targets and to apply sanctions, eg. financial, if they fail to do so. The procedure of control and compliance is described in this section.

Administrator - Institutional set up

Key ongoing functions involved in the administration of an EEO scheme include (Source: IEA, 2012):

- approving eligible energy efficiency measures and (where required) assigning them deemed energy saving values;
- accrediting parties that produce eligible energy savings through implementing energy efficiency projects;
- conducting measurement and verification of actual energy savings, including auditing the results of energy efficiency projects;
- enforcing compliance with the obligation, including reviewing the performance of obligated parties against their targets and administering any penalties;

- making and operating a trading market for energy

In this section the responsible administration and the institutional set up ('what are the responsibilities of the involved parties?') are described as far as known in the member states concerned.

Flexibility

The set-up of an EEO scheme can include different flexibility mechanisms for the obligated parties to comply with their energy savings targets, like (Source: IEA, 2012):

- Obligated parties can transfer an over- or under coverage of the savings targets between years
- Some EEO schemes allow trading of energy savings among obligated parties, and between obligated parties and accredited third parties (eg. ESCOs). The purpose of trading is to broaden the pool of opportunities to produce eligible energy savings and to enable market forces to identify the most cost-effective opportunities.

Social equity

Social Equity focuses on issues of fairness, justice, and equity in a variety of public contexts. In the context of Obligation Schemes, equity of the scheme is described by the financial contributors to the scheme; the (financial) beneficiaries besides the expected impact of the EEO on the energy prices or tariffs over time. Special attention is paid to fuel poverty in this report.

3 Austria

3.1 Policy objectives of EEO

The Austrian Federal Energy Efficiency Act foresees the introduction of an energy efficiency obligation scheme (EEO) that will contribute to the implementation of Article 7 of the EED. The objective of the EEO is to achieve final energy savings between 2015 and 2020 that amount to 159 Petajoule (PJ) in total. There are no further objectives; the only objective of the scheme is to contribute to the achievement of the targets in the framework of the EED.

3.2 Design of EEO

3.2.1 Type of measures

The scheme does not restrict possible measures. Thus all kinds of incentives from energy retail companies are possible.

3.2.2 Scope - sector related

There is no restriction as regards eligible sectors. Energy efficiency measures that comply with 3.2.1, i.e. that reduce final energy consumption at final customers are eligible.

One requirement is that for each obligated party 40 % of yearly savings have to be achieved with measures at households. The remaining 60 % of savings can be achieved in any end use sector (households, services, industry, transport, agriculture).

3.2.3 Scope - technology related

All energy efficiency measures that reduce final energy consumption at final customers are eligible. Obligated parties can also implement energy efficiency measures at their own premises.

Annex I of the Energy Efficiency Act gives a wide list of possible categories of energy efficiency measures in all end-use sectors (residential, services, industry, transport, agriculture). However this list of 56 broad categories of measures is not exhaustive. The only

criterion for eligibility for a measure is that it has to be proven that the measure reduced final energy consumption at a final customer. This means that the scheme is in principle open to any potential measures. The reasoning behind this was not to restrict eligible measures and to take advantage of all energy efficiency potentials.

As mentioned in 3.2.1 the only criterion for eligibility is that the measures reduce final energy consumption at final customers. All technologies that comply with this criterion are eligible. There is no further restriction as regards eligible technologies.

3.2.4 Obligated parties

All retail energy sales companies selling more than 25 GWh in the previous year are obligated. Between 2015 and 2020 it is always the sales of the previous year that determines the obligation of the respective year (see example below in 3.2.5.1) The obligation thus covers all energy carriers (electricity, natural gas, district heating, biomass, coal, mineral oil) including transport fuels.

There are no official statistics on the number of obligated parties. A very rough estimate on obligated parties results in the following numbers of:

- Natural gas: 30
- Electricity: 90
- Mineral oil (transport fuels): 1,600
- Mineral oil (heating oil): 500
- Wood pellets: 100
- Biomass and coal: 2,200
- District heating: 50

This results in an estimated number of obligated parties of around 4,520. Note that these are rough estimates. There will be a clearer picture on the number of obligated parties in the course of the year 2015.

Retail energy sales companies are obligated on an individual basis. Smaller, obligated retail energy sales companies (selling between 25 and 150 GWh in the previous year) can form a pool and achieve their obligation jointly. Any obligated party above sales of 150 GWh in the previous year cannot participate in such a pool but has to achieve its obligation individually.

3.2.5 Target setting

The annual energy savings target per retail energy sales company amounts to savings from energy efficiency measures of 0.6 % of the energy sales of the previous year. Thus the target is updated annually.

From energy balances it can be estimated that the average annual energy sales to final customers in Austria for the years 2010 to 2012 amount to a maximum of 691,175 TJ.

3.2.5.1 Example for target setting

The following table illustrates the target setting for an exemplary retail energy sales company. Note that this company does not sell more than 25 GWh in each year, the threshold mentioned in 3.2.4. Thus the obligation does not apply in each year of the obligation period.

Table 1: Example for target setting of an retail energy sales company.

[GWh]	2014	2015	2016	2017	2018	2019	2020
Energy sale	50	60	100	20	0	50	50
		↘	↘	↘	↘	↘	↘
Energy savings obligation		0.30	0.36	0.60	-	-	0.30

It can be seen that the savings target of the company amounts to 0.6 % of its energy sales of the previous year. There is no obligation in the years 2018 and 2019 as in both cases energy sales of the previous year are less than 25 GWh. In 2020 the company falls under the obligation again as sales in the previous year were above 25 GWh.

3.2.6 Calculation method savings

No details are defined yet. In principal all methods according to Annex V 1. of the EED (deemed savings, metered savings, scaled savings, surveyed savings) are possible. A mix of all four methods is expected with differences between sectors. For example it is expected

that for standardised measures at rather homogenous customers (e.g. household appliances) deemed savings will be the method mainly applied. For measures in industry it will most likely not be possible to apply a deemed savings approach but to calculate savings based on metered consumption or engineering estimates. The applied methods in all sectors will eventually depend on the availability of deemed savings methods.

3.2.7 Additionality

In general the energy efficiency act stipulates that the methodology for the EEO has to comply with the requirements of the EED.

Concerning additionality the energy efficiency act states:

- Measures are only eligible if they achieve energy efficiency gains that go beyond existing regulations (e.g. minimum standards).
- Measures from a selected group of public subsidy schemes are excluded from eligibility in the EEO.

The Energy Efficiency Act rules out the co-funding of measures for the most important public support schemes by the federal state and the provinces. If a measure has been funded under these defined support schemes it is not eligible any longer in the framework of the obligations scheme. These support schemes are among the most important alternative measures that will be used in Austria to comply with Article 7 of the EED. This implies that overlaps between alternative measures and the EEO are ruled out to a large extent.

The details for the calculation methodology are yet to be defined. They will be available earliest in the middle of the year 2015.

3.2.8 Verification & Monitoring

All measures that lead to a measurable or assessable reduction in the consumption of final energy are eligible for the EEO. Annex I of the energy efficiency act gives an extensive but non-exhaustive list of possible categories of measures.

The energy efficiency act only states that verification and monitoring have to be in line with the EED. In general it is foreseen to build an online database which is used by obligated parties to report the implemented energy efficiency measures. Details haven't been defined yet.

3.2.9 Control and Compliance

If an energy supplier fails to comply with his energy savings target he can pay an amount of 20 Cents per missing kWh for the respective year. This payment relieves him from the delivery of the missing kWh.

According to the energy efficiency act the control authority “Monitoringstelle” will be installed. There have been delays in the appointment of the Monitoringstelle. It is expected that this control body will be operational earliest by the middle of the year 2015. The Monitoringstelle will be responsible for control and verification of the EEO.

Details on the exact procedures concerning control are not yet defined in the energy efficiency act.

3.2.10 Administrator - Institutional set up

See 3.2.9 – a monitoring body (Monitoringstelle) will be installed. This monitoring body can be either private or state owned. The Monitoringstelle is responsible for the administration of the scheme. Energy sales companies report the compliance with their obligations to the Monitoringstelle. As mentioned above the Monitoringstelle has not been appointed yet.

As the scheme has not started yet, it is not possible to give any numbers on complexity and human resources.

3.2.11 Flexibility

Energy sales companies are the only obligated parties, but they can also comply with their obligation with measures from third parties (e.g. ESCOs, companies).

Retail energy sales companies are obligated on an individual basis. Smaller obligated retail energy sales companies (selling between 25 and 150 GWh in the previous year) can form a pool and achieve their obligation jointly. Any obligated party above sales of 150 GWh in the previous year cannot participate in such a pool but has to achieve its obligation individually.

In addition instead of implementing measures by themselves, energy sales companies can invite tenders for the delivery of energy savings. The energy efficiency act does not define any specifications for these tenders. It can be expected that obligated parties will only accept offers that are below 20 Cents per kWh of savings, which is the payment mentioned in 3.2.9 that relieves the energy retail sales company from the obligation.

A certification scheme is not envisaged in Austria. Bi-lateral trade is however not excluded by the Energy Efficiency Act.

3.3 Social equity

3.3.1 Contributors

Cost recovery is not regulated in the Energy Efficiency Act. The financing of measures as well as the cost recovery is up to the obligated parties. This leads to a reduced transparency regarding financing of the EEO.

3.3.2 Beneficiaries

As mentioned in 3.2.1 and 3.2.2, measures in all sectors are eligible. One requirement is that for each obligated party 40 % of yearly savings have to be achieved with measures at households.

All energy carriers are covered by the scheme. This broad coverage of the scheme makes it more likely that a large share of energy consumers will benefit from measures implemented in the framework of the EEO.

To target energy poverty, the savings achieved at energy poor households are multiplied by a factor of 1.5. All households that are relieved to pay the flat metering point charge for the green electricity support scheme are defined as energy poor in the Energy Efficiency Act. Thus the energy efficiency act does not introduce an own definition of energy poverty, but refers to other legislation.

3.3.3 Impact on energy prices or tariffs

Cost recovery is not regulated in the Energy Efficiency Act. The financing of measures as well as the cost recovery is up to the obligated parties. As no results of the obligations scheme are available yet, no estimations on what proportion of costs will be finally passed on to customers can be made.

3.4 Recommendations

3.4.1 Areas for improvement

The scheme has only started in the beginning of 2015, so no experiences can be reported so far. From the basic design some observation can be made:

- Energy retail sales companies are obligated and cost recovery is not regulated within the scheme. This leads to a reduced transparency regarding financing of the EEO.
- Many issues regarding the administrative setup of the EEO (mainly installation of the monitoring body) are not defined yet.

3.4.2 Strong characteristics

Special characteristics that might prove to be of advantage to the scheme are:

- All energy carriers are covered by the scheme. Thus also retail energy sales companies trading other energy carriers than electricity and gas are obligated. This broad coverage of the scheme makes it more likely that a large share of energy consumers will benefit from measures implemented in the framework of the EEO.
- The requirement to achieve at least 40% of savings in the household sector prevents a complete cross-subsidization of the commercial and industry sector by households.
- There are incentives for obligated parties to implement energy efficiency measures for energy poor households.

4 Bulgaria

4.1 Policy objectives of EEO

This description of the planned EEO scheme of Bulgaria is based on the draft Energy Efficiency Act prepared by the Council of Ministers in May 2014, but not yet submitted to the National Parliament for adoption. No any action was undertaken because of the expectations for resignation of the Government. The agenda of the caretaker government, which served from July to November 2014, did not include any discussion or development related to the EE Act. The Government established in November 2014 has promised to make progress in this direction. The final form of the planned EEO scheme will be the result of specific regulations that will be developed within six months of the adoption of the EE law in May 2015.

The overall amount of energy savings over the obligation period, established to meet the target set in accordance with article 7(1) of the EED, represents a total of 647.50 ktoe (Methodology for the operation of the energy efficiency obligation schemes from Republic of Bulgaria, Ministry of Economy and Energy, p.6) during the period from 1 January 2014 to 31 December 2020. Furthermore, in addition to the EEO scheme, Bulgaria targets a 25% energy savings through the implementation of the provisions of Article 7(2).

4.2 Design of EEO

The EEO in Bulgaria will be established by the new Energy Efficiency Act and corresponding regulation that will implement the Energy Efficiency Directive.

A methodology for the operation of the EEO schemes has been developed in accordance with the requirements of Article 7 of Directive 2012/27/EU on energy efficiency. This national methodology has been drawn up in line with the framework provided in paragraph 4 of Annex V to the Directive.

The purpose of the new Bulgarian White Certificate Scheme will be to drive energy efficiency to realize energy savings by end users. In order to reach their individual targets, the obligated parties may implement energy-saving measures in all end-users sectors — industry, transport, households, commerce, civil society organisations, agriculture, forestry and fishery, services, etc (Methodology for the operation of the energy efficiency obligation

schemes from Republic of Bulgaria, Ministry of Economy and Energy, pag.5). The obligated parties may also implement measures that achieve energy savings in the energy transformation, distribution and transmission sectors, including by means of efficient district heating and cooling systems infrastructure.

The savings achieved due to introduction of the new EEO scheme shall 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 customers of all retail energy sales companies by volume, averaged over the 2010 – 2012 period. The calculation of the energy savings target in Bulgaria is based on the annual average final energy consumption for 2010-2012, from which non-energy use and energy use in transport are excluded. The basis for calculating the obligation under Article 7 of the EED on energy efficiency is 6 167 ktoe, set as a baseline excluding the non-energy and transport use for the average of 2010-2012. On top of that, the 1.5% target set implies that Bulgaria must achieve 92.50 ktoe of new savings annually for the period 2014-2020, which in cumulative figures amounts to 647.50 ktoe. Furthermore, next to the EEO scheme, Bulgaria targets at 25% energy savings, through making use of the provisions of Article 7(2).

4.2.1 Type of measures

The eligible measures to increase energy efficiency must satisfy the following conditions:

- Their payback time must not be longer than the lifetime of the corresponding measures;
- They must save primary energy resources;
- They must reduce greenhouse gas emissions;
- They must not damage the quality of the environment;
- They must not damage sanitary and hygiene elements.

4.2.2 Scope - sector related

The obligated parties may implement energy-saving measures in all final customer sectors — industry, transport, households, commerce, civil society organisations, agriculture, forestry and fishery, services, etc.

The obligated parties may implement measures that achieve savings in the energy transformation, distribution and transmission sectors, including by means of efficient district heating and cooling systems infrastructure.

4.2.3 Scope - technology related

The planned EEO scheme will cover households, commercial, transport and industrial sectors in respect of (Methodology for the operation of the energy efficiency obligation schemes from Republic of Bulgaria, Ministry of Economy and Energy, pag.8).

- Technical measures
- Organizational measures and
- behavioral measures

Fuels covered by the system are as follows: electricity, natural gas, and district heating.

The eligible measures to increase energy efficiency must satisfy the following conditions:

Their payback time must not be longer than the lifetime of the corresponding measures;
They must save primary energy resources;
They must reduce greenhouse gas emissions;
They must not damage the quality of the environment;
They must not damage sanitary and hygiene elements.

4.2.4 Obligated parties

Obligated parties are envisaged to be energy traders that meet one or more of the following conditions:

- (i) Sales of energy to final customers in the previous calendar year that were greater than the equivalent of 75 GWh (6.45 ktoe) annually, including:
- Electricity traders selling electricity to final customers;
 - Heat transmission companies;
 - Natural gas traders selling more than 8 million normal cubic meters on an annual basis to final customers;
 - Liquid fuel traders selling liquid fuels to final customers in amounts exceeding 6 500 t on an annual basis, excluding fuels for transport purposes;
 - Solid fuel traders selling to solid fuels to final customers in amounts exceeding 13 000 t on an annual basis;

- (ii) A minimum of 10 members of staff in the previous year, irrespective of the amount of energy traded;
- (iii) Annual turnover or end-of-year balance for the previous year of more than BGN 3.9 million (1,99 million EUR), irrespective of the amount of energy traded.

Transport fuel distributors or retailers will not be included in the obligation scheme.

4.2.5 Target setting

The minimum combined amount of energy savings achieved by all energy traders must result in new energy savings equal to 1.5 % of the annual amount of energy sold to all final customers.

Table 2: Breakdown of the obligation scheme by year (2014-2020), ktoe

Year	Obligations excl. transport	Obligations excl. transport and with full use of the 25 % reduction permitted by Article 7(2)
2014	92.50	69.38
2015	185.00	138.75
2016	277.50	208.13
2017	370.00	277.50
2018	462.50	346.88
2019	555.00	416.25
2020	647.50	485.63

4.2.6 Calculation method savings

Eleven energy-saving assessment methodologies were adopted based on 'bottom up' approach. This enables the energy saved to be determined by measuring and/or calculating energy consumption before and after implementation of the measures. The energy savings are calculated and measured in kilograms of oil equivalent (ktoe) or kilowatt hours (kWh). These methods can be applied to individual measures and groups of measures in order to 'capture' and report the energy-savings effect of each individual measure or program. The total savings achieved by a given measure or program is the sum total of the combined savings achieved by all participants in and/or beneficiaries of the measure or program concerned.

This method ensures that energy savings from combinations of energy efficiency measures or mechanisms are not counted twice.

To assess the energy savings from energy efficiency measures separately, the impact of the following factors on energy consumption must be eliminated:

1. Climate conditions (expressed as cumulative degree days);
2. Occupancy levels;
3. Working hours in non-residential buildings;
4. Utilisation of installed capacities and production structure;
5. Output, added value, changes in GDP;
6. Installation and transportation schedules;
7. Links to other units, etc.

Once implemented, certain measures can have a multiplier effect, i.e. their implementation continues automatically at other sites without any involvement of the responsible persons. In the majority of cases, these measures are more cost-efficient than ad hoc measures and should be continued. The multiplier effect may be included when assessing the potential of the measures. In such cases, it is necessary to verify the combined energy-saving effect and apply adjustment factors in the subsequent assessment.

Energy efficiency indicators may be used to assess horizontal measures or measures that cover several sectors at once as long as it is possible to determine how those indicators would change in the future if the measures were not implemented. In such cases, it is necessary to ensure that energy savings achieved by energy efficiency programmes, energy services and other tools (such as energy or carbon dioxide taxes and awareness campaigns)

are not counted twice. Appropriate adjustments should be applied where it is not possible to avoid this duplication.

4.2.7 Additionality

Additionality is not taken into account by the Bulgarian government as of today.

4.2.8 Verification & Monitoring

The objective of the energy savings assessment is to establish, against an earlier baseline year, the amount of energy saved in **a building** as a result of the measures implemented to increase energy efficiency, and to demonstrate the extent to which the individual energy-saving targets were achieved. At least one year after implementation, the savings achieved shall be demonstrated by means of:

1. Energy efficiency audits that are carried out upon by external auditors; or
2. The application of specific methodologies for assessment of energy savings (under development; bottom-up approach).

The energy audits are realized by professionals (for example engineers, architects, etc...) who are certified and registered in the public register. (Methodology for the operation of the energy efficiency obligation schemes from Republic of Bulgaria, Ministry of Economy and Energy, p. 22 point 10). The specific methodologies were developed on the basis of standardized methodologies recommended in EU documents and others that were developed and proposed by those who carry out energy audits of buildings and/or industrial systems, building certifications, conformity assessments of investment projects and energy-saving assessments.

Energy savings shall be established by estimating and/or measuring energy consumption at the sites concerned after implementing the measures to increase energy efficiency. Energy savings shall be presented in terms of the amounts saved: primary energy consumption, final energy consumption and carbon dioxide emissions. The quantitative and qualitative characteristics of the energy savings achieved as a result of the measures shall be **confirmed by energy-saving certificates**.

4.2.9 Control and Compliance

The methodology for the operation of the energy efficiency obligation schemes has been developed in accordance with the requirements of Article 7 of Directive 2012/27/EU on energy efficiency. This national methodology has been drawn up in line with the framework provided in paragraph 4 of Annex V to the Directive. This methodology was developed by a team of experts from Bulgaria's Ministry of Energy and Economy and the Sustainable Energy Development Agency.

Compliance with the requirement in the second subparagraph of Article 7(1) will be ensured by introducing various types of mechanisms and obligations to promote the implementation of energy efficiency measures leading to measurable energy savings. This will involve appropriate amendments to Bulgaria's primary and secondary legislation.

4.2.10 Administrator - Institutional set up

National Sustainable Energy Development Agency – functions as an EEO Scheme administrator, coordinator of EEO Scheme and is responsible for:

- Establishment of overall energy end-use savings target;
- Determination of specific obligated parties and obligations for the given time periods;
- Adoption of methodology for calculation of savings;
- Carry out audits quality control, savings calculation, monitoring, evaluation ;
- Verification that the obligated parties have implemented the measures at the requisite level of quality;
- Gather information about the implemented efficiency measures;
- Draw up the reports, according to the achieved results.

4.2.11 Flexibility

Any options of flexibility are not mentioned neither in Bulgarian NEEAP nor by stakeholders.

4.3 Social equity

The planned Bulgarian EEO system will not take into consideration issues of social equity.

4.3.1 Impact on energy prices or tariffs

Difficult to assess at this planning stage.

5 Estonia

5.1 Policy objectives of EEO

According to the Estonian communication on the article 7 of the EED to the European Union sent last May 5th 2014, the Government of Estonia has decided that national 2020 energy efficiency objective will be to maintain final energy consumption at the 2010 level. According to national statistics, the final energy consumption in 2010 in Estonia was 119PJ (33.056 GWh). In order to contextualize the former figure, see below table 3 with the final energy consumption (in PJ) in Estonia for the last available 5 years:

Table 3: Final energy consumption, years

	2009	2010	2011	2012	2013
Energy total consumption (PJ)	113	119	119	120	117

Source: www.stat.ee

The overall amount of energy savings over the obligation period in order to meet the target set in accordance with article 7 (1) represents a total of **7,140 GWh** during the period from 1 January 2014 to 31 December 2020. The final energy use in the transport sector has been completely left out of the calculation of overall energy savings.

Estonia plans to use mainly alternative policy measures to achieve the target mentioned above.

Table 4 displays the energy savings per each alternative measure. Figures show that the planned alternative measures will not cover the entire obligation required under Article 7(1). The following possibilities are being considered to cover that shortfall in achieving the objective (661 GWh¹):

- Implementation of additional financing schemes;
- Modification of energy and CO₂ taxes;
- Introduction of the energy efficiency obligation schemes in Estonia.

Due to the political transition that is currently taking place in Estonia, it is hard to say which of the former options will be chosen. Therefore, it is even possible that new government in Estonia doesn't implement in the end EEOs at all to achieve the energy savings targets set by the EED. In case they are finally implemented, they won't play anyway a major role due to the limited volume of the shortfall that will be covered through its implementation.

Table 4: Contribution of alternative policy measures to achieve the energy savings target.

Alternative Policy Measures	2020 (GWh)
<i>1.1 Energy and CO₂ taxes</i>	
Excise duty and VAT on natural gas	512
Excise duty and VAT on electricity	1,585
Excise duty and VAT on fuels used for district heating,	940
Excise duty and VAT on petrol	547

¹ 7140GWh- 6479 GWh= 661GWh

Excise duty and VAT on light fuel oil and diesel fuel	1,174
<i>1.2 Financing schemes and Instruments</i>	
Renovation of street lighting	211
Energy and resource efficiency of companies	459
Reconstruction of apartment buildings	1,051
TOTAL	6,479

Source: Estonian NEEAP

5.2 Design alternative measures and EEO

5.2.1 Type of measures

To comply with article 7 of the Energy Efficiency Directive and achieve the required energy savings by 2020, the Estonian NEEAP foresees the following combination:

Alternative measures including energy and CO₂ taxes and financing schemes and instruments. Other alternative measures that Estonian government is considering in using are regulations or voluntary agreements; standards and norms, and training and education.

The most important financing measures are being planned under the Energy efficiency priority axis (measures 1-3) and the Growth-capable entrepreneurship and the RD&I supporting it (measure 4):

1. Energy efficiency in housing.
2. Efficient generation and transmission of heat.
3. Improving energy efficiency.
4. Increasing the share of renewable energy and increasing the energy and resource efficiency of companies.

Energy Efficiency obligation schemes such as investments and investment support for energy savings in all end user sectors, and energy transformation , distribution and transmission sectors; contributions to the Energy Efficiency National Fund, information activities, introduction of standards, norms and labelling schemes.

The only source of financing the Energy Efficiency Fund are the contributions of the companies that do not take their own measures to meet the energy efficiency obligation. Contributions to the Energy Efficiency Fund should be determined on the basis of the nature of potential energy saving measures (scope, implementation costs, and possible distribution of costs between parties in the implementation of activities) and the manner of financing of the measures.

5.2.2 Scope - sector related

The following table shows the target sectors for the EEOs, financing schemes and energy and CO₂ taxes.

Table 5: Target sector per type of measure

	Energy efficiency obligation schemes	Financing schemes	Energy and CO₂ taxes
Target sectors	All end-users sectors, and energy transformation, distribution and transformation sectors	Apartment buildings, street lighting, industry	All end-users, distribution and transformation sectors. The segment of tax payers is defined in the Alcohol, Tobacco, Fuel and Electricity Excise Act.

Source: Estonia's Notification to the European Commission.

5.2.3 Scope - technology related

According to the National Energy Efficiency Action Plan, Estonia sees the building sector as a priority to improve its energy efficiency, which is underlined by many good measures in the sector such as maintaining and modernizing the existing building stock. The aim of the state's investment support for the reconstruction of existing housing is to achieve a better indoor climate and energy performance and reduce the energy consumption of residential buildings among final customers.

Therefore, Estonia rather than prioritize the implementation of specific technologies, is focusing in the building sector, where more potential energy savings can be achieved and exists a greater cost-effectiveness.

5.2.4 Obligated parties

Table 6 shows the obligated parties as well as the implementing public authorities for each of the main type of measures that will be used in Estonia to achieve their energy saving targets.

Table 6: Obligated parties and implementing public authorities

	Energy efficiency obligation schemes	Alternative measures	
		Financing schemes	Energy and CO ₂ taxes
Obligated parties and implementing public authorities	Energy distributors or retail energy sales companies (obligated parties) in gas, electricity and district heating sectors, whose annual amount of energy supplied or sold exceeds 100GWh/yr	KredEx Credit and Export Guarantee Fund (implementing public authority), Environmental Investment Centre (implementing public authority)	Energy consumers and activities leading to the emission of CO ₂ (obligated parties). Tax and Customs Board (implementing public authority)

Source: Estonia's Notification to the European Commission

5.2.5 Target setting

Estonia chose to calculate the cumulative energy savings to be achieved by 2020 with the method described in Article 7, paragraph 1 of the Directive 2012/27/EU: annual percentage of energy savings of 1.5% per annum from 2014 to 2020, considering also the allowed reduction of 25%, described in Article 7.3 of the EED, on the total amount. As established by the Directive, the basis for calculating the energy savings is the average value of the annual energy sales to customers of all the distributors of the most three recent years before the 1st of January 2013.

Table 7 shows the expected energy savings to be achieved over the obligation period (2014-2020) and intermediate periods. An annual energy savings at a 1.5% annual percentage of the basis of the calculation (22,659GWh) is expected. The annual 1.5% target can be reduced following the 4 cases specified in the article 7(2). These reductions, according to the article 7(3) cannot go over the 25% of the basis of the calculation (2,379GWh).

Table 7: Expected energy schemes distribution during 2014-2020

Year	Annual percentage (%)	Cumulative percentage (%)	Annual energy savings (GWh)
2014	1.50%	1.50%	340
2015	1.50%	3.00%	680
2016	1.50%	4.50%	1020
2017	1.50%	6.00%	1360
2018	1.50%	7.50%	1699
2019	1.50%	9.00%	2039
2020	1.50%	10.50%	2379
TOTAL			9517
Reduction of 25% (GWh)			2379
Final target (GWh)			7138

Source: Estonia's Notification to the European Commission.

5.2.6 Calculation method savings

This section describes the methods of calculating the energy savings to be achieved as a result of activities carried out under the measures included in the package of energy efficiency obligations and alternative measures. This is done largely on the basis of the draft methodology for determining the energy efficiency indicators referred to in the Directive 2006/32/EC of the European Parliament and of the Council, which consists of three main documents: Recommendation note – Harmonized top-down calculation model, Harmonized bottom-up calculation model and Preliminary list of harmonized average lifetimes of energy efficiency improvement measures and programmes for bottom-up calculations. The draft methodology describes top-down and bottom-up indicators in detail and contains the necessary explanations and formulas. These formulas serve as the basis for calculating energy savings and progress towards compliance with the national energy efficiency obligation.

The top-down and bottom-up indicators are described in more detail in Annex 3 of the document “*Analysis of the options for implementing Energy Efficiency Directive 2012/27/EU*” which sets out all the top-down and bottom-up indicators for different sectors. More information about the indicators and their calculation methods is available in the report on the ‘Study on the development of the energy efficiency policy monitoring mechanism’. The report also contains more detailed explanations about the designations of input data in the formulas used in Annex 3.

The above-mentioned indicators are the basis for calculating energy savings; however, the formulas need to be adapted so that the energy savings from the measures to be taken can be calculated both for different sectors where energy is consumed and for different forms of energy. Therefore, the top-down and bottom-up indicators need to be combined and modified to cover all the sectors and forms of energy. It should also be borne in mind that data on the implementation of specific measures will be collected by various state authorities, the state’s foundations and companies (e.g. KredEx and EIC). In order to simplify the preparation of consolidated reports, the Ministry of Economic Affairs and Communications (MoEAC), the entity in charge of gathering the data, should establish basic units and forms for the annual submission of data.

5.2.7 Additionality

According to the Analysis of the options for implementing Energy Efficiency Directive 2012/27/EU executed by AF Consulting AS (Analysis of the options for implementing Energy Efficiency Directive, 2012/27/27, 2013), an additional energy saving potential exists with regard to the minimum energy efficiency requirements for energy using products which fall

within **the Ecodesign Directive 2009/125/EC²** and **The Energy Labelling Directive 2010/30/EU¹¹³**.

² Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products

Creating a measure that supports the purchase of products, which meet higher energy efficiency requirements established under EU legislation can be included in alternative energy saving measures and counted towards additional energy savings under article 7. However, Estonia doesn't foresee the implementation of any of these measures as of today.

5.2.8 Verification & Monitoring

Table 8 shows the monitoring and verification protocols that are intended to assure the independence of both EEOs and financing schemes from the obligated, participating or entrusted parties.

Table 8: Expected energy schemes distribution during 2014-2020

Energy efficiency obligation schemes	Financing schemes
Monitoring and verification protocols: the authorities will be guided by the Administrative Procedure Act ⁴ .	No additional monitoring mechanisms will be added to the one conducted by the implementing public authorities, because these authorities will be audited within the EU cohesion policy implementation framework.
Ensuring independence: the criteria laid down in Section 10 of the Administrative Procedure Act will be used to ensure independence.	

Source: Estonia's Notification to the European Commission.

³ Directive 2010/30/EU of the European Parliament and of the Council of 19 May 2010 on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products

Regarding audits protocols, table 9 distinguishes those designed for EEOs and for financing schemes:

Table 9: Audit protocols for EEOs and financing schemes

Energy efficiency obligation schemes	Financing schemes
<p>Audit protocols will include at least the following:</p> <ul style="list-style-type: none">• Information on the person/authority conducting the audit and on the obligated party;• information on the audited measure;• Information on sampling and audited activities carried out under the measure in question;• Assessment of the effectiveness of the audited measure;• Report (conclusion) of the person/authority conducting the audit.	<p>No additional monitoring of implementing public authorities will be arranged, because these authorities will be audited within the EU cohesion policy implementation framework.</p>

Source: Estonia's Notification to the European Commission.

5.2.9 Control and Compliance

The grounds for establishing an energy efficiency obligation scheme will be laid down in the Organization of Energy Management Act (hereinafter "OEMA"). The OEMA: specifies that the authority imposing the energy efficiency obligation is the Government of the Nation.

Fines are the only system of penalties foreseen in case obligated parties don't comply with the duties of paying energy and CO₂ taxes, which are the main mode to achieve the energy saving targets. As far as EEOs are concerned, Estonia has not designed any mechanism of punishment in case obligated actors don't comply them.

5.2.10 Administrator - Institutional set up

Although the Act transposing the EED is still a draft, the Competition Authority is expected to act as the administrator of the EEOs.

In addition, there is an existing network of state companies and foundations that will be responsible for the implementation of the energy efficiency measures. Within the Ministry of Communication and Economic Affairs the following institutions form the institutional set up for the implementation of the Estonia's NEEAP: KredEx in the field of reconstruction of housing to increase its energy efficiency, the EIC in the modernization of public infrastructure, the Enterprise Estonia Foundation in the implementation of entrepreneurship and regional policy measures, and Riigi Kinnisvara AS (State Real Estate Ltd.) in the management of public buildings.

The OEMA states that the monitoring of the performance of the EEOS will be based on enterprise's annual reports, which be verified by an independent competent expert.

The annual report will be collected by the Completion authority, which will prepare a consolidated document regarding the implementation of the energy obligation scheme.

5.2.11 Flexibility

The Estonian NEEAP foresees the combination of alternative policy measures:

- Energy and CO₂ taxes
- Financing schemes

To cover the part that falls short of the target (7140 GWh for the entire obligation period), the following options considered:

- Implementation of additional financing schemes;
- Modification of energy and CO₂ taxes;
- Introduction of the energy efficiency obligation scheme in Estonia.

However, a decision regarding the option to cover the energy savings that cannot be covered by the energy and CO₂ taxes and financing schemes is not been decided yet.

In March 2015, there will be elections in Estonia and although important changes as far as the targets are not expected, the combination of measures to achieve the national energy saving targets might experience some modifications.

5.3 Social equity

5.3.1 Contributors

The implementation of EEOs and alternative measures will be carried out through the EU structural funds (around 4.6 billion euro) and also through the contributions of obligated parties to the Energy Efficiency National Fund (see 5.2.1). Additional revenues will come from emissions trade schemes.

On the other hand, Estonian banks have not opened a private initiative-based financing channel dedicated to energy efficiency. Furthermore, there is currently no national fund in Estonia that can be regarded as an Energy Efficiency Fund. However it might be established in the future. The method of financing the Energy Efficiency Fund would be through the contributions of the companies that do not take their own measures to meet the energy efficiency obligation. Contribution to the Energy Efficiency Fund will be determined on the basis of the nature of potential energy saving measures and the manner of financing the measures.

5.3.2 Beneficiaries

The Estonian NEEAP focuses on final consumers and households.

5.3.3 Impact on energy prices or tariffs

It is expected that energy prices will rise with the implementation of EEOs. The Estonian government expects that the energy prices increase, due to CO₂ taxes won't be higher than the 3%.

Although it is not directly related with the implementation of EEOs, it is important to mention that the **liberalization of the electricity sector** took place in 2009. Estonia is now part of the Nord Pool wholesale market. In 2009, the three Baltic states of Latvia, Estonia and Lithuania committed to the development of an open and transparent Baltic electricity market and its integration into the Nordic electricity market in line with the relevant EU

legislation. The Competition Authority, a strong independent regulator is now in place and the transmission system operator, Elering, is investing in new infrastructure to strengthen regional electricity supply and an emerging Nordic-Baltic regional market.

All these circumstances are previous to the potential implementation of EEOs and will have an impact on electricity prices and consumption levels. However, it would too premature to state how they might vary.

5.4 Recommendations

According to the assessment of Energy Efficiency Action Plans and the Policies in EU Member States executed under the auspices of the Energy Efficiency Watch Program, the Government of Estonia should:

- In completing the new energy strategy, pursue policies that place a priority in securing long-term energy supply by reducing carbon intensity in the energy mix, on promoting a cost efficient regional approach to gas natural gas supply, on developing new electricity infrastructure and on increasing the share of renewable energy resources in the supply mix.
- Consolidate existing energy efficiency activities into a single body with long term funding and adequate capacity to improve the targeting, integration, effectiveness and profile of energy efficiency measures. Upgrading DH systems and the existing building stock should remain a high priority.
- Continue to strengthen relationships with neighboring countries and international bodies to support regional harmonization and co-ordination of energy policies, necessary for the integration of Estonia into the European and regional natural gas and electricity markets.

5.4.1 Areas for improvement

To further strengthen its framework, Estonia should improve the following aspects:

- Public sector should have a long-term strategy.
- Building sector must address education and training for professionals as well as more information campaigns to raise awareness among the general public.

- Appliance sector: should go beyond minimal EU requirements. The national action plan estimates that there is an energy saving potential of 20% with regard to this sector. Plans for additional measures exist such economic incentives to improve/renew appliances and education & training should be introduced.

5.4.2 Strong characteristics

Energy savings in buildings is the main priority of the Estonian EE policy, since most of the country's building stock was constructed before any energy performance requirements were introduced. However, building sector measures must address education & training for professionals to enable up-to date renovations and expertise.

The industrial and tertiary sectors are rather well balanced. They consider several aspects and provide a range of incentives and legislative acts to support EE in the production processes. There are also supporting measures for energy conservation by manufacturers and a financial instrument that includes energy audits and financing opportunities.

6 Hungary

6.1 Policy objectives of EEO

Although the reported scarcity of communication coming from Hungarian stakeholders about existing and planned EEOs, according to prestigious sources⁵ Hungary does not provide whatsoever sufficient information nor about general characteristics of future EEO, nor on *target calculation* in assessing *eligible exemptions*.

Detailed information about *obligated parties* under EEO scheme are also missing or not available. Obligated parties as Energy Distributors, Distributors/retailers of road transport fuels, retailers and suppliers and other commonly obligated parties have, in the few official documents and communications available, only a general definition in terms of acknowledgment of their saving and reduction targets.

Due to this wide lack of detailed information about alternative policies' *implementation measures* (instead of EEO or a combination of them), in order to achieve its target, Hungary is also *suspected* to have taken *non-eligible measures* or *non-additional savings* because its reports contains no or very little information about measures envisaged.

The recent confirmation of Hungary as one of November 2014's *infringement package* recipient regarding Commission's request to fully transpose EU legislation on Energy Efficiency, confirms Hungary's lack of awareness regarding EEO.

As pointed out by analysts, the reason behind Hungary's lack of receptiveness of EU's policies and directives regarding energy efficiency lies in the recent political renovation process.

⁵<http://energycoalition.eu/sites/default/files/20140422%20Coalition%20for%20Energy%20Savings%20Art%207%20Report%20FINAL.pdf>

Although the above mentioned lack of detailed information, Hungary's report can be considered as a tentative to undertake decisions or policies measures. On the base of an Official Report to the European Commission, Hungary is committed to fulfill the targets set out in Directive 2012/27/EU on Energy Efficiency, supporting all measures able to improve the competitiveness of both domestic and European Union markets⁶. Hungary plans to boost economic growth with the creation of a qualified and specialized labor force in the energy efficiency sector in accordance with the cumulative target established by Art. 7, based on incremental annual saving that deliver a total volume of savings at the end of the obligation period in 2020⁷.

It is Hungary's interest as member state of the EU to adopt political and practical measures as well as to develop policy's objective and transparent obligation schemes, which consider obligated parties' interests in achieving EU and Governmental energy policy ambitions. In fact Hungary's average energy savings target for the period 2010-2012 not including the transport sector is set in 2 001 927 778 kWh, while is set in 2 748 358 333 kWh including the transport sector.

Complying with the obligation of Art.7, Hungary is considering introducing an Energy Efficiency Obligation scheme accordingly with Art. 7(1). National legislation transposing the Directive will cover the introduction and functioning of the EEO scheme as well as obligated parties' responsibilities and tasks.

⁶ Report to the European Commission pursuant to Article 8 of Directive 2012/27/EU of the European Parliament and of the Council on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (http://ec.europa.eu/energy/efficiency/eed/doc/article7/2013/article7_en_hungary.pdf)

⁷ "20-20-20" targets: a) 20% reduction in EU greenhouse gas emissions from 1990 levels; b) Raising the share of EU energy consumption produced from renewable resources to 20%; c) 20% improvement in the EU's energy efficiency.

6.2 Design of EEO

Hungary is currently examining the impact of EEO on individual operators in the single energy market and considering which sector will be involved in compliance with Art 7. Operators are identified as *energy distributors* and *retail energy sales companies*.

Hungary is still examining the distribution of the energy saving obligation within the time period concerned. Hungary plans to set the obligation period between 2014 and 2020 (period in which the energy efficiency saving rate should increase linearly) and within this period Hungary is planning to intermediate interim period as 2014-2017 and 2018-2020.

On top, Hungary is currently determining the amount of sales, by volume, of energy sold according to Art. 7(2)(b) (Other Exemptions) for companies falling within the scope of Directive 2003/87.

Hungary is currently determining *eligible measures' categories* according to point 4(e) of Annex V (*Common methods and principles for calculating the impact of energy efficiency obligations schemes or other policies measures under Art. 7(1), (2),(9) and Art. 20(6)*).

Hungary is planning to express energy savings to be achieved with its policy measures in final energy consumption through the application of conversion factors of Annex IV and considers as authoritative the provisions of point 1 (a) and (b) of Annex V of the Directive. Therefore, according to point 1 of Annex V of EED (“[...] obligated, participating or entrusted parties or implementing public authorities may use of one or more of the following methods for calculating energy savings”), in order to calculate the effects of Art.7(1) of EED and the various policy measures, Hungary is considering reasonable to apply *ex-ante* methods ((a) *deemed savings* as the result of previous independently monitored energy improvements in similar installations) and *ex-post* methods ((b) *metered savings*, as savings resulting from the installation of a measure or a package of measures and the recording of the actual reduction of energy use).

Although during recent years, Hungary has published several documents about the importance of energy efficiency policies, especially related to the NEEAP implementation, experts emphasize the *scarcity* of effective actual measures in order to realize such ambitious goals and the issues of solid financing methods to sustain those objectives.

6.2.1 Type of measures

As Hungary is currently determining *eligible measures' categories*, no detailed information about their design and structure are available. As stated by Hungarian stakeholders, “concrete and planned measures will be reported at a later stage, once the final concept has been developed”.

Hungary lacks further details about types of measures it will implement.

6.2.2 Scope - sector related

In order to ensure that energy savings claimed towards EED targets are additional, and that the activities of the future obligated or entrusted parties have made a material difference to the end-use consumer's decision to invest in the energy efficiency measure, Hungary requires and confirms the **material demonstrability** of obligated parties' activities in terms of energy savings achieved.

However, a specific description of those sectors or a definition of their future obligations is not provided.

6.2.3 Scope – technology related

The *estimated* energy saving target could change if the concessions under Art. 7(2) are applied, taking account of the restrictions laid down in Art. 7(3) regarding limits on Energy reduction.

6.2.4 Obligated parties

Hungary is currently examining impact of the EEO scheme on individual operators on the single market in energy, specifically *energy distributors* and *retail energy sales companies*, with the possibility to include also *transport fuel distributors* or *transport fuel retailers*.

Hungary is also considering which sectors it recommends involving in compliance with the obligation under Article 7. The examination will also determine the extent to which the objectives of national energy policy can be brought into line with the energy efficiency targets laid down in the Directive.

Once the examination is complete, companies among energy distributors and retails energy sellers will be entitled as *obligated parties*.

Hungary is completing the examination on the base of criteria of *objectivity* and *non-discrimination* in order to establish which companies among *energy distributors* and *retails energy sales companies* and which target groups in the energy sector could be considered as obligated parties.

No further information on obligated parties are available.

6.2.5 Target setting

According to EED, Hungary is planning to achieve the following energy saving target between 2014 and 2020:

Art. 7.1 (about *partial or full exclusion of energy used in transport from the target volume*) allows sales of energy to transport to be excluded from the base against which the target is calculated.

Table 10: Energy savings 2014-2020, not including the transport sector

Year	Energy volume in Final Energy [PJ]	Energy volume in final energy [kWh]	Targets (1.5%) [kWh]	Average targets 2014-2020 (1.5%) [kWh]
2010	499	1 386 624 722 223	2 079 370 833	2 001 927 778
2011	483	1 342 259 166 668	2 013 887 500	
2012	459	1 275 501 666 668	1 912 525 000	

Table 11: Energy Savings 2014-2020; including the transport sector.

Year	Energy volume in final energy [PJ]	Energy volume in final energy [kWh]	Targets (1.5%) [kWh]	Average targets 2014-2020(1.5%) [kWh]
2010	685	190 330 555 557	2 854 958 333	
2011	664	184 308 888 890	2 764 633 333	2 748 358 333
2012	630	175 032 222 224	2 625 483 333	

Table 12: Energy saving targets 2014-2020.

	NOT INCLUDING THE TRANSPORT SECTOR	INCLUDING THE TRANSPORT SECTOR
ENERGY SAVING TARGETS	2 001 927 778 kWh	2 748 358 333 kWh

Source: Hungarian Energy and Public Utility Regulatory Authority (calculated on the base of EUROSTAT data)

The average final consumption in the base years expressed in GWh provides the energy quantity based on which the obligation is determined. The 1.5% average target of this, not including the transport sector corresponds to 2 GWh, while; including the transport sector, it correspond to 2,7 GWh.

6.2.6 Calculation method savings

In establishing the lifetime of measures by calculating the saving achieved between the completion of the measure and the end of the obligation period, according to point 2 (e) of Annex V, Hungary is considering the opportunity of introducing an alternative calculation method.

The prevailing lack of detailed information about Hungarian NEEAP pointed out by international observer is raising concerns among the very same community. Observers also point out the lack of details in calculating Energy Efficiency Obligation lifetime.

6.2.7 Additionality

Additionality is not taken into account by the Hungarian government as of today.

6.2.8 Verification & monitoring

Hungary intends to design transparent audit and verification schemes and protocols as well as monitoring and control system according to point 4 (j) and (k) of Annex V and Art. 7 (h) and (i) of Directive 2012/27 EC.

According to Hungarian law there are two bodies whose duties could include the functioning and inspection of the obligation scheme:

- The *Hungarian Energy and Public Utility Regulatory Authority*⁸;
- The *Ministry for National Development (the Minister responsible for energy policies)*⁹.

External observers point out the insufficient level of communication and cooperation between those two Governmental Institutions with a consequential impossibility in defining duties and tasks related to the EEO scheme.

No specific provisions about their competences in verification and monitoring the development of the EEO scheme are available.

According to the *Regional Association of Energy Regulators*, the Hungarian Energy and Public Utility Regulatory Authority (HEA) regulates and supervises the activities of electricity, natural gas, district heating and public water utilities companies. It also has competences

⁸ The Authority is an independent legislative body, which is subject only to legislation and performs tasks relating to the provision of the state's electricity, natural gas and district heating and water utilities and draws up the pricing regime for waste management public services. . As the body responsible for energy statistics, the Authority has also data on license holders and energy consumption.

⁹ MND is responsible for the Environmental and Energetics Operative Program financed from the Structural Funds, which program is also to serve the support of infrastructural investments in energy supply (<http://www.cep-rec.eu/project-partners/ministry-of-national-development-hungary-hu/>)

regarding waste management price regulation, energy statistics and consumer protection. Among others, it is responsible for: monitoring the compliance with the obligations of the licenses, competition in the electricity and gas market, market analysis and regulatory inspections, issuing decrees or amendments.

6.2.9 Control and compliance

Hungary is still examining which authority will perform inspectional and operational tasks in the framework of the obligation scheme.

According to Hungarian law, the *Hungarian Energy and Public Utility Regulatory Authority* and the *Ministry for National Development*, as bodies responsible for energy policies are in charge for control and compliance tasks¹⁰.

6.2.10 Administrator – Institutional set up

The Hungarian Energy and Public Utility Regulatory Authority ('the Authority') issues trade/distribution licences under Act LXXXXVI of 2007 on electricity, Act XL of 2008 on natural gas supply and Act XVIII of 2005 on district heating, and therefore has up-to-date information on license holders.

6.2.11 Flexibility

No information available

¹⁰ http://www.gvh.hu/en/gvh/cooperation_agreements/hungarian_energy_office

6.3 Social equity

Socio-economic improvements are currently being estimated through cost-benefit analyses conducted by international joint ventures of energy consulting companies in order to assess the impact of energy policies on end users.

Although European studies and research on unemployment repercussion seem not to take into consideration energy efficiency obligation schemes as a decisive factor able to improve unemployed citizens conditions, Hungarian NRP (Széll Kálmán Plan) considers to enhance economic growth through the implementation of energy efficiency policies. The lack of up to date official documents does not contribute to an empirical evaluation of EEO schemes contribution in boosting social equity.

The Hungarian Energy Office¹¹ has asked the Regional Centre for Energy Policy Research (REKK), in partnership with KEMA Consulting, to prepare studies on "the European regional electricity and natural gas market tendencies.

6.3.1 Impact on energy prices or tariffs

Difficult to assess at this planning stage.

6.4 Recommendations

6.4.1 Areas of improvement

According to Hungarian Ministry of National Development, "The most important propositions of the Energy Strategy in order to achieve a competitive, sustainable and secure supply are as follows:"

¹¹ http://www.gvh.hu/en/gvh/cooperation_agreements/hungarian_energy_office

- Reduction of energy consumption through energy savings and improving energy efficiency;
- Increasing the use of renewable energy and energy with low carbon dioxide emissions (it is expected that the share of renewable energy in primary energy use will rise from the current 7 percent to the vicinity of 20 percent by 2030). The estimates for growth until 2020 (the target set being a share of 14.65 percent in terms of gross final energy consumption) are described in detail in Hungary's NREAP;
- Power plant modernization;
- Modernization of community district heating and private heat generation; - Increasing the energy efficiency and reducing the CO2 intensity of transport;
- Green industry, renewing agriculture;
- Strengthening the role of the state (the presence of the government is currently rather moderate on a market-oriented, liberalized and highly privatized energy economy).
- The government is primarily able to assert its priorities through regulatory instruments, in accordance with the rules of the European Union. In itself, the ensuring of the coherence of legal and economic conditions is insufficient in order to efficiently vindicate public good and national interests.

While in the electric power sector, the government continues to have a substantial direct potential to influence the market through the state-owned MVM zrt. (Hungarian power companies Ltd.) and the Paksi Atomerômû Zrt. (Paks Nuclear power plant Ltd.), a similar potential should be established in the natural gas and oil sectors, with particular regard to the expiry in 2015 of the long-term natural gas contract between Hungary and Russia. This may include the granting of new authorizations to the MVMzrt creating a new state-owned

natural gas trading company or acquiring a controlling interest in a company with a high market share¹².

¹²<http://20102014.kormany.hu/download/7/d7/70000/Hungarian%20Energy%20Strategy%202030.pdf>

7 Lithuania

The introduction of an EEO in Lithuania has proved to be a major challenge. The *Law of the Republic of Lithuania on energy efficiency* and supporting provisions that will lead to the implementation of the EEO, are expected to be put to the final reading in the Lithuanian Parliament in the spring 2015 and hopefully, subsequently passed. Despite the original deadline for the passing of the law on 5 July 2014, the first draft of the legislation was rejected in the second quarter of 2014 due to the fact that a number of questions on how it was to be implemented remained unanswered, and most importantly clarification on how DSO will be allowed to cover their costs. A task force with representatives from the Ministry for Energy, National Commission for Energy Control and Prices and the obligated parties was established in August to get the required clarification for the draft legislation.

The challenges have been aggravated by political uncertainties. Lithuania had no Minister for Energy for a couple of weeks in September 2014 and the current Minister for Energy just took office in October 2014. The *Law of the Republic of Lithuania on energy efficiency* is much more than just minor revisions of an existing body of laws and hence requires considerable involvement of the Minister for Energy as well as the Prime Minister and Minister of Justice. So the change of Departmental Minister has added to the challenges of the legislative roadmap. Municipal elections in Lithuania are to take place 1 March, which also will influence the national political climate and make the energy efficiency law a potential political battleground.

Due to the fact that the Law is still in the process of being drafted, and that the first draft was rejected which has resulted in a cautious openness about the final results of the legislative process, **and very limited information is therefore available about the expected setup of the EEO in Lithuania.** The information below reflects the stakeholders' perspectives that may be discussed with regards to the expected setup at this point in time, but may differ from what will be passed as law in 2015 eventually.

From 2010 onwards it has been possible for the energy companies to make voluntary agreements with the Lithuanian Energy Agency about improving energy efficiency. Agreements have been signed with 8 heat supplying enterprises, undertaking to save 355.38 GWh during the agreed period and 1 electricity transmission enterprise undertaking to save 2.2 GWh of electricity during the agreed period (the exact period is unknown). Actual savings in 2012 were 169.89 GWh and the total estimated energy savings between the initiation of the agreement in (skriv årstal) and 2012 (inclusive) is 331.55 GWh. It is at the

present point in time unclear to which extent the future EEO will be able to build on the legal framework already established to make voluntary agreements possible.

At the time of writing this report, there are several issues that are undecided or undetermined, it is therefore not possible to comment in detail in some sections.

7.1 Policy objectives of EEO

The policy objectives of the EEO is to improve energy efficiency, and reduce the negative impact on the environment by improving energy efficiency.

7.2 Design of the EEO

7.2.1 Type of measures

The type of measures that will be used in Lithuania are not yet available. .

7.2.2 Scope – sector en technology related

The EEO will focus on the implementation of energy efficiency improvement measures in the sectors of buildings and the industry. How this focus will be ensured remains unclear at this point in time. Although the implementation of the measures is to be promoted in the sectors of the industry and buildings, there are no limitations that prevent the obligated parties from seeking optimal energy savings in other areas as well. The obligated parties can implement energy efficiency improvement measures at all end-users.

7.2.3 Obligated parties

In the first phase of the EEO Scheme, the obligated parties in Lithuania will be:

- Two electric DSOs, the largest of which is Lesto supplying 44.2% of all electricity.
- One gas company, Lietuvos dujos, distributing 97.3% of the total amount of natural gas.
- District heating companies that sell more than 90 GWh of heat, amounting to ten companies in total.

The main responsibilities of the obligated parties are:

- To ensure that end-users implement energy efficiency enhancement measures;
- To provide the Lithuanian Energy Agency with information on the scope, costs and energy savings associated with the energy efficiency enhancement measures implemented by the obligated party;
- To formulate proposals for the Lithuania Energy Agency to include energy efficiency enhancement measures into a catalogue of standard energy efficiency enhancement measures and achievable savings.

7.2.4 Target setting

The total target of the EEO is divided into two periods:

Table 13: Total target of the EEO

Period	Target
01.01.2014-31.12.2016	45.92 ktoe
01.01.2017-31.12.2020	183.68 ktoe

Source: Article 7 notification

There is still no decision on how to distribute the target among the obligated parties. But expectations are that it will be based on the share of the total energy sales.

7.2.5 Calculation methods for energy savings

A catalogue of standard energy efficiency enhancement measures and achievable savings is to be compiled. The Lithuanian Energy Agency will perform system monitoring and evaluation of functions and make suggestions with regards to the inclusion of additional measures to the list of standard energy efficiency improvement measures, which are not yet compiled, or changes in the existing measures, if the current progress is deemed insufficient and the saving target may remain unattained.

New procedures/Methods for calculating energy savings for measured not covered by standard the energy efficiency enhancement measures will be developed. Until then calculation, auditing, control and verification will be performed in accordance with current legislation:

- Energy savings are calculated in accordance with the Calculation Rules and the Monitoring Rules;
- Audits are conducted in accordance with the current Appraisal Procedure as well as the Methods for conducting audits in public buildings, and the Methods for conducting audits of technological processes and installations;
- Monitoring and verification reports and these reports independence of obligated, participating or entrusted parties are ensured in accordance with the requirements of the said Calculation Rules and the Monitoring Rules.

7.2.6 Additionality

The Ministry of Energy is still in the process of defining how to handle additionality and no information on expected procedures is therefore available.

7.2.7 Verification & Monitoring

The Ministry of Energy is still in the early stages of drafting the verification and monitoring procedures and no information is therefore available.

7.2.8 Control and Compliance

The Ministry of Energy is still drafting the control and compliance measures. The only information available at the moment, is that the Ministry of Energy expect that will be necessary to introduce fines to ensure compliance.

7.2.9 Administrator - Institutional set up

The division of responsibility according to the NEEAP and the Article 7 notification is as follows:

- **Lithuanian Ministry of Energy** – Coordinator of EEO Scheme and is responsible for:
 - (i) Establishment of the overall energy end-use savings target;
 - Establishment of the EEO Scheme operating periods;
 - Determination of specific obligated parties and obligations for the given time periods;
 - Lay down the principles for sanctioning the obligated parties;
 - Lay down the principles for evaluating energy savings;

Establishment of the procedure for reimbursing the costs incurred by the obligated parties while implementing the obligations imposed on them;
Lay down the functions of an EEO Scheme administrator;
Imposing sanctions on obligated parties that fail to fulfill their obligations.

- The Lithuanian Energy Agency – Administrator of EEO Scheme and is responsible for:
 - (i) Establishment of a catalogue of the standard energy efficiency enhancement measures and achievable savings;
Adoption of Methods which the obligated parties must use in order to calculate savings;
Carry out quality control, savings calculation and monitoring and perform evaluation functions;
Verification system to ensure that the obligated parties have implemented the measures at the requisite level of quality;
Gather information about the implemented efficiency measures;
Draw up the reports, according to the achieved results.

- **The Obligated Parties** – are responsible for:
 - (i) ensure that end-users implement energy efficiency enhancement measures;
provide the Obligation Scheme administrator with information on the scope, costs and energy savings associated with energy efficiency enhancement measures;
make proposals for including energy efficiency enhancement measures into the catalogue of the standard energy efficiency enhancement measures and achievable savings.

7.2.10 Flexibility

The Ministry of Energy is still in the early stages of drafting the rules regarding the flexibility and therefore no information is available.

7.3 Social equity

7.3.1 Contributors

To define how financing will be collected on the basis of the tariffs is one of the major unresolved issues at the time of writing.

7.3.2 Beneficiaries

No particular beneficiaries are designated at present other than a very broadly formulated intention stated in the section *Scope - sector related*.

7.3.3 Impact on energy prices or tariffs

Full cost recovery will be allowed in Lithuania.

7.4 Recommendations

Due to the fact that relatively limited information is available about the laws implementing the EEO, it is not possible to provide meaningful recommendations at this point in time.

8 Luxembourg

8.1 Policy objectives of EEO

Luxembourg intends to achieve the 1.5% savings objective imposed in Article 7(1) of the Energy Efficiency Directive through an Energy Efficiency Obligation upon all Luxembourg's electricity and gas suppliers. This EEO targets cumulative final energy savings of **5,993 GWh** to be reached collectively by these energy suppliers on Luxembourg soil between January 2015 and December 2020. After studying various existing EEO scheme, Luxembourg chose to introduce a scheme similar to the Danish one.

8.2 Design of EEO

Luxembourg's EEO started on 1st January 2015 and will run up to 31st December 2020. Although a fixed duration has been set for the obligation period, it does not mean that the scheme cannot continue to operate after that time period. The time period has been set merely to simplify the calculation of the extent of the obligation. After 31 December 2020, the government could still decide to continue the obligation by simply adapting the relevant legal and regulatory provisions. The scheme might also be revised at some point between 2015 and 2020.

8.2.1 Type of measures

To reach their energy saving obligation, obligated parties will be allowed considerable flexibility in terms of the nature of their actions towards final consumers.

They may:

- **grant financial assistance;**
- **offer information/consultations/audits;**
- **offer a combination of financial assistance and advice.**

Measures aimed at changing the consumer's behavior are not excluded, even if no such standard actions have been defined so far.

8.2.2 Scope - sector related

Luxembourg' EEO scheme will target all final energy consumers: households, enterprises and public authorities. In addition, obligated parties are free to implement measures in all consuming sectors for all types of energies, including heating oil and automotive fuels.

8.2.3 Scope - technology related

Luxembourg's EEO mainly focuses on hard investments in energy-efficient equipment or materials for:

- Building envelope (walls, windows, roof, floor)
- Heat production
- Mechanical ventilation
- Domestic appliances
- Office appliances
- Lighting
- Energy efficiency for the industry (Engines, pumps, ventilation, cooling, heating, pressurized air)
- Energy management
- Transport (Replacement of cars)

The scheme will promote the deployment of best available technologies and favors those measures that yield the highest energy savings.

8.2.4 Obligated parties

Luxembourg's EEO will apply to all suppliers of electricity and natural gas serving the residential, service and industrial sector, based on their market share. The obligation will apply to all suppliers operating within Luxembourg regardless of size or the extent of their client base.

Based on the latest official lists of businesses, possessing a supply authorization, this obligation will potentially concern:

- 25 suppliers of electricity, among which Enovos, Arcelor Mittal Energy and LEO cover most of the market;
- 10 suppliers of natural gas, among which Enovos, Sudgaz and LEO cover most of the market.

The official list of electricity and natural gas suppliers is available on Luxembourg Regulator Authority website:

- For electricity suppliers: <http://www.ilr.public.lu/electricite/fournisseurs/elec-liste-fournisseurs-022015.pdf>.
- For natural gas suppliers: <http://www.ilr.public.lu/gaz/fournisseurs/gaz-liste-fournisseurs-02-105.pdf>

8.2.5 Target setting

Global target

Based on EUROSTAT's final energy sales data available for the years 2010 and 2012, Luxembourg's final overall consumption of energy (excluding transport) amounts to an average of 19,027 GWh per year. In line with Article 7, obligated parties will have to achieve further savings of 1.5% of overall annual energy sales each year from 1 January 2014 to 31 December 2020. Luxembourg intends to make use of the option of reducing the volume of energy savings by 25%, by excluding part of the sales of energy used in industrial activities covered by the ETS Directive (Art 7, 2, a). The cumulative energy saving objective for Luxembourg to be achieved by obligated parties then amounts to **5,993 GWh**.

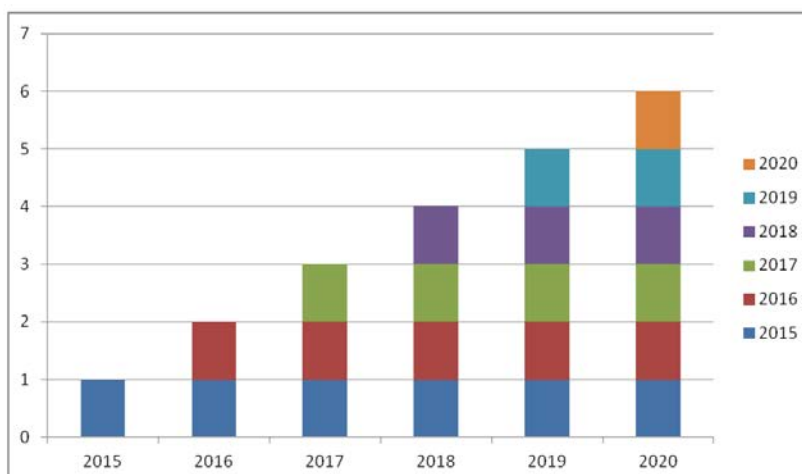


Figure 1: Breakdown of Luxembourg's saving target per year.

(Source: Projet de Règlement Grand-Ducal)

Luxembourg's EEO is based on the achievement of an annual saving obligation between 2015 and 2020, that would deliver the expected cumulated energy savings by 2020.

⇒ With the hypothesis that all measures' lifetime are over 6 years¹³, the annual objective to be achieved by obligated parties represents 1/21 of this cumulative target, or 285.4 GWh.

The energy savings resulting from an action are reported for that year during which the action was implemented (corresponding to the billing date). Energy savings resulting from measures implemented by obligated parties from 1st January 2014 can be reported to comply with this obligation.

Sub-target per obligated parties

In order to ensure a fair distribution of the obligation between energy suppliers, the global obligation will be shared between obligated parties depending on their market share during the previous year. The Ministry of Economy will notify obligated parties each year the volume of energy savings they have to reach during the following year:

- estimated volume will be communicated at least a month before the beginning of the year considered.
- final volume will be communicated no later than May 31st of the on-going year.

The obligation continues beyond the ceasing of activity until the end of the following calendar year.

¹³ This is not the case. To correct this, only savings corresponding to measures with lifetime beyond 31st December 2020 are fully taken into account. See more details in next section.

8.2.6 Calculation method savings

Obligated parties may fulfill their obligation by implementing standard or specific measures.

Baseline:

For both standard and specific measures, the baselines to be taken into account are the following:

- For the construction of new buildings: a building with similar characteristic and respecting the minimum energy performance required at the date the building permit is asked.
- For the refurbishment of existing buildings: the building initial consumption.
- For the replacement with asset retirement of equipment in working order: the initial equipment consumption.
- For the modification/repairation of equipment: the consumption of the initial equipment before any modification.
- For the replacement of equipment that are no longer in working order: the corresponding standard equipment respecting the minimum energy performance required by European or national regulations, especially directive 2009/125/CE. When no regulation exists, the baseline is the standard equipment on the market.
- For the maintenance of existing installations/equipment that are not required by European or national regulations: the savings resulting from a gain in energy efficiency that goes beyond what can be expected from a normal maintenance.
- Etc.

Lifetime and savings reporting:

While Luxembourg indicated in its notification to the Commission regarding the transposition of article 7 that, in order to simplify the obligation scheme, it would establish 2 or 3 categories of lifetime for measures, it finally decided to use actual lifetime for measures.

For measures that generate energy savings that last at least until 31st December 2020, obligated parties will receive the entirety of the corresponding annual energy savings the year of the measure's implementation.

- ⇒ If an obligated party implements in 2016 a measure that generates annually 10MWh energy savings for 10 years, it can report 10MWh for its 2016 annual objective.

However, for measures with a lifetime shorter than 31st December 2020, the energy savings that can be reported are obtained through a pro-rata calculation taking into account the number of missing years until 31st December 2020.

- ⇒ Savings reported = Annual savings x Lifetime / (2021 – n)
Where n is the year of implementation
- ⇒ If an obligated party implements in 2016 a measure that generates annually 10MWh energy savings for 2 years, it can report 4MWh for its 2016 annual objective [10 x 2 / (2021-2016)].

Standard measures:

Standard measures that can be implemented and reported by obligated parties are defined in a catalogue (Annexe 2 of the Projet de Règlement Grand-Ducal - www.csl.lu/component/rubberdoc/doc/2542/raw).

For each measure, forfeit energy savings have been defined through a deemed saving approach, depending on the various options that can be encountered (i.e.: heating energy, initial and final energy performances of the equipment...). The catalogue also defines each measure's lifetime. For standard measures, only these deemed savings can be used, even when obligated parties can access actual energy savings. When several standard measures are implemented for a same beneficiary, the obligated party must report the sum of the forfeit savings defined for each measure. The main goal of standard measures is to allow a simple, efficient and standard recording of energy saving measures. The catalogue focuses on the technical measures whose effects can be easily measured and documented. It contains so far 34 measures, and will be adapted regularly to take account of the popularity of the various measures.

Luxembourg has enlisted the services of a Luxembourgish and a Danish consultant to help identify the standard measures to be included in this catalogue and to define, based on the knowledge currently available, the savings that could reasonably be expected from the various actions. They worked together with Luxembourg energy agency, My Energy.

Specific measures:

Obligated parties remain free, with few restrictions, to implement any other energy efficiency measure not listed in the catalogue of standard measures (measures included in

the catalog cannot be reported as specific measures). This will give room to the obligated parties' creativity in developing original measures and larger projects.

In the case of specific measures, obligated parties are required to document and justify the calculation of estimated energy savings in accordance with the calculation methodology stated by regulation:

- The **measures lifetime** must be elected based on the EN 15459 standard or, if not applicable, on VDI 2067 standard. If no standard applies, the lifetime must be defined based on actual technical parameters of the measure (for instance: in the case of a modified equipment/refurbished building, the measure lifetime is the remaining lifetime of the equipment/building). For measures targeting the optimization of an installation or an increase of production, the lifetime to consider is 1 year.
- The calculation of the energy savings resulting from a specific measure includes at least:
 - The calculation of the energy consumption prior to the measure
 - The calculation of the energy consumption after the measure
 - The calculation of the effect of the measure, over the 1st year after its implementation.

All these calculations must be based on supplier's technical data, experts' analysis or any admissible evidences, including energy meters or bills. When several types of energy are targeted by the measure, these calculations must be done individually for each type of energy.

The level of detail of these calculations must be adapted to the nature and size of the specific measure.

The following energy savings are not eligible to specific measures:

- Savings in the transport sector
- Savings generated by the installation of electric storage heating systems
- The closure of an installation
- A production cut
- Measures with a lifetime below 1 year

8.2.7 Additionality

“Obligated parties leading and incentive role” additionality:

Only energy savings achieved as a result of an action implemented by the obligated parties may be recorded. By this, the Ministry means any direct contribution, whatever its nature, brought by the obligated party or through an intermediary, to the beneficiary, and which allows the realization of that measure. This contribution must have been made before the measure is ordered. Upon request, the obligated parties will have to be able to demonstrate that the implementation of the energy efficiency measure resulted from or was prompted by them.

Policy additionality:

Other existing measures (i.e. tax credit, eco loans) are already in place in Luxembourg, but since these measures were not notified as a way to achieve article 7's target, there will be no risk of double counting. Still, in the case that measures reported under the EEO also received State's support, obligated parties will have to demonstrate that it is their contribution that triggered the implementation of the measure.

«Business as usual» additionality :

As said before and explained in the project of Règlement Grand-Ducal, energy savings can only be estimated in comparison to a baseline that at least respects national and European regulations.

Avoidance of duplicates:

In order to avoid any double counting of energy savings, **each measure's beneficiary will have to sign a document** (standard document) certifying the measure's implementation and giving the approval for these energy savings to be accounted for by one obligated party. When several obligated parties are involved in the realization of a same energy efficiency measure, they will agree on a distribution key for these savings, detailed in the document to be signed by the beneficiary.

8.2.8 Verification & Monitoring

Reporting:

On March 31st of each year, the obligated parties will have to report on the energy savings achieved during the preceding year. Each obligated party will draw up an annual account of

the savings made in each completed year. For each measure or group of measure, the annual report will contain information:

- the sector
- the type of energy
- the energy efficiency measure itself
- the type of action / the action performed by third parties
- the complete address of the place where the measure was implemented/ of the beneficiary
- the beneficiary identity
- the energy saving delivered and the measure lifetime
- the date of order and billing of the measure

The notification will also include an estimate of the global costs they incurred over the year within the frame of their obligation (i.e.: incentives and administration costs). Standard notification forms will be published on the website of the Ministry of the Economy, including in electronic format, to ease the reporting process. The Ministry will then have 30 days to send the Regulator the supporting documentation of the energy savings achieved by the obligated parties and its opinion on the actual accomplishment of these savings.

Verification:

Supporting documentation regarding the savings declared will have to be **retained for 10 years** by the obligated parties and produced in the event of a control/verification, including:

- the complete address of the place where the measure was implemented/ of the beneficiary;
- the beneficiary identity;
- the evidence that the action took place before the implementation of the measure that led to the energy savings;
- the contractual chain from the obligated party to the beneficiary;
- the volume of energy savings and a justification of its calculation;
- postponement of a surplus of energy saving;
- the date of order and billing of the measure;

- the costs incurred by the obligated party to acquire the energy savings, excluding administrative costs;
- the global costs incurred by the obligated party within the frame of their obligation.

For specific measures, obligated parties must retain documentation on the technical elements of the measure implemented, the hypothesis and parameters that were used for the calculations (including references and sources). On request, obligated parties will have to provide the Ministry within a month with any information it may need to follow-up the implementation of the EEO scheme.

Monitoring:

There will be no monitoring of the progress of obligated parties towards their annual target during the year. The Ministry has the possibility to hold a register of the energy efficiency measures and the energy savings notified by obligated parties, for statistical and evaluation purposes.

The Ministry will establish annually a report on the energy savings realized by obligated parties. It will make public the non-financial part of this report and keep confidential sensitive data.

8.2.9 Control and Compliance

Penalty:

A fine is incurred by obligated parties who have not achieved their annual mandatory savings at the end of each completed year.

The fine will not exceed **2€/MWh**. This fine is not a payment in discharge of the obligation. Obligated parties failing to reach their annual target will have to catch up the next year...

Example: Company A missed its obligation by 5TWh in year N. It has to pay up to 10 million euros of penalty and must achieve an extra 5TWh obligation in year N+1.

The fine is ordered by the regulator.

Control

A random annual inspection of a representative sample of the energy efficiency measures will be carried out by an independent consultancy at the request of the Ministry of the

Economy. This control is meant to check that obligated parties have properly recorded the energy saving measures they implemented. The verification is done through the documentation retained and targets the obligated parties that did trigger the measures, even if they transferred the savings to another obligated party afterwards.

In the event of an inspection, the obligated parties will be required to place all supporting documents, including the one demonstrating their leading and incentive role, at the disposition of the independent consultancy employed for that purpose. If an obligated party gives its market share to another one, all the supporting documents mentioned above will have to be given too.

When reported energy saving measures are controlled and do not comply with the Règlement Grand Ducal, they will be suppressed from the volume declared by the obligated party. If this suppression leads to a non-achievement of the obligation, the obligated party will receive a penalty equal to its default.

8.2.10 Administrator - Institutional set up

The obligation scheme will be defined in Luxembourg's law as a service of general economic interest, which the obligated parties will be mandated to provide. Such an arrangement will make it possible to finance the obligation scheme at least partly through the national budget.

The Ministry of Economy is in charge of the implementation of the scheme. Administrative sanctions will be pronounced by the energy regulator. Finally, My Energy will intervene as an expert on energy saving matters to establish standard action descriptions and evaluate specific actions validity.

8.2.11 Flexibility

Fungibility:

Obligated parties are not limited to their own sphere of activity: they may undertake measures in all sectors (including transport for standard measures) and involving all types of energy, such as oil or heating oil. This flexibility will allow the obligated parties to achieve energy savings with a favorable cost-benefit ratio.

Trading/transfer of the obligation:

In view of the limited energy market in Luxembourg, no market for energy saving certificates such as those existing in other Member States will be established. Then, there will be no eligible parties to the scheme.

In addition, no possible transfer of an obligated party's obligation towards a collective structure is foreseen. However, exchanges or bilateral transfers of achieved energy savings are legally foreseen.

Executing parties:

Luxembourg's EEO allows obligated parties to count energy savings achieved by third parties. These executing parties may, for instance, be fitters, electricians, energy consultants, etc. If the obligated parties decide to resort to third parties to perform measures, arrangements should be made to ensure that the obligated parties has contributed to achieving their energy savings. Therefore, a contractual agreement between the obligated party and the third party must have been signed. The obligated parties will be free to choose executing parties either through a tender process or through negotiations and bilateral contracts.

Over and underachievement of annual targets:

At the end of a given year, obligated parties may present a deficit less than 40% (20% from January 2018) of their annual savings target. This deficit will have to be eliminated within the four following years. Obligated parties overachieving their saving target during a given year will be able to record these savings for one or several of the three following and the four previous years under certain conditions. Indeed, the later the measure is implemented, the lesser cumulative energy savings can be recorded.

In order to take into account the gap between the actual year when the measure is implemented and the year it is reported for, the following formula was elaborated:

$$VEER = VEE \cdot \frac{(2021 - n)}{(2021 - nR)}$$

Where:

VEER is the reported energy savings

VEE the initial energy savings

n the year when the measure was implemented

nR the year when the savings are reported

(Source: article 9 paragraph 3 of the project of Règlement Grand-Ducal)

- ⇒ Example: If in 2018 an obligated party overachieves its saving obligation by 20 MWh and decides to use it to achieve its 2016 obligation, it will only be able to record 12 MWh

8.3 Social equity

8.3.1 Contributors

Luxembourg's EEO scheme implementation will rely on several contributors:

- Obligated parties, who promote energy savings and provide incentives;
- Beneficiaries such as households and enterprises, who support a part of investment costs;
- The State, who also support a part of investment costs, through financial support to energy efficiency measures (tax credit, eco-loan...);
- Local authorities who can provide advising, networking and/or financial support for energy refurbishment;
- Customers who finance partly the scheme through their energy bills.

8.3.2 Beneficiaries

The EEO scheme will potentially benefit energy consumers of the residential, tertiary and industrial sector (and to a lesser extent, consumers of the transport sector).

8.3.3 Impact on energy prices or tariffs

The additional costs of the obligated parties can be passed partly to the final customers, which may lead to a certain increase in the price of electricity and natural gas. In order to avoid distortion of competition between different suppliers and different types of energy (particularly suppliers of heating fuels) Luxembourg plans to impose a tax or charge on non-obligated suppliers.

So far, it is not known how much of the EEO costs will be recovered through energy bills and through taxation.

8.4 Recommendations

Luxembourg's planned EEO is based on the Danish existing scheme and presents characteristics that are common to most existing EEOs (standard and specific measures, deemed savings, declarative mode and control on a representative sample, etc.).

The definition of the **energy obligation as a service of general economic interest** allows the government to present the scheme as an innovative way to pursue energy efficiency with only co-benefits:

- Consumers are going to save energy and money
- Energy suppliers are going to diversify their business model with limited costs and concurrence distortion between obligated and non-obligated parties thanks to taxation and State financing
- Third parties are going to increase their activity

If the scheme might be well received by at least some energy suppliers, it could generate significant increase in energy prices, through **increased taxation on the State side on non-obligated energies and increased prices on the suppliers' side**. On the other hand, the scheme does not plan any particular action regarding fuel poverty and the impact of an energy price increase on low income households. **The social impacts of this policy implementation will have to be closely monitored.**

Another source of concerns lies with the energy saving accounting methods chosen for Luxembourg's EEO. Indeed, the lifetime of measures is only slightly taken into account in the scheme design:

- If a measure's lifetime goes beyond 31st December 2020, the obligated party receives the entirety of the annual savings generated by this measure to cope with its annual obligation;
- If not, it only receives a portion of these savings.

This set up does not encourage measures with the longest lifetime, such as building envelope refurbishments, though these are often the first steps to take within a comprehensive refurbishment. These measures are also the most expensive ones, requiring extra willingness from both obligated parties and beneficiaries to be implemented... And the closer we will get to 2021, the truer this will become. This might results in an unbalance use of the scheme with a very high concentration of short lifetime measures (for instance:

installation optimization, replacement of domestic/office appliances, lighting) the way it was observed at the beginning of other existing schemes.

9 Malta

9.1 Policy objectives of EEO

Malta set the its national energy efficiency targets to be reached by 2020, according to the article 7 of EED, to 264,282 toe in primary energy (equivalent to 27% of the primary energy consumption in 2020 under a BAU scenario). In details, as specified in the NEEAP, Malta decided to work out the target referring to Article 7, paragraph 2 of the directive. The cumulative energy savings amount, evaluated using the annual percentage target, is equal to 710 GWh, but Malta opted for 25% adjusted target that corresponds to 673 GWh¹⁴.

As it was established in the same NEEAP in 2014, the Maltese government decided to meet the obligations through an obligation scheme that will be illustrated in the following chapter.

9.2 Design of EEO

9.2.1 Type of measures

Malta, in order to comply with the obligations defined in the article 7 of the Directive 2012/27/EU, defined several policy measures outlined as part of their NEEAP.

The obligations will be met via an obligation scheme on the only Public Utility on the Islands, Enemalta Plc, plus a series of energy efficiency , alternative measures varying from actions in public building, the water services public corporation and a series of other actions in the private sector.

According with the obligation scheme, Enemalta Corporation has to:

¹⁴ Malta's notification on art. 7 of the EED, 2014. Please note that in the rest of the document, according both to the notification and to Malta's NEEAP, GWh are used instead of toe.

- Design a smart system for metering the electricity consumption of all the consumers connected to the national grid.
- Keep the metering system up to date.
- Use the metering system as mean to:
 - Inform, through appropriate messages and activities, consumers about the wise use of energy in the home.
 - Establish an intelligent interaction with consumers with the aim to inform them about the energy consumption patterns, and to raise awareness regarding energy efficiency.
 - Avoid, in the long term, that consumers may adopt a lecherous attitude towards energy efficiency.
 - Control fraud in electricity consumption and the related energy wastes and avoidable uses.

EneMalta Plc has also been obligated to adopt a tariff for electricity consumption designed to promote energy efficiency amongst its consumers. In the effective period of the obligation, Enemalta adopts a rising block tariff.

It also incorporates in its tariff measures such as the current 'eco-mechanism' that rewards consumption by households that is lower than a stipulated level. The tariff is designed to yield the target revenue (cost-recovery, return on capital investment, etc.) and so higher consumption is relatively penalised. This is without prejudice to the Corporation providing electricity at the most competitive rates.

In addition, Enemalta Corporation has to comply with the following further obligations:

- To use a progressive rising block tariff system aiming to disincentive the energy overuse, such as the current 'eco-mechanism' that rewards consumption by households that is lower than a stipulated level. The tariff is designed to yield the target revenue (cost-recovery, return on capital investment, etc.) and so higher consumption is relatively penalised. This is without prejudice to the Corporation providing electricity at the most competitive rates.
- To offer energy services in the form of free energy audits to domestic consumers. In that regard, the corporation will work to reorganize part of its engineering and technical division also through:
 - Trainings and local accreditation of the professional figures.

- Providing the households with specific guidelines about energy efficiency measures and practices.
- Advertisement of the service and the related appropriate information through the various channels of communication.

The Enemalta obligation is expected to deliver 111.6GWh savings, while the rest will come from other policy measures adopted in the country in order to reach the total amount of obligation of 663.5 GWh.

In addition to the EEO on Enemalta, Maltese government set “other policy measures in order to meet the 2020 energy efficiency target, such as:

- Appropriate financing schemes and fiscal incentives for households, for industry and commerce, for transport sector.
- Training and education, including energy advisory programmes.
- The government action, in the form of public service, as example of good practices to the private sector.
- The use of the budgeting process and of the interactions of the government’s entities with it to drive the public sector toward energy efficiency.
- Dialogue between the regulators and the regulated entities finalised at promoting energy efficiency.

In order to be more specific, the obligation scheme on Enemalta Corporation considers four different types of energy efficiency measures: the so called EMC-1a, EMC-1b, EMC-2, and EMC-3.

EMC-1a

- Measure description: Using the smart metering system to instruct consumers, with specific and general messages, about the rational use of energy by mean of the smart metering system.

- Overall expected savings (2016-2020): 63,810,724 kWh.

EMC-1b

- Measure description: Use the smart meter system to establish an intelligent interaction with consumers with the aim to inform them about the energy consumption patterns, and to raise awareness regarding energy efficiency (the effect of energy saving is estimated to appear from 2016)¹⁵. At August 2014 87% of the meters had been installed.
- Overall expected savings (2018-2020): 19,129,290 kWh.

EMC-2

- Measure description: The introduction of a progressive rising block tariff system.
- Overall expected savings (2014-2020): 16,492,000 GWh.

EMC-3

- Measure description: The incentive to use save energy through the Eco-reduction as a part of the new tariff system.
- Overall expected savings (2014-2020): 12,124,000 kWh.

9.2.2 Scope - sector related

The sectors related to the policy measures outlined in the paragraph 9.2.1, obligation scheme and “other policy measures” are reported also in the next paragraph.

The table shows the policy measures adopted by Malta (left column) and the related sector (right column): for example, the first policy is the EEO which addresses to Enermalta corporation.

¹⁵ EMC-1a measures are mainly informative (e.g. “keep the fridge at minimum distance from the wall”), whereas EMC-1b will consist of suggestions and figures related to the analysis of energy consumptions and trends of the end-users.

Table 14: Policy measures and related sectors of application.

Policy measure	Sector related
<i>Energy efficiency obligation</i>	<i>Residential sector</i>
Control through national budget and Public Sector leading by example	Public Services
Control through national budget and Public Sector leading by example	Public Buildings
Regulation and information activities	Government-Owned Industries
Fiscal incentives	Residential-Buildings
Fiscal incentives	Transport
Financing Schemes and fiscal incentives	Private

9.2.3 Scope - technology related

The table below shows the energy efficiency measures related to specific sectors and technologies, in order to give a comprehensive overview of all the instruments available in the country to improve its level of energy efficiency and comply with the obligation requested in the directive. Only the first line concerns EEO scheme and its related technology that is only smart meters, to be installed at expense of Enemalta: through the installation of smart meters, the government aims at promoting a rising awareness and knowledge among end-user and as such an increase in the implementation of energy efficiency projects.

Table 15: Technologies related to the energy efficiency measures for the different sectors.

Sector related	Energy Efficiency Measure	Technology related
Obligation on Enemalta Corporation	Smart meters installation, tariffs aimed at promoting energy efficiency, information among end-user on consumption trends and energy efficiency investment opportunities	Smart metering system
Public Services	Street Lighting Retrofitting	<ul style="list-style-type: none"> • LEDs • Smart lighting system including dimming capability

		<ul style="list-style-type: none"> • Lux mapping design
Public Buildings	Buildings' energy efficiency retrofitting	<ul style="list-style-type: none"> • Measure related to the building envelope (i.e. insulation, double glazing windows, etc.) • CHP systems to replace old boilers where possible • Energy-efficient lighting systems • Energy-efficient AC systems
Government-Owned Industries	Energy efficiency improvement to: <ul style="list-style-type: none"> • water transfer and distribution system • groundwater abstraction pumps 	<ul style="list-style-type: none"> • Use of variable speed drives for the pumps • Energy recovery systems
Residential-Buildings	Buildings' energy efficiency retrofitting	<ul style="list-style-type: none"> • Solar water heater • Domestic heat pumps
Transport	Vehicles fleet energy efficiency retrofitting	--
Private	Energy efficiency improvement in all the sector	<ul style="list-style-type: none"> • Cogeneration plants • Solar thermal water heaters • Industrial heat pumps

9.2.4 Obligated parties

The only obligated party is the electricity supply company Enemalta Corporation.

9.2.5 Target setting

Malta chose to calculate the cumulative energy savings to be achieved by 2020 with the method described in Article 7, paragraph 1 of the Directive 2012/27/EU: annual percentage of energy savings of 1.5% per annum from 2014 to 2020, considering also the allowed reduction of 25% on the total amount so estimated. As established by the Directive, the basis for calculating the energy savings is the average value of the annual energy sales to customers of all the distributors of the three most recent years before the 1st of January 2013. For Malta, the basis of calculations is equal to 2,081 GWh per year.

Table 16: Energy savings target calculations 2014-2020

Year	Annual percentage (%)	Cumulative percentage (%)	Annual energy savings (GWh)
2014	1.5	1.5	32
2015	1.5	3	64
2016	1.5	4.5	96
2017	1.5	6	128
2018	1.5	7.5	160
2019	1.5	9	192
2020	1.5	10.5	224
Total energy savings (GWh)		897	
Reduction of 25% (GWh)		224	
National target (GWh)		673	

Source: Malta's notification on art. 7 of the EED, 2014.

Of the overall target of 673 GWh, 112 GWh are estimated to be saved through the obligation scheme on Enemalta Corporation, while the remaining part will be covered through the other policy measures.

The expected energy savings for the period 2014-2020 are reported in Table 17.

Table 17: Expected savings in each sector related to the energy efficiency measures; 2014-2020

Sector	Expected Savings (GWh)							
	2014	2015	2016	2017	2018	2019	2020	Total
Enemalta Corporation	4.09	4.09	35.97	35.97	10.48	10.48	10.48	111.56
Public services	0.85	3.40	7.65	11.92	11.92	11.92	11.92	59.56
Public Buildings	0.80	1.71	10.20	10.56	10.65	10.65	11.78	55.63
Government Owned Industries	0.00	11.72	34.20	34.20	34.20	34.20	34.20	182.73
Residential-Buildings	0.37	1.00	1.61	2.12	2.61	3.00	3.41	14.21
Transport	1.79	8.87	19.39	30.31	41.63	53.36	65.49	220.84
Private	0.00	1.13	10.10	19.00	27.64	36.29	36.38	130.54

Source: Malta's notification on art. 7 of the EED, 2014.

9.2.6 Calculation method savings

For each of the sectors related to the energy efficiency policies, expected savings and methodology of calculations are outlined as follows.

Regarding the EEO scheme on Enemalta Corporation, the different types of energy efficiency measures have each their relative calculation methodology:

- **EMC-1a**: it is assumed that the smart metering will allow a household electricity saving equal to 5% for two years and a reduction of the non-technical electricity losses of 20% (it has been estimated that the non-technical losses are due to frauds). The forecasts base on Enemalta audited accounts. The technical losses are estimated from an Enemalta study validated by Electricité de France.
- **EMC-1b**: it is assumed that the use of the smart metering system will lead to an energy saving, of approximately 20% of the initial value, in the period following the starting phase (the energy saving due to this policy measure is assumed to be evident from 2018).

- **EMC-2 and EMC-3**: The evaluation of the energy savings has been done on the basis of the electricity consumption patterns obtained as a result of an economic study carried out by external consultants (E Cubed Consultants Ltd.).

As stated before, Maltese government set other energy efficiency policy measures complementary to the obligation scheme on Enemalta Corporation, which have as well different types of energy savings calculation.

For example, the calculation methodology for the policy measure on the public services sector concerning the substitution of the street lights with LEDs has been estimated considering as basis for calculations the energy demand for lighting delivered by Enemalta in 2013 and the technical data about the LEDs consumption and lighting practices provided by Transport Malta.

The policy measure on the public buildings sector (nine different measures in different context and types of buildings) considers different methodology calculations. In the case of efficiency improvements in public schools, for example, once the measures have been realised the energy saving is evaluated to be equal to a specific number thanks to previous energy audit made in that specific building. Concerning the installation of a cogenerator in Gozo hospital, it will provide a specific amount of savings as stated by an external consultancy. Energy savings in government owned industries are calculated by engineering design estimates by a group of experts.

For actions in residential buildings, the calculation methodologies depends on the type of measure undertaken. For transport, the energy savings have been forecasted on the basis of the difference between the old vehicles fuel consumption factors, evaluated through the methodology described in the EMEP/EEA air pollutant emission inventory guidebook.

Different kind of calculation methodologies are provided for different actions in the private sectors.

9.2.7 Additionality

Neither the notification on art. 7 of the EED, nor the NEEAP indicates details on additionality.

9.2.8 Verification & Monitoring

The Verification and monitoring protocols for the energy efficiency obligation scheme are reported in the table below. This table shows which monitoring and evaluation processes are set for the different measures foreseen under the EEO scheme for Enemalta. Annex C to the notification of art. 7 of the EED reports the details for the other policy measures.

Table 18: Monitoring and Verification protocols for the energy efficiency obligation scheme

Sector related	Individual measure Ref. Nr.	Monitoring and Verification Protocols	Audit
Obligation on Enemalta Corporation	EMC-1a	The Ministry for Energy and the Conservation of Water will organise a team responsible to bring together existing energy studies and statistics, to study the trends and the changes on customers' behaviour of the energy efficiency measures proposed as well as to monitor and quantify the outcomes, positive and not, achieved. The team will be compose of representative of relevant authorities and entities, under the leadership of the National Statistics Office.	Enemalta Corporation's accounts are subject to annual audits. The corporation is also subject to the National Audit Office (NAO) supported by the ministry's team. The regulator is the Malta Resource Authority.
	EMC-1b	as for EMA-1a	as for EMA-1a
	EMC-2	The reference studies will be annually updated together with the most recent data once it is available.	as for EMA-1a
	EMC-3	as for EMA-2	as for EMA-1a

9.2.9 Control and Compliance

Enemalta Corporation's accounts are audited annually. The Corporation is also subject to the National Audit Office (NAO). The Regulator is the Malta Resources Authority. The team referred to under "Monitoring & Verification Protocols" will provide technical support to the NAO or other as required. For the other policy measures NAO will be in charge of the controls, in cooperation with Water and service corporation (WSC) for the measures based on engineering estimates and aimed at government owned industries.

9.2.10 Administrator - Institutional set up

The Ministry for Energy and the Conservation of Water is responsible for setting up a team of representatives members of the relevant authorities, with the National Statistics Office as leader, responsible for monitoring and verifying the measures of the obligation scheme on Enemalta, those in the public building sector (except the PB-8 and PB-9 for which the Malta Resources Authority is responsible to monitor and verify), those in the residential building sector, as well as in the private sector (except the measures PS-1, PS-2 and PS-3, same as PB-8). In the public sector the responsible authority for verification is the Ministry for Energy and Conservation of Water, while only for the lighting efficiency improvement throughout the country, Transport Malta Company is assigned with verification responsibilities as well. The latter company is responsible for the measures undertaken in the Transport sector too. In the government-owned industries sector Water and service corporation (WSC) is responsible to collect the data to report to the Ministry.

9.2.11 Flexibility

The Maltese NEEAP does not include particular forms of flexibility regarding the EEO scheme. Enemalta activity of installing the smart meters and providing services to the end-users through the meters could of course be implemented in cooperation with private or public partners.

9.3 Social equity

The EEO upon EneMalta PLC does not specifically include policies to counter fuel poverty as consumers in the Maltese society having financial difficulties are already given specific subsidies on their electricity and water bill. It is important to note that this segment of households will also be supplied with 'smart meters' and hence will be part of the EEO.

9.3.1 Contributors

The costs for the installation of the meters are covered by Enemalta own resources and public funds.

9.3.2 Beneficiaries

The beneficiaries under the EEO scheme are: households and business users.

9.3.3 Impact on energy prices or tariffs

The meters are installed by Enemalta free of charge to the end-users and there is no coverage of the installation costs through tariff's components, thus there is no impact on the energy prices. On the other hand, the introduction of the progressive tariff will have consequences on the prices that should stimulate the end-users to implement energy efficiency actions.

9.4 Recommendations

Considering the particular case of Malta, its policies have characteristics that make them difficult to compare with other member states, both in terms of design and of complexity. A good part of the targets depend on the role and activities of Enemalta, so that it is important to monitor its achievements over the years and in case introduce ways to stimulate its attention and efforts towards energy efficiency.

In particular some care should be placed on the monitoring of EMC-1b, EMC-2 and EMC-3 measures. The first one since there are not many experiences of this innovative use of smart meters in order to involve end-users, raise their awareness, and stimulate them in implementing energy efficiency measures. The other ones because the introduction of the progressive tariff can also have consequences not in line with the promotion of energy efficiency (it can stimulate the adoption of heat pumps, induction cooking devices, etc., but provided end-users have enough financial resources or could access to funds or dedicated low cost loans).

9.4.1 Areas for improvement

It could be useful to provide for alternatives in case the EEO scheme will not be capable of achieving the expected targets, for example by linking the obligation for Enemalta to implement energy efficiency measures among the end-users based on the readings from the smart meters, for example by using money fed by the energy tariffs or by providing low cost loans. Many EEO schemes described in the other country reports can be used as a starting point.

10 Ireland^{16 17}

Ireland has chosen to effect the provisions of Article 7(9) of the Energy Efficiency Directive (Directive 2012/27/EU), through opting to combine alternative policy measures and an energy efficiency obligation scheme (EEOS) to meet the national target. Obligated parties under the EEOS are energy suppliers¹⁸ that have market sales in Ireland of greater than 600 GWh final sales in any relevant year, regardless of the sector they supply.

Obligated parties' targets are allocated according to their proportion of energy market sales volume in Ireland. The target allocated to obligated parties is 550 GWh PPE¹⁹ annual.

Obligated parties can choose to achieve energy savings independently or through partnerships with service providers in the market. The scheme permits the exchange (via the market or bilateral) of validated savings between obligated parties. Obligated parties can buyout up to a maximum of 30% of their total cumulative target, whether or not they have achieved their minimum cumulative target. For any portion of the minimum annual target not achieved, exchanged or bought out, a penalty will be imposed. The price of buyout and penalty will be set and published by the Ministry²⁰ and reviewed as appropriate.

Ireland has chosen for alternative measures combined with an EEO, since the national target for EED for Ireland (1,102GWh per annum PEE) is close to three times the size of the energy saving target set for energy suppliers in 2013. Combined with a challenging economic climate, the Irish Government believes that the scale of ambition would impose too great a challenge and cost burden on the energy supply industry.

¹⁶ Based on Report on the Implementation of Article 7(9) of the Energy Efficiency Directive in Ireland - Alternative Approach to the Energy Savings Obligation – 5 December 2013 - Department of Communications, Energy & Natural Resources

¹⁷ Based on Energy Efficiency Obligation Scheme-Ireland Guidance document, 22th May 2014, SEAI

¹⁸ An energy distributor, distribution system operator or retail energy sales company

¹⁹ PEE: Primary Energy Equivalent. Electricity proportion 15%; Primary energy factor 2,5 (Report on the Implementation of Article 7(9) of the Energy Efficiency Directive in Ireland, Alternative Approach to the Energy Savings Obligation and Technical Annex)

²⁰ Department of Communications, Energy & Natural Resources

To this end, Ireland has already put in place a voluntary programme of energy savings by energy suppliers for the period 2011-2013. Ireland decided to migrate this to an obligation scheme. This decision has been made with regard to clarity, simplicity, transparency and market development. Ireland hopes that the provisions made for this obligation scheme will stimulate an active and cost-effective market for energy savings. The responsibility for scheme delivery will be delegated to the SEAI²¹, although the Ministry will remain actively involved in strategic decisions and will continue to chair a quarterly governance group meeting with the energy suppliers.

10.1 Policy objectives of EEO

The anticipated savings from the programme are 550 GWh (PEE)¹⁹ per annum within the period 2014-2020. This is approximately half of the net annual savings to be achieved. The target allocated to obligated parties is split to 75% for non-residential sectors, 20% residential sectors and 5% residential sectors with fuel poverty. The minimum achievement for the period 2014-2016 is: 2014: 60%, 2015: 75% cumulative and 2016: 90% cumulative. From 2017 onwards, the minimum cumulative achievement will be 95% cumulative.

Ireland intends to operate the EEO scheme in three periods up to 2020. The first spans 2014 - 2016, the second 2017-2019 and the third 2020. The three year cycle has worked well to date (from 2011 to 2013) in that it allows energy suppliers and providers²², of energy saving credits to adequately plan their activities. Ireland will actively keep under review the minimum entry threshold after which the obligation applies.

The EEO's objectives focus on energy savings but a social aspect is included via the target of which 5% has to be realised in households in fuel poverty.

²¹ Sustainable Energy Authority of Ireland

²² Natural or legal person who delivers energy services or other energy efficiency improvement measures in a final customer's facility or premises

10.2 Design of EEO

10.2.1 Type of measures

The EEO is based on a system of **Energy Credits** for realised Primary Energy Savings. These credits relate to individual measures. Ireland introduced a buyout price and a penalty price to provide market certainty and create opportunities for the emergence of trading of energy credits.

In order to fulfil its obligations, an obligated party may:

- deliver its target savings through energy efficiency improvement measures;
- agree with counterparties for delivery of energy efficiency improvement measures;
- exchange credits with another obligated party;
- buyout a portion of its target;
- if an obligated party fails to achieve its overall or sub-sectoral targets, and fails to buyout or exchange, a penalty will be imposed.

The system is **similar to a White Certificate scheme** but is not yet described in more detail in the reports that Ireland submitted on the Implementation of Article 7(9). Credits can be exchanged between market parties 'On the counter' but there is no open market for credits at this moment.

In the **residential sector** projects are stimulated mainly by **grants**. There are grants for home insulation and heating upgrades. In the future, the government intends to stimulate projects in the residential sector by financing mechanisms rather similar to those used for the non-residential sector (see below).

In the **non-residential sector**, projects are stimulated via the **Energy Efficiency National Fund**. The Investment Advisor for this fund is SDCL²³ and is appointed in March 2014 following a competitive process conducted by the Department of Communications, Energy and Natural Resources (DCENR), SEAI and the NewEra²⁴ unit of the NTMA²⁵. The fund (Ireland Energy Efficiency Investments Plc) is launched in May 2014 and is targeted to €70 million including up to €35 million from the Irish Government. The Fund will invest in projects that reduce energy consumption, recover useful energy from waste streams and distributed renewable energy generation. These types of projects typically include: public and private building retrofit; industrial energy efficiency; combined heat and power; biomass renewable heat projects; and, urban infrastructure, including street lighting and district heating networks. The Fund through SDCL will work with energy services companies (ESCOs), contractors, equipment suppliers and/or the client organisations to provide a fully funded solution that delivers energy savings to the client organisation, typically through a services contract, resulting in optimal performance and best value for money for the client organisation. The SEAI is stimulating **energy performance contracting** where funding is lent to an Energy Services Company (“ESCO”) by prioritising and promoting contracts on how EPC²⁶ is set up in the public sector. Via a working group 22 exemplary projects are selected and supported in the EPC²⁶ process.

In general, the government wants to shift to third party financing, community banks, other means of financing (e.g. employers →employees). SEAI continues the conversation about this in 2015.

²³ SDCL, Energy Efficiency Investments, <http://www.sdcl-ib.com/energy-efficiency-investments/>

²⁴ NewEra involves the provision of financial and commercial advisory services to relevant Ministers in respect of commercial State entities in amongst others electricity, gas and coal

²⁵ NTMA: National Treasury Management Agency

²⁶ EPC: Energy Performance Contracting

10.2.2 Scope - sector related

Measures can be either individual residential energy efficient retrofit measures/technologies or **non-residential projects**.

Residential measures are realized mainly by grants. The Irish government has the intention to do this by financing but this has to be worked out. Grants are awarded to a limited number of measures: wall insulation, roof insulation, heating controls and solar energy. There is a measure table with per house or apartment deemed savings or Energy Credits. It concerns energy efficient retrofit measures/technologies (insulation, boilers, room heaters, lighting, other...). This table is open to new measures (via an application form and review by SEAI). The **Better Energy Homes scheme** provides grants to homeowners who invest in energy efficiency improvements in one or more of the following areas: Roof Insulation, Wall Insulation, Installation of a High Efficiency (> 90%) Gas or Oil fired Boiler, Heating Control Upgrades and Solar panels. The **Warmer Homes Scheme (WHS)** aims to improve the energy efficiency and comfort conditions of homes occupied by vulnerable households in receipt of the National Fuel Allowance Scheme through the installation of draught proofing, attic insulation, lagging jackets, low energy light bulbs and cavity wall insulation where appropriate.²⁷

For the **non-residential sector** there is no table with a set of measures and deemed savings. Non-residential projects are evaluated on a project-by-project basis. A number of calculation engines are available through the SEAI website to calculate **scaled savings**²⁸, which will be added to over time. It is the responsibility of the obligated parties to calculate the scaled savings through the use of the SEAI calculation engines and engineering estimates based on previous case studies and experience. The scaled / engineered savings are supposed to be

²⁷ http://www.seai.ie/Power_of_One/Grants_Available/

²⁸ Directive 2012/27/EU, Annex V, 1(c)

actual. **Metered savings**²⁹ will primarily correspond with non-residential new and innovative initiatives, where it is not clear in advance what savings will result from their installation.

10.2.3 Scope - technology related

Residential: energy efficient retrofit measures/technologies (insulation, boilers, room heaters, lighting, other...)

Non-residential: broad scope; project-by-project basis.

Prioritising happens via the measures grants are given for. For non-residential there is no explicit prioritizing. There is technical and administrative assistance of the SEAI.

10.2.4 Obligated parties

Obligated parties under the EEO are energy distributors and retail energy sales companies that have market sales in Ireland of greater than 600 GWh final sales in any relevant year, regardless of the sector they supply. The number of obligated energy suppliers is estimated at 16. The calculation is based on last complete year's energy sales data available. E.g. for setting 2015 target this is 2013 base data.

There are also some large solid energy suppliers (coal, peat) just under and above the threshold, which may change within the next years. There are less solid fuel suppliers. For heating oil the obligation lies on the importer of oil since oil suppliers are more in number but smaller in size.

10.2.5 Target setting

Ireland has calculated that the average annual final target for the purposes of Article 7 compliance equates to 1,102GWh PEE. The 7 year (2014-2020) cumulative target amounts to

²⁹ Directive 2012/27/EU, Annex V, 1(b)

30,844 GWH (PEE). **The anticipated savings from the EEOS are 550 GWh (PEE) per annum in the period 2014-2020, equal to 50% of the annual target.**

The target allocated to obligated parties is split to 75% for non-residential sectors, 20% residential sectors and 5% residential sectors with fuel poverty. The minimum achievement for the period 2014-2016 is: 2014: 60%, 2015: 75% cumulative and 2016: 90% cumulative. From 2017 onwards, the minimum cumulative achievement will be 95% cumulative.

10.2.6 Calculation method savings

Residential: based on **simulated improvements** within an average dwelling.

- The average dwelling was selected by assessing the population of the Energy Performance Certificates (Building Energy Ratings (BER)) within the SEAI database.
- The domestic energy efficient retrofit measures/technologies are inputted into the BER programme (simulated median house and apartment BERs) and the Primary Energy savings (kWh/m²/year) are calculated. The Primary Energy savings are multiplied by 110m² and 70m² which are the average areas for houses and apartment respectively which gives an Energy Credit in kWh/year for each measure/technology.

Non-residential: project-by-project basis.

In these instances the SEAI use a **scaled savings** model. Technology assessment **tools** to aid in savings estimates are provided on the SEAI website: http://www.seai.ie/Your_Business/Resources/Technology_Assessment_Tools/

Tools are provided for:

- Energy Savings Calculator for Boiler Replacement Projects
- Electric Motors and Variable Speed Drives Evaluation Tool
- Tubular Fluorescent Lighting and Controls Evaluation Tool.
- Pump Energy Efficiency Calculation Tool.
- Pumps Best Practice Tool.
- Compressed Air Best Practice Tool.
- Motors Best Practice Tool.

- Register of Opportunities.

Metered savings will primarily correspond with **non-residential new and innovative initiatives**, where it is not clear in advance what savings will result from their installation.

10.2.7 Additionality

Ireland has worked out an **approach for materiality** and believes that this approach also addresses the issue of additionality. The energy supplier must provide either funding or services (pre-audits, project manager, MRV). This demonstrates materiality (i.e. that the measure is implemented in reality). A key feature of the materiality system under the existing voluntary programme (2011-2013), is that energy suppliers must have in place an agreement with a third party prior to any energy savings being realised. Ireland believes that this demonstrates causality, the manifestation of which may be **services in kind or monetary contributions** - both of which are features of the existing programme.

The government negotiates with a number of parties who are interested in creating a **trading platform** for energy savings, which if successful, would, in their opinion, represent a strong indicator of materiality.

There are different layers of evidence for additionality. In the voluntary scheme (2011-2013) it appears in many cases that if the **supplier does not take the role of initiating the project**, the **project was not going to happen** anyway and this demonstrates that the project is additional.

In the grant scheme for **households**, results of **earlier research** show that measures are generally **not implemented without the grant**. In the planned scheme some related research will also be conducted to survey the degree of additionality.

For the **not grant aided projects**, a **robust audit system** is put in place by SEAI (see also section **Error! Reference source not found.**), with checks for **quality/additionality**.

10.2.8 Verification & Monitoring

The **responsibility for compliance with the article 7 of the EED** rests with the **energy supplier** responsible for realising the necessary energy savings credits, **backed up by appropriate independent verification and audit by the SEAI**. In the first instance, energy suppliers will be required to develop and implement a **quality control process** that will

ensure that any energy savings claimed against their target are reliable, verifiable and undertaken to an appropriate standard.

SEAI

The **SEAI is responsible for independent verification and audit**. Energy savings that are being rejected following an SEAI audit, will be discounted from an energy suppliers' target, which potentially could lead to the imposition of a financial penalty. As a result, it is in the energy suppliers' own interest to ensure that submitted energy savings are compliant for the purposes of the EED.

The **SEAI will audit** a statistically significant sample of credits, **ranging between 5% and 10% of all measures** submitted by obligated parties. The measures audited must approximate **20% of the obligated party's savings** and must include a **representative sample of project types, size, sub-sector and location, as well as considering any risk factors**. SEAI will audit the quality of works for all projects and the savings achieved for those involving non-deemed measures. For the purposes of administration, all projects submitted by sector, by an obligated party, in any one day, will be treated as a **batch** and will be audited as such.

If there is a **failure rate of greater than 20% across a batch** of projects, as audited by SEAI, it will be regarded as an **endemic failure** and **all credits** associated with that batch of projects will be **withdrawn** until the issues are rectified.

An endemic failure of this nature may result in a **request for the removal of the overseeing auditor** and may also result in **all credits associated with that obligated party being examined and/or suspended pending rectification**.

Any batch determined to have an endemic failure will require a clearly outlined rectification process and remediation plan. All such batches will need to be resubmitted to SEAI for re-audit and re-approval.

Responsibility for any initiatives attracting credits will remain with the **initial obligated party**, even if subsequently exchanged. Should quality issues later arise, the following steps must be followed:

1. A remediation plan is to be submitted by the responsible obligated party to be approved by SEAI;
2. The responsible obligated party will be afforded the opportunity to address any deficit;

3. Energy credits equal to those under investigation will be withdrawn from the originating obligated party if the matter is not satisfactorily dealt with;

4. If a deficit remains a penalty will apply as appropriate.

Each obligated party will measure and verify the energy savings of projects using an internationally recognised measurement and verification protocol, as agreed with SEAI, and will report them to SEAI in the manner and at a frequency, as stipulated by SEAI. The reports will include, but are not limited to, the number and description of each energy saving action and energy efficiency improvement measure offered to, and adopted by, final customers including appropriate customer data.

For certain larger/complex projects, the obligated party will need to **agree in advance** with SEAI which method is to be utilized.

Obligated parties

Obligated parties must have a robust Quality Assurance (Q/A) scheme. Obligated parties are required to **audit 20% of works done** as part of a Q/A regime. The works audited must approximate **20% of the obligated party's savings** and must include a **representative sample of project types, size, sub-sector and location, as well as considering any risk factors**. All audits are to be conducted by an auditor or competent person who is independent of the works done, for example, if Company A is commissioned to carry out the works, Company A should not audit the works. However, the energy supplier themselves or another independently commissioned Company B may audit the works of Company A. Any **endemic failure (>20%) or major issue** discovered by the obligated party Q/A regimes **should be reported to SEAI to agree on a remediation plan** and any other actions that need to be taken. All issues discovered by obligated party audits should be addressed and rectified.

Eligible measures

For the **residential sector** the measures are described in a **measure table** (see example in Annex 2 of the Report on the Implementation of Article 7(9) of the Energy Efficiency Directive in Ireland). These are energy efficient retrofit measures/technologies: insulation of roofs, walls, floors, windows and doors; high efficiency boilers (gas, oil fired), heating controls upgrade; biomass boilers; room heaters (solid fuel, biomass); solar water heating installation; boiler services; lighting, other...

For **non-residential** projects the scope is broad and eligibility is evaluated on **project-by-project basis**.

Actions that guarantee correct implementation of EE measures

Over the past two years Ireland has worked with the Industry and the National Standards Agency to develop a **code of practice for retrofit**. Standard Recommendation S.R. 54³⁰ is published in 2014 and will also be associated with future building regulations.

The code is the standard against which retrofit activities in the residential sector will be assessed. Currently, **energy contractors active on a grant-assisted programme are required to register with the SEAI and sign a code of practice**, in addition to maintaining appropriate insurance and being tax compliant and, where relevant, have appropriate qualifications.

The National Standards Authority of Ireland (NSAI) is responsible for managing Agrément certification for, inter alia, external insulation, windows, drylining, central heating systems and solar heating. Agrément certification is designed specifically for new building materials, products and processes that do not yet have a long history of use and for which published national standards do not yet exist. NSAI Agrément assesses, specifies testing, and where appropriate, issues Agrément certificates for such products. Where Agrément certification is available, contractors are required to be certified prior to undertaking any grant-assisted works. It is intended to continue this requirement.

Inevitably, a substantial amount of activity is expected in the **non-residential sector** as it may represent a least cost approach to realising energy savings amongst energy suppliers. The SEAI has developed a number of methodologies for assessing the level of energy savings from projects in commercial buildings and industry. These can be consulted on the website of SEAI: http://www.seai.ie/Your_Business/Technology/

³⁰ Standard Recommendation 54, S.R. 54:2014 Code of practice for the energy efficient retrofit of dwellings, <http://www.nsai.ie/S-R-54-2014-Code-of-Practice.aspx>

10.2.9 Control and Compliance

Ireland introduced a **buyout price** and a **penalty price** (a multiple of 1.25 of the buyout price across all sub-sectors) to provide market certainty and create opportunities for the emergence of trading of energy credits. The introduction of a buyout price is consistent with Article 20 (6) of the EED and will be set equal to what it would cost the SEAI to realise an equivalent amount of energy savings from the market.

See also 12.2.8. for types of control, frequency,:

10.2.10 Administrator - Institutional set up

Responsibility for **scheme delivery** is delegated to the **SEAI**, although the Ministry will remain actively involved in strategic decisions and will continue to chair a quarterly governance group meeting with the energy suppliers. The SEAI maintains the list of approved residential measures and associated deemed energy savings. The list currently comprises of 32 measures with more added and verified by the SEAI upon request (from energy suppliers or third parties). All new measures, and action undertaken by energy suppliers, are subject to appropriate monitoring, verification and audit. For non-residential projects, the SEAI uses a scaled savings model and provide technology assessment tools to aid in savings estimates.

Responsibility for **compliance with the EED** rests with the **energy supplier** responsible for realising the necessary energy savings credits, backed up by appropriate **independent verification and audit by the SEAI** (see also section 12.2.8.).

In many cases in **the residential sector** there is a **project manager** (e.g. for households) who **manages the whole project** (BER) and requests for the energy performance certificate³¹ for the household (this is a requirement for getting the grant). The **household only pays the net**

³¹ EPBD Directive

amount of the investment (investment cost – grant). The project manager can be either an energy supplier or a third partner.

The **oil sector appointed a counterparty** and this party can sign up with many **contractors**. The contractors sell the work to the households. The contractor organises the **energy performance contract**. There are a **number of models** across energy suppliers that consist of a **counterparty that partners contractors** to provide the **measures** on the one side and act as an **agent of the energy supplier** on the other side. This agent sometimes acts as the energy supplier to the household.

For the **non-residential sector** there are also **models with energy supplier – client company** applying for energy credits – contractors. For these projects specific forms are available in the Energy Performance Contracts Handbook³².

10.2.11 Flexibility

Obligated parties can **buyout** up to a maximum of 30% of their total cumulative target, whether or not they have achieved their minimum cumulative target. For any portion of the minimum annual target not achieved, exchanged or bought out, a **penalty** will be imposed. The price of buyout and penalty will be set and published by the Minister and reviewed as appropriate.

The Ministry is in discussions with a number of parties who are interested in creating a private **trading platform** for energy savings similar to the French model, which if successful, would, in Ireland's opinion, represent a strong indicator of materiality. It is not yet sure that this will be implemented. Any party with a perspective project and an energy supplier could trade on this platform.

³² Energy Performance Contract Handbook, SEAI, July 2014, www.seai.ie/Your_Business/...Energy...Handbook/EPC-Handbook.pdf

10.3 Social equity

10.3.1 Contributors

The contributors will be:

- Irish government via the Energy Efficiency National Fund and grants
- Investment banks
- Local communities
- Households
- Industry

10.3.2 Beneficiaries

Households, industry, SMEs³³, (public) services. Special attention is paid to households with low income: 5% of the obligation has to be realized in households with fuel poverty.

10.3.3 Impact on energy prices or tariffs

In this early stage of the EEO, it is not yet clear how costs will be divided over final consumers/parties. The expectation is that costs will be passed through to consumers via the energy price and that there will be not too much passed through since the Irish energy markets are competitive.

Grants are more expensive for energy suppliers. The government was due to stop grants but they decided to keep them because otherwise the market would be in trouble. The government looked across Europe for experiences and they found that there was no

³³ AIB (Allied Irish Banks) announces EUR100 million lending programme to allow SMEs invest in energy-saving projects from early 2014, 9th December 2013

successful scheme for residential measures other than financing (grants, cash back, tax incentive).

11 Spain

11.1 Policy objectives of EEO

Spain is fully committed to the energy efficiency targets under the Directive 2012/27/EU which demand a 20% reduction of primary energy in the European Union as a whole by 2020. The cumulative energy saving target for Spain has been set from the initial 21.305 ktoe to 15.979 ktoe within an implementation period starting from 1 January 2014 until the 31st of December 2020. This target refers to annual energy sales to final consumers of energy sales companies and energy distributors, excluding the transport sector.

11.2 Design of EEO

11.2.1 Type of measures

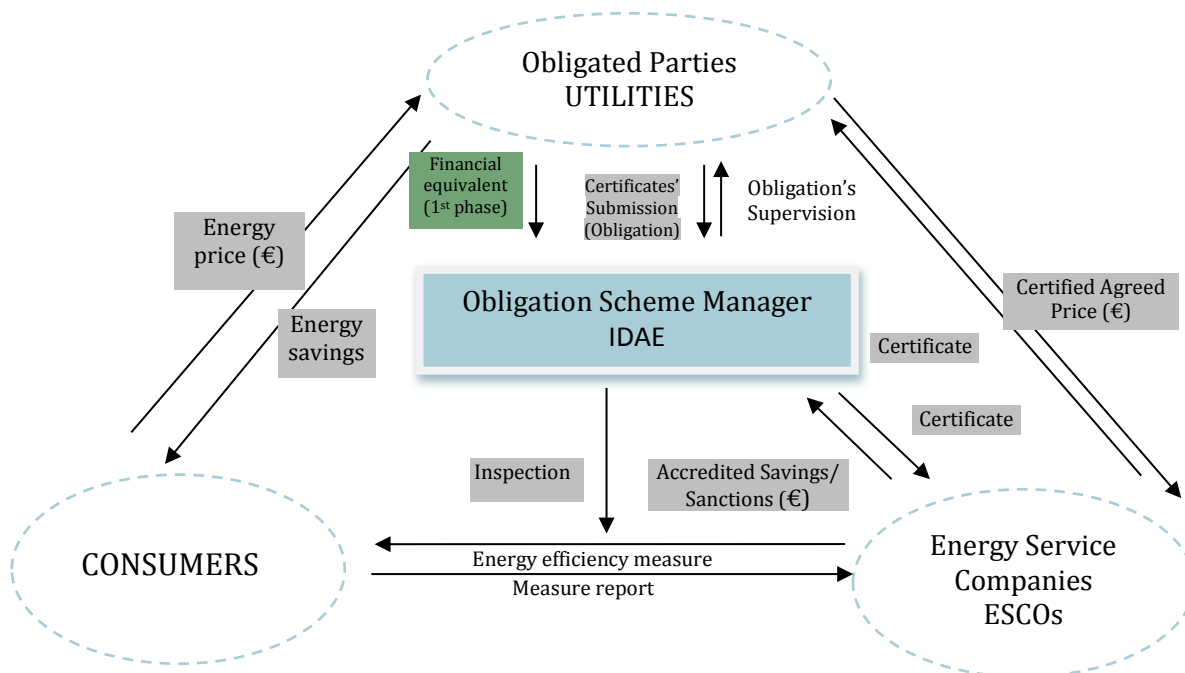
As highlighted by the representatives of the Ministry of Industry, Energy and Tourism, the Spanish EEO scheme will be implemented in two phases. During the first implementation phase, the certification mechanism will not be implemented and no energy efficiency actions will take place. Instead all the obligated parties will comply the EEO scheme by paying a financial equivalent to the energy saving they are obliged to bring about to the National Energy Efficiency Fund. The saving obligations will be established in terms of final energy.

After the first “trial” period, the obligation’s fulfilment is expected to be based on tradable energy saving certificates associated with a catalogue of measures and savings related to the energy efficiency actions. IDAE (Institute for Diversification and Saving of Energy), as the managing authority has so far taken all the necessary actions for the implementation of the EEO scheme and the alternative measures (the acronyms of which are: MOVELE, PIVE, JESSICA-FIDAE Fund, PIMA SOL, PIMA Aire, Law No 15/2012, communication campaigns and programme to promote efficient driving for new drivers) as well as the certification mechanism. However as highlighted by the representatives of the Ministry, it remains uncertain whether the certification will be finally implemented after the first couple of months, later or even not at all.

According to the national notification reports of December 2013 and June 2014, the initial planning is that the energy efficiency savings target set by the EEO scheme will be mainly implemented through the establishment of a standardized deemed energy savings scheme. This scheme will be based on a list of measures and actions, which would be the guideline

for fulfilling the savings' obligation. In this framework, if the certificates are eventually introduced, those will be negotiable by trading of emissions allowances, issued and registered so that transparency will be ensured in all cases. Annually, at the end of each period, the obligated parties should provide to the IDEA the obtained certificates, confirming the fulfilment of their obligation, or, alternatively, pay the predefined sanctions to the Energy Efficiency National Fund. That ex post repurchase price is based on the ex-ante repurchase price, keeping in mind the financial and the opportunity costs that are associated with the delay in achieving the savings.

The main components and the general operational structure of the Spanish EEO scheme, as described in the two official national notification reports, is illustrated in the diagram below.

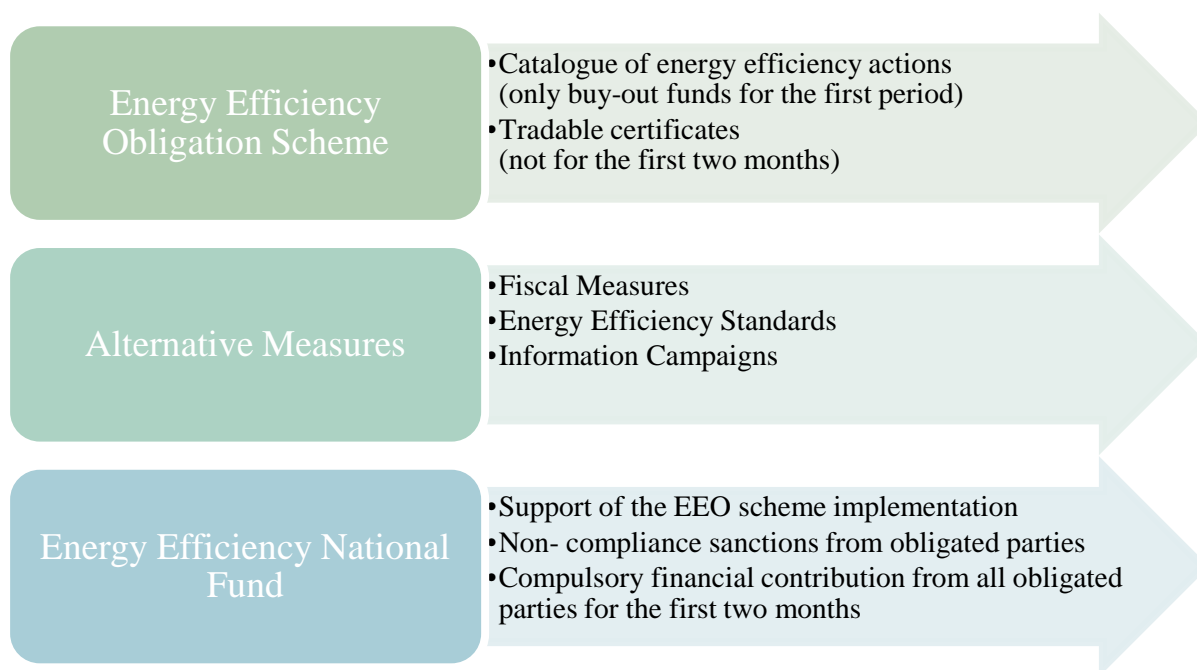


During the first and current period of the scheme's implementation, the main party involved will be the utilities, who will conform with their obligations solely by paying the financial equivalent instead of performing energy savings measures and obtaining a certificate. As depicted in the diagram above, the grey-marked areas represent the functions of the scheme, which will in principle be implemented at a later stage.

Provided that the certificate mechanism will be introduced, those will consist the main commodity facilitating the operation of the scheme. Indicatively, at the beginning of each year the obligated parties would select either to comply with their obligations by obtaining

saving certificates or to pay an equivalent amount to the Energy Efficiency National Fund, according to the ex-post repurchase price. At the beginning of each obligation settlement period, the value of the compensation will be established by law. The obligated parties that selected to conform with their obligations should, at the end of the year, provide IDAE with the energy efficiency certificates accrediting sufficient fulfilment of the defined by law obligation, otherwise they should pay an equivalent amount to the Energy Efficiency National Fund. However, this distribution raises questions about the role and aim of the Energy Efficiency National Fund. In more detail, if the actions funded by the EE Fund are not included in the EEO scheme, it is unclear which would be the funding sources for the EEO scheme itself and neither the first nor the second national report give any accurate or detailed information as far as the funding of the EEO scheme is concerned.

In addition, the implementation of the EEO scheme will be combined with a package of alternatives measures as dictated by Article 7(9)(a)–(f) of Directive 2012/27/EU. The majority of these measures are related with energy efficiency standards, information campaigns and fiscal regulations. These will be the only actions that will take place the first couple of months and the forms the main activity field of ESCOs during this period. An Energy Efficiency National Fund will be established to support the implementation of the obligation in accordance with Article 20 of Directive 2012/27/EU.



Given the fact that during the first period no energy efficiency actions will take place in the framework of the obligation, the present analysis refers to the second period of implementation as defined in the two notification reports in December 2013 and June 2014.

11.2.2 Scope - sector related

In order to achieve the savings target, large-scale actions in both the private and the public sector shall take place. In detail, EEO scheme's implementation will involve all final energy consuming sectors, including industry, transport, buildings (residential & business use, privately & publicly owned) and agriculture. The transport sector will be included in the EEO scheme implementation as highlighted in the latest Spanish report of June 2014, but savings of the transport sector are fully excluded from the target calculation. In detail, sellers of petroleum products for transport will be part of the obligated parties of the EEO scheme and measures to ensure that transport is used more efficiently will be taken. However, it is not defined in neither of the two notification reports for Spain, which those measures will be, how they will function and be financed. Moreover, it is not clear whether they will be part of the EEO scheme or of the alternative policy measures or if they will be included in both. Finally, the final energy consumption of agriculture and the fishing sector was included within the final energy consumption (excluded from EEO scheme) as dictated in the final version of guidance for Article 7 (SWB (2013) 451 final).

11.2.3 Scope - technology related

The Spanish EEO scheme will focus on electricity, gas and oil product retailers, including transport. Thermal energy and building insulation and deeper building retrofit are a top priority in the obligation's framework. In more detail, the scheme will be based on renovating equipment and processes in the industrial sector, improving efficiency of heating, electrical control and lighting in the building sector (residential or business use) and renovating the building envelope. The eligible measures to be preliminary included in the implementation of the obligation as defined in the initial report of December 2013, are:

- INDUSTRY:
 - ▲ Introduction of energy management schemes and energy audits,
 - ▲ Improvement of equipment and process technology (BAT)
- TRANSPORT:
 - ▲ Implementation of the plan for urban sustainable mobility
 - Promotion of programs for the implementation of school roads
 - Promotion of car pooling
 - Promotion of car sharing

- Promotion of the use of bicycles as urban transport mean
- ▲ Plan of transport sustainability for businesses of PYMES (PTT – PYME)
- ▲ Plan of transport sustainability for large enterprises
- ▲ Infrastructures for recharging electric vehicles,
- ▲ Efficient driving for drivers of industrial and private vehicles,
- ▲ Management of road transport fleets,
- ▲ Participation of the railway in passenger and goods transport,
- ▲ Management of transport infrastructures
- ▲ Improvement of urban mobility and transport for businesses,
- ▲ Efficient driving for driving school instructors
- ▲ Introduction of electric, natural gas and hydrogen vehicles,
- ▲ Participation of the maritime sector in goods transport,
- BUILDING AND FIXTURES AND FITTINGS:
 - ▲ Energy renovation of the thermal envelopes of existing buildings,
 - ▲ Energy renovation of windows of existing buildings
 - ▲ Energy renovation of facades and covers of existing habitable buildings
 - ▲ Improvement of the energy efficiency of the heating installations in existing buildings,
 - ▲ Improvement of the energy efficiency of (individual) boilers in existing habitable buildings
 - ▲ Improvement of the energy efficiency of air conditioning equipment
 - ▲ Improvement of the energy efficiency of the lighting installations in existing buildings,
 - ▲ Construction of new buildings and renovation of existing buildings with high energy ratings,
 - ▲ Renovations of conservation and freezing equipment
 - ▲ Improvement of the energy efficiency of commercial and industrial cooling installations,

- ▲ Improvement of the energy efficiency in the existing lift installations in buildings,
- ▲ Improvement of the energy efficiency of existing data centres,
- ▲ Improvement of the energy efficiency of household appliances
- ▲ Improvement of the energy efficiency through home automation and smart management systems,
- ▲ Improvement of the energy efficiency of district heating and cooling
- ▲ Improvement of the energy efficiency of electrical installations in existing buildings
- ▲
- PUBLIC SERVICES:
 - ▲ Renovation of existing outdoor public lighting installations,
 - ▲ Improvement of the energy efficiency of current residual water treatment, storage and processing and desalination
- AGRICULTURE:
 - ▲ Improvement of the energy efficiency in the agricultural exploitations:
 - ▲ Replacement of heat generators
 - ▲ Improvement of the energy efficiency of existing interior lighting installations in agricultural exploitations
 - ▲ Improvement of the energy efficiency of irrigation facilities
 - ▲ Improvement of the energy efficiency in the agricultural mechanism, by using a more efficient one.

It is worthy of note, that there is an extended catalogue initially planned to be implemented in the transport sector as part of the obligation scheme. However, as transport was excluded from the saving calculations, it still remains unclear whether the initial planning will change or if those measures will be finally part of the EEO scheme (funding, certificates etc.). However, the detailed catalogue with the specific measures to be implemented and counted for the energy efficiency savings is yet to be clarified, since new measures will be introduced and increase the potential saving due to new final use technologies.

11.2.4 Obligated parties

As stated in the notification report of June 2014, the obligated parties in the EEO scheme are all the sellers of electricity, gas, liquefied petroleum gases and wholesalers of petroleum products. Even though the transport sector is excluded from the calculation of savings, sellers of petroleum products for transport are considered to be obligated parties of the EEO scheme.

Furthermore, as highlighted in the first notification report of December 2013 there would be a threshold predefined by law regarding the volume of sales to final costumers in order to consider a retailer as an obligated party. However, no further details specifying the level of the threshold are provided in the first or in the second notification report (June 2014).

11.2.5 Target setting

Spain's cumulative saving target set by Article 7, over the period 2014 – 2020 (excluding the transport sector) is set to 21.305 ktoe. As highlighted in the updated national notification report, Spain decided to make use of the flexibility mechanism and reduced the final target by 20,8 % for the overall period from 1 January 2014 to 31 December 2020, according to the possibility given in the Article 7(2) & (3) of the Directive. The new optimum target is 15.979 ktoe and it refers to energy sales to final consumers of energy sales companies and energy distributors. This is equivalent to an annual additional savings of 1,5%, averaged over the most recent three-years period.

Moreover, as referred to in the latest notification report Article 7(2) (b) offers an additional possibility of reducing even more the final target up to 42.9%, but is expected not to exceed a limit reduction of 25%. However, it is unclear how and whether this flexibility mechanism will be implemented.

There is a distribution of the target mentioned in the 1st notification report among the alternative policy measures, the energy efficiency fund and the EEO scheme. Specifically, the alternative measures are expected to generate a total energy saving of 4.662 ktoe, whereas the cumulative savings of the Energy Efficiency National Fund are estimated up to 4.961 ktoe. As a result the remaining savings to be achieved through the EEO scheme is 6.356 ktoe.

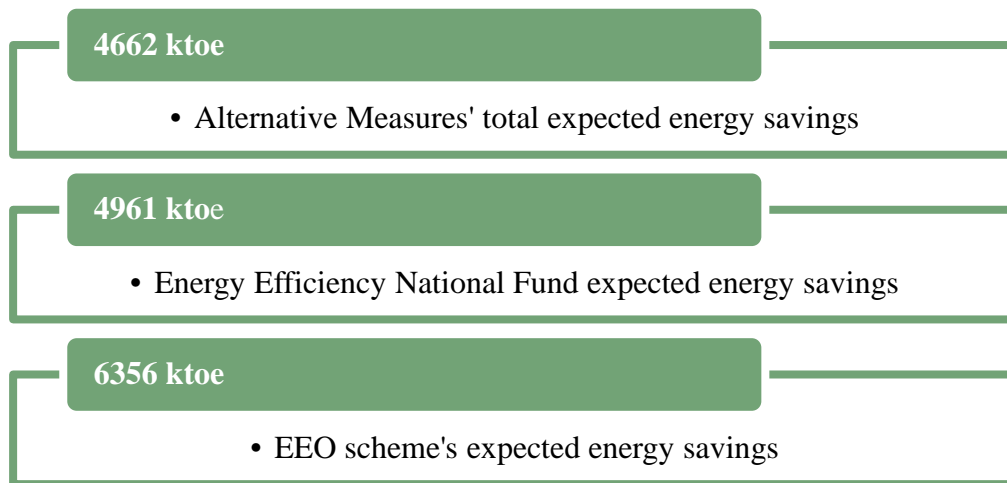


Figure 1: Distribution of the energy efficiency savings' target

11.2.6 Calculation method savings

The above mentioned cumulative target is calculated as the sum of annual figures for the seven year period, each produced by multiplying the annual average consumption of final energy in the industry and multi-purpose sectors for the years 2010, 2011 and 2012 by an incremental annual coefficient of 1.5%, i.e. 1.5% in the year 2014, 3.0% (1.5% + 1.5%) in 2015 and so on, successively, up to 10.5% in the year 2020. This is equivalent to 571 ktoe/year, considering a linear distribution over the commitment period.

The saving target will be distributed over the obligated parties also on a linear basis over the entire period of the obligation. The saving target for all obligated parties will be set annually, according to their market shares, using as baseline information for the initial distribution the sales in the financial year 2013. This information will be provided by the companies themselves. In successive annual periods, the baseline information for distribution of the targets will be the sales in year n-2. The obligations to which energy sellers operating in Spain will be subject under Article 7(1) of Directive 2012/27/EU will be calculated by applying the market share of each retailer and wholesale trader to the previous savings target. The savings obligations will be set in terms of final energy.

11.2.7 Additionality

The recognised savings to be included in the catalogue for each action will be set by reference to the results of previous energy improvements which have undergone independent checks at similar installations (Annex V, point 4(f)). In this framework, the benchmark used will be the savings defined by using bottom-up methods for the measures

included in the energy efficiency action plans implemented previously in Spain as part of the Energy Saving and Efficiency Strategy 2004–2012. Calculation of the recognised savings for each action will be set out in the catalogue, together with the lifetime or duration of the savings arising from each of those actions. In general and excluding certain actions targeting the transport sector, the lifetime of the actions is longer than the commitment period under Directive 2012/27/EU (Annex V, point 4(g))

It is important to note that the energy efficiency measures to be implemented as a result of the obligation scheme, whether by obtaining certificates or in the form of measures by the Energy Efficiency National Fund, are in addition, to the measures to be generated by the price signal resulting from fiscal measures, and so will not under any circumstances lead to double accounting (no further information are available on how to ensure additionality).

11.2.8 Verification & Monitoring

During the first implementation phase of the scheme, verification and monitoring actions will not be necessary, since compliance with the scheme will be imposed automatically through the financial payments by the obligated parties to the Energy Efficiency Fund.

In case that certificates become effective, as already mentioned, at the beginning of each year the obligated parties should select either to comply with their obligations by obtaining saving certificates or to pay an equivalent amount to the Energy Efficiency National Fund. The obligated parties conforming with their obligations would, at the end of the year, provide IDAE with the energy efficiency certificates accrediting sufficient fulfilment of the defined by law obligation, otherwise they should pay an equivalent amount to the Energy Efficiency National Fund.

The energy efficiency and savings measures entitled to have energy efficiency certificates issued for an amount equal to the energy savings must be included in the catalogue (table of measures). Once completed, the catalogue will include the estimate of the savings (ex ante) that will be accepted from the companies for implementing each of the actions included therein, as well as the full list of the supporting documentation that the companies must submit to IDAE to request the issuing of the energy efficiency certificates that may apply to them. IDAE may have support from specialist external entities to verify the proper implementation of the energy efficiency measures by energy service companies and/or obligated parties.

Accredited members of the scheme must obtain final consumers' explicit agreement to the action promoting, supporting and/or funding investment in energy saving and efficiency

measures. It will be that investment which will entitle accredited persons (as participating parties) to receive energy efficiency certificates for the resulting savings.

11.2.9 Control and Compliance

As already described, the main control and compliance instruments will be the financial penalties to the Energy Efficiency National Fund for not achieving sufficient energy savings among final consumers in order to obtain the necessary energy efficiency certificates. The penalty calculation will be based on the ex-ante repurchase price, considering the financial cost as well as the opportunity cost to the Energy Efficiency National Fund related to the delay in achieving the savings because of not having access to corresponding payment at the end of the obligation period. Moreover, additional certified savings to the ones initially undertaken will be credited for the next year. The penalty will be calculated on an annual basis and IDAE will be responsible for the supervision of whole process.

11.2.10 Administrator - Institutional set up

The Institute for Energy Saving and Verification, IDAE, is assigned as the competent authority to regulate and implement the EEO scheme. IDAE is a public corporation attached to the Ministry of Industry, energy and tourism. IDAE, as the scheme managing authority will oversee the EEO scheme implementation, ensuring that the obligated parties comply with their energy efficiency obligations through the proper implementation of energy saving actions. Moreover, IDAE will be responsible for the issuance and registration of the energy efficiency certificates. If the company requesting the energy efficiency certificates fails to implement the actions according to the criteria set out in the catalogue or provides insufficient proof that they have been implemented, those certificates will be refused (Annex V, point 4(i)).

Moreover, IDAE may be supported from specialized external entities to verify the proper implementation of the energy efficiency measures by energy service companies and/or obligated parties. No further details are thus far provided regarding the role and responsibilities of such specialists within the notification reports.

Assigning a public corporation like IDAE, which is attached to the Ministry of Industry, Energy and Tourism, with the responsibility for issuing and registering energy efficiency certificates, the supervision as well as the inspection of the scheme's implementation enhances independence from the obligated parties, and the transparency of the procedure.

Despite the fact that IDAE will be in general responsible for the administration of the EEO scheme, the responsibility for the Energy Efficiency National Fund and funding procedures

will be delegated to a group of departments of different Ministries including the Ministry of Industry, Tourism and Energy.

11.2.11 Flexibility

At first, the Spanish EEO scheme will provide only one compliance option. At a later more mature stage in the scheme's implementation, it is envisaged to function combined with the more flexible energy saving certificates. Any accredited person in the scheme, participating in the EEO scheme, may request IDAE to issue energy efficiency certificates subject to accreditation of having implemented a measure that led to achieving energy savings in terms of final consumption. As a result, the obligated parties may interact with ESCOs for obtaining the savings certificates. In fact, energy service contracts may act as a very effective market instrument in facilitating fulfilment and verification of the fulfilment of the savings target.

11.3 Social equity

11.3.1 Contributors

The main contributors in the context of the EEO scheme, that will finance the Energy Efficiency National Fund and include the general State budget, originate from the contributions of the obligated parties, as well as from structural funds in the context of EU Thematic Objective 434. The Fund may provide for the necessary amounts for renovating buildings owned by the central government as dictated by Article 5(1).

³⁴ A minimum share of each region's European Regional Development Fund (ERDF) allocation will be invested in measures supporting the shift to a low-carbon economy:
20% in more developed regions;
15% in transition regions; and
12% in less-developed regions.

11.3.2 Impact on energy prices or tariffs

In the framework of the EEO scheme implementation, energy sales companies will be assigned with specific energy obligations as dictated by the Directive 27/2012/EU and therefore they will carry the responsibility of implementing the suitable mechanisms in order to achieve the savings target. This fact gives service companies the ability to differentiate their products by incorporating additional services, available not only to the direct buyers but also to the final consumers. This model is expected to affect significantly the Spanish energy market by stimulating market competition but there is no further analysis available about the final effect on energy prices or tariffs.

In the second notification report (June 2014), it is highlighted that there would be subsidy programs, preferential funding and guarantee funds, but no more information about the beneficiaries, the distribution of the available funding mechanisms and the tax revenues nor the principles of a potential cost-recovery mechanism are yet determined.

11.4 Recommendations

Due to the fact that relatively limited information is available about the laws implementing the EEO it is not possible to provide meaningful recommendations at this point in time. However the main focus of the government should be set to clarify some critical issues in its design such as the issue of cost recovery and additionality of eligible measures.

In general there are two common cost recovery mechanisms widely implemented in EEO schemes. The costs of meeting energy saving targets could be either incorporated in the final prices by the energy providers in order to recover these costs or funded by the State through direct budgetary appropriations or by overrated prices fixed by the government. However the Spanish government should not overlook the impact on prices, especially since price increases are already taking place via existing tax-measures (fiscal schemes). Finally the Spanish scheme could benefit from the example of the cost recovery mechanism as established for the long-existing Italian scheme, whereas the cases of Denmark and Austria clearly establish provisions to meet with additionality requirements.

Finally the less flexible version of the scheme (i.e. without white certificates) as it will be implemented during its first phase ensures the proper functioning of the Fund, but on the other hand, increases the risk of non-compliance by obligated parties, who are obliged to comply solely by paying the financial equivalent to their obligations.

12 Slovenia

Slovenia has chosen to effect the provisions of Article 7(9) of the Energy Efficiency Directive (Directive 2012/27/EU), through opting to combine alternative policy measures and an energy efficiency obligation scheme (EEOS) to meet the national target. Obligated parties under the EEOS are energy suppliers of electricity, heat, gas and liquid and solid fuels to final customers. The planned EEO scheme (from 2015 onwards), is linked to a financial mechanism in place, the so – called Eco-Fund, which aims at improving energy efficiency through financing investments in energy efficiency.

12.1 Policy objectives of EEO

The calculation of the energy savings target in Slovenia is based on the annual average final energy consumption for 2010-2012, from which non-energy use and energy use in transport are excluded. The basis for calculating the obligation under Article 7 of the EED on energy efficiency is 34,874 GWh, set as a baseline excluding the non-energy and transport use for the average of 2010-2012. On top of that, the 1.5% target set implies that Slovenia must achieve 523 GWh of new savings annually for the period 2014-2020, where in cumulative figures amount to 14,647 GWh. Furthermore, Slovenia targets at 25% energy savings, through making use of the provisions of Article 7(2), namely using the reduced values during the first five years and implementing measures in energy transformation, distribution and transmission sectors.

12.2 Design of EEO

12.2.1 Type of measures

The planned EEO scheme (from 2015 onwards) (analyzed in the following sections), is linked to a financial mechanism in place, the so – called Eco-Fund (Eko sklad)³⁵, which was established by the new Energy Act (entered into force in March 2014 and currently under adoption by the Slovenian parliament). This Eco-Fund is in fact a Slovenian public environmental fund, which aims at improving energy efficiency through financing investments in energy efficiency. The funds required will be financed from the contributions from improving energy efficiency. The total funds collected annually will flow into the Eco-Fund and they will originate from charges from district heating, electricity and solid, liquid and gaseous fuels, paid by final consumers on top of the price of energy or fuel to the operator or supplier of energy or fuels, which pays the funds collected to Eco-Fund. In essence, the original fund is made up by the energy consumption fee on solid, liquid and gaseous fuels, district heating and electricity and those who benefit from the fund must pay back the financing, in the forms of energy savings they carry out.

The two measures thus (EEO and Eco-Fund) will be responsible for achieving the 1.5% target annually, or 1% in 2014 and 2015 and 1.25% from 2016-2018. The obligation will be divided in half of the 1.5% to the Eco-Fund and the other half on EEOs, while not reducing the savings target that the Eco-Fund must achieve in the initial years (therefore the target will be 0.75% per year, amounting to 262GWh per year). The total savings for the entire 2014-2020 are estimated to 1,831 GWh and the cumulative savings over the entire period to 7,336 GWh, representing the amount of cumulative annual savings referring only to those of the Eco-Fund for the respective period. There are no provisions for creation of a tradable certificates market with exchanges of certificates.

³⁵ Slovenian Environmental Public Fund, established by the Environmental Protection Act (Uradni list RS, nos 39/06 – official consolidated text, 49/06 – ZMetD, 66/06 – Constitutional Court Decision, 33/07 – ZPNačrt, 57/08 – ZFO-1A, 70/08, 108/09, 108/09 – ZPNačrt-A, 48/12, 57/12 and 92/13)

12.2.2 Scope - sector related

The EEO in Slovenia has set the obligation to suppliers of electricity, heat, gas and liquid and solid fuels to final customers (estimated 16 electricity suppliers, 19 gas suppliers and several fuel suppliers (n/a)). There are no exceptions for small scale suppliers foreseen. These market parties must achieve the targeted savings among final consumers. The final customers are households and commercial sector.

12.2.3 Scope - technology related

The technologies that are eligible for counting against the target from the EEO and also from the ECO-Fund will be determined by legislation (based on the Energy Act). The main measures are:

- Efficient energy use measures and greater use of renewables in heat generation in the public and service sectors and for industry and households
- Efficient energy use measures in buildings
- Efficiency energy use measures in transport
- Measures to increase the efficiency of district heating systems
- Energy Survey programs

Furthermore, there is a provision for exceptions to allow primary energy savings achieved in the energy transformation, distribution and transmission sectors, including efficiency district heating and cooling infrastructure, to be counted towards the amount of energy savings. The underlying principle though of the EEO and the Eco Fund is to promote high quality measures with national and international quality standards applied to equipment and installers.

12.2.4 Obligated parties

The market parties that have received the obligation for carrying out energy savings are all suppliers of electricity, heat, gas and liquid and solid fuels to final customers. As the market especially for electricity and gas is quite concentrated (with 3 – 4 main companies in the retail sector) the obligations largest share falls under the main supplier in each case. Nevertheless, more market parties are allowed to implement measures that fall under the transport or the EU ETS sector.

12.2.5 Target setting

The target is set as a 0.75% energy savings (from all carriers) annually of final energy, and the measures can function up until and including 2020. As explained above, the target is calculated based on the obligation to energy suppliers and the remaining target (0.75%) on the functioning of the Eco-Fund. For the EEOs, since the market suppliers' shares are changing and new entrants appear, the savings to be achieved by individual obligated parties will be expressed as a proportion of the energy they have sold in the past year.

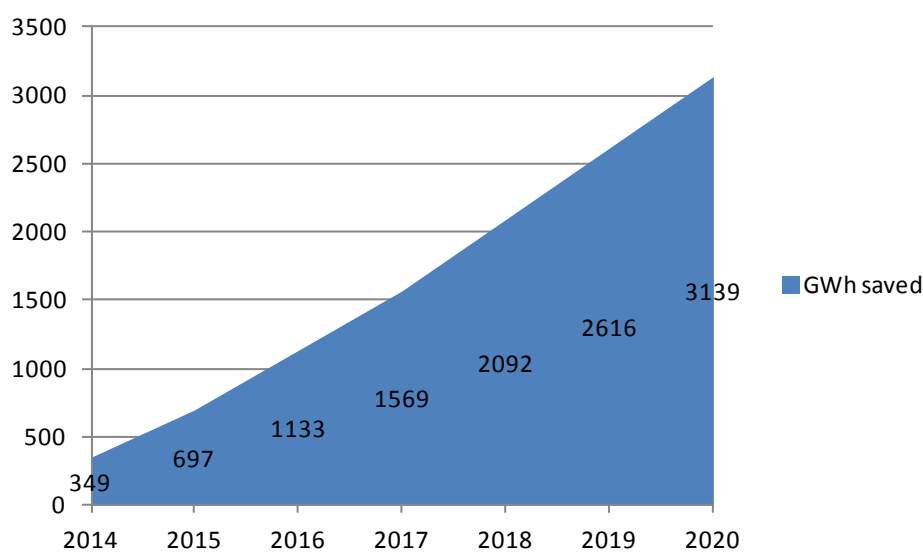


Figure 2: Energy saving obligation targets.

Source (Article 7 Notification to the European Commission)

12.2.6 Calculation method savings

The energy savings are calculated in principle based on deemed savings. The method of evaluating energy savings as a result of individual measures to improve energy efficiency is to be designated still by the responsible authority. Up to January 2015 the methodology has not been yet published for each method from the Ministry of Infrastructure, which is responsible for establishing these methodologies.

12.2.7 Additionality

Eligible measures will only include those that exceed the lower efficiency threshold defined in the implementing regulations based on Directive 2009/125/EC of the European Parliament and

of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products.

Measures that in addition to lower energy consumption also make a relatively large reduction in primary energy use will be given greater weight. These measures are primarily reducing electricity consumption, producing electricity from renewable energy sources for own use and cogeneration of heat and power. Energy savings from these measures will be counted in accordance with Annex IV to Directive 2012/27/EU. The decree will state that individual implementing measures can only be credited to one obligated party. If an implemented measure is financed by two obligated parties, methods to divide the savings between the two parties will be defined.

12.2.8 Verification & Monitoring

The verification of energy savings in the Slovenian EEO is ex-post and falls under the authority of the Slovenian Energy Agency. The Energy Agency will verify at least a statistically significant proportion and representative sample of measures to improve energy efficiency implemented by obligated parties (through direct measurements). For this purpose, no more than once a year at the Energy Agency's request obligated parties will submit aggregate statistical data on their final customers (also describing significant changes compared to the previous data set) and current data on end-use (such as load profiles, customer segmentation and geographic profile etc). In essence thus there is no intermediate period defined for the EEO scheme but savings must be declared yearly.

Slovenia is still designing the methodology for the statistical verification of savings, which will be achieved with the methods mentioned. The new methodology will determine the measures, which are written in regulation on providing energy savings. This regulation is the key legal document for achieving energy savings from the energy retailers within the mixed EEO scheme.

Slovenia will check a series of installed measures, as well as energy measurements to be more precise, as in the current methodology of energy savings calculation (based on the Directive of 2006), each method is prescribed with the standard measure (deemed savings). In this case, it is known in advance how much energy is saved with a single action or installed measure.

12.2.9 Control and Compliance

There is no specific penalty foreseen in the Slovenian scheme. In both the regulation for the achievement of energy savings and the Law EZ-1, there is nowhere defined how and if penalties will be implemented if energy retailers do not achieve energy saving targets. Under the Energy Act there are provisions for penalties in case of non achievement of savings, or of non-payment to the Eco Fund, or of non reporting to the Energy Agency. These penalties vary in range and will be weighted based on the infringement degree.

12.2.10 Administrator - Institutional set up

The administrator of the EEO scheme who is also responsible for reporting and verifying energy savings is the Slovenian Energy Agency. Obligated parties will send to the Slovenian Energy Agency a report on the achievement of targets for the previous year once a year (by 31 March). Based on the law EZ-1, the Energy Agency will issue rules defining the form and content of the report. Based on these reports, the Energy Agency will publish – by 30 April – all energy savings achieved by each obligated party in the previous year.

In Slovenia the achievement of energy savings from energy providers, which will be monitored, reported and evaluated by the framework of a national regulator for energy. The Energy Agency thus within the sector the Monitor market activity, will be required to increase human resources, because this will be completely a new task for the sector.

12.2.11 Flexibility

The main flexibility component in the EEO scheme in Slovenia is that the method of financing measures is not defined, which means that the costs of implementing the scheme will be transferred to the energy sales companies themselves, since those companies have more flexibility in how they actually implement and finance measures to increase energy efficiency. In essence, the energy suppliers face the option of a) carrying out energy savings to their final customers, and b) In place of actual energy savings, the obligated parties may fulfill their obligations by making a payment to Eco Fund in an amount equal to the product of: the savings they were required to achieve among final customers; and the specific costs of achieving the Eco Fund energy savings. The regulation on achieving energy savings offers the possibility to energy retailers under EEO to pay the Eco Fund with the same amount reflecting the non-implemented energy savings. In this process, energy retailers must consider the specific energy cost, which will be determined by the Eco Fund for the preceding year (by the 1st April of the current year). Detailed procedures for reporting and

remittance will be determined by the Eco Fund and published on its website. The energy retailers will have to inform the Eco Fund on this decision no later than the 1st October of the current year for the following year. The Eco Fund can provide in turn a) soft loans for investments from legal entities covering 90% of the investment cost (with a range of 25,000 to 2 million Euros) and 15 years repayment period, b) soft loans to households ranging from 1,500 to 20,000 Euros and 10 years repayment period, and grants (linked to EEOs) where Eco Fund and large energy distributors publish public calls for allocation of grants (Bijedic 2013). Finally, in the EEO scheme there is no trading in the form of White Certificates in a parallel market envisaged.

12.3 Social equity

12.3.1 Contributors

The Law EZ-1 and the regulation on energy savings did not specify social justice in their mandates. Nevertheless, it is necessary to add that it could be possible to include social justice parameters in the Law EZ-1 in 352, which defines energy counseling, which is intended for all people for informing themselves how to save more energy. In view of that, the action plan for Energy Efficiency for the period 2014-2020 states clearly that this advice is primarily intended for socially disadvantaged groups.

12.3.2 Beneficiaries

There is no definition yet provided in the notification on what are the socially disadvantaged groups that will probably benefit from the scheme. If that refers to fuel poverty, the ranges are around 18-20% of dwellings.

12.3.3 Impact on energy prices or tariffs

As the scheme is proposed, final customers will pay the contribution on top of the price of energy or fuel to the respective supplier (obligated party), and these funds will be transferred to the Eco-Fund.

12.4 Recommendations

12.4.1 Areas for improvement

The Slovenian EEO scheme is bundled with the Eco Fund, which will in fact provide grants to energy efficiency investments. From the current design of the scheme, there are gaps in terms of target setting, especially with the 25% exemption rule, and clearer definitions of this adjustment need to take place. As in most cases where obligation schemes are combined with financing, there is a substantial risk of policy overlapping, which could eventually create double counting. In the current notification, the methodology of calculating savings once is not strong and further efforts per measure are required. Furthermore, explanations on how the EEO will be implemented and how the measures will be introduced in the market is absent, as Slovenia has opted to leave the financing part and the market carry over the cost to the suppliers, and therefore experiences from other countries that have already started with EEOs should be extrapolated in the national design. As in most countries the methodologies for calculating energy savings need to be further elaborated alongside with additionality. In terms of market preparedness and in order to trigger energy efficiency measures from the beginning of the scheme, the penalties should be clearly defined, as they set a ceiling price to the energy efficiency (non-implementation) and they should be higher than the payment to the Eco Fund.

12.4.2 Strong characteristics

A main strong characteristic of the Slovenian scheme is that will build upon the existing Eco Fund, which has been well established. Due to the significant absence of concrete information in the notification, it is difficult to identify the main added value of the scheme.

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