



## Energy

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*COLLECTION AND ANALYSIS OF DATA ON EXISTING LATVIAN ENERGY EFFICIENCY POLICY INSTRUMENTS WITH EX-POST METHOD AND ANALYSIS AND RECOMMENDATIONS OF THE EXISTING ENERGY EFFICIENCY MONITORING AND VERIFICATION SYSTEM*



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## ANNOTATION

*“If you are aware that you are not achieving your goals, do not change your goals but your actions to achieve them.”  
(Confucius)*

The aim of the study is to perform an assessment of Latvia's energy efficiency policy measures in achieving national energy efficiency goals.

In this study we examine the energy efficiency obligation scheme (EEOS), voluntary agreements, energy management in municipalities and enterprises directly managed by the state, energy audits/energy management systems of large companies and large electricity consumers, energy efficiency funds, the energy efficiency monitoring system and the impact of these measures on the Energy Efficiency Policy Alternative Action Plan for energy end-use savings achieving the target for 2014-2020.

The study includes not only an assessment of what has happened but also looks for answers to why something has/hasn't happened and, if possible, how much has changed. Thus, the study evaluates causal relationships of policy measure and its impact on results. In addition, the study seeks to identify unplanned/unintended consequences to learn from them and to improve future policies. Where unplanned/unintended effects have been identified, the study examines the role of the measure in creating such changes. If there is evidence that such negative effects are indeed related to the effects of the measure rather than external factors, the study takes closer look on possible mitigation actions and potential changes in the measure.

The analysis was carried out using a theory-based policy analysis method combined with evaluation criteria from the EU legislative assessment guidelines The Better Regulation Agenda – efficiency, effectiveness, relevance, coherence, added value, validity, complementarity, coordination, equality, sustainability and acceptability.

The most important prerequisite for the success of energy efficiency policies is the existence of clear objectives and the mandate of the policy-maker, i.e. an organization or program with clear mandates, a defined responsibility and adequate resources. In Latvia, the Energy Department of the Ministry of Economics (ME) is responsible for implementing energy efficiency policy, which has been dealing with this subject for many years. It has been and is responsible for the implementation of EU energy efficiency policies in Latvian legislation and their implementation in practice. Although ME has accumulated experience for three decades, its professional skills and capacity remain limited. This is seen in Latvia's limited capacity to implement the requirements of EU directives, including delayed transposition of the requirements of the directives in Latvian legislation, delayed implementation of legislative requirements, lack of ex-ante analysis prior to the introduction of policy measures, ex-post analysis in the course of the implementation of policy measures, lack of communication with stakeholders and lack of feedback, and reporting on the achievement of objectives. clearly described methods that give the impression that ME is not addressing the objectives but looking for ways of accounting for what has not been done, such as an estimate of the impact of energy taxation on energy consumption. Therefore, most policy measures are introduced formally, with minimal interest and understanding. Instead of performing activities to enhance the professional competence of its employees, a number of tasks are outsourced. In many interviews conducted in the framework of this study, this is mentioned as one of the main shortcomings for the successful implementation of energy efficiency policy.

The study shows that in recent years a paradoxical situation has developed in Latvia. While the body responsible for energy efficiency policy (ME) explains that the problems with the achievement of Latvia's

objectives arise from the lack of competence and capacity, financial institution Altum (owned by the government) actively carries out different activities to increase diffusion rate of energy efficiency. The main reason for it is increased market demand for energy efficiency which drives increased energy efficiency project loan portfolio. Unlike ME, Altum actively analyzes the market, trends, energy consumers, their behavior and looks for opportunities to increase demand for energy-efficiency services.

ME is also responsible for ability to balance and combine flexibility (capacity to adapt to changing conditions and ability to reduce potential factors of failure in the implementation process) and continuity (stable and predictable conditions). Limited competence and capacity of ME hinder flexible response to changing conditions and timely prevention of failing factors, as well as ensuring stable and predictable conditions. This is further hampered by a lack of transparency in policy-making and implementation. Many interviews of stakeholders identified legislative unpredictability as one of the biggest barriers, leading to negative attitudes towards energy efficiency and environmental challenges, and also increasing legal nihilism, for example, ME requires stakeholders to comply with their legislative obligations, while ME has not met its responsibilities for implementation of the national energy efficiency monitoring system for 8 years.

The involvement of stakeholders in the design and implementation of policy measures is an important success factor as it promotes flexibility. This measure has two objectives: to increase the adoption of policy measures and, at the same time, to improve efficiency by ensuring that the needs and expectations of stakeholders, including simple and clear rules, are taken into account throughout the process, with a short deadline for examining documents. In Latvia, it depends on the communication of EM with stakeholders, and it is very limited because it takes place in a formal and narrow circle.

ME has a limited capacity to adapt and merge different existing policies or to develop consistent sets of policy measures because it lacks professional competence. This is supported with the evidence of the use of outsourcing for policy analysis and the development of plans.

In all policy measures, success/failure factors depend on the human factor. Progress-oriented, interested persons at all levels (different positions in civil service and business, individual) drive energy efficiency measures, while unmotivated and indifferent people are hindering them or not introducing them at all.

The policy measures analyzed have great potential for achieving energy efficiency objectives, but this has not been used for a variety of reasons. One of the most important is the lack of consistency in the use of the penalty and reward measures ("carrot and stick"). Some policy measures have binding objectives, e.g. EEOS and voluntary agreements. Others do not have objectives, e.g. municipal energy management, large companies and energy consumers. Large companies and energy consumers are punished for not implementing energy audits, while others are not punished (voluntary agreement, municipal energy management). EEOS is the only scheme that incorporates both mechanisms that balance each other. However, the lack of feedback on the ME side, as well as the unregulated ratio of information measures and the share of energy efficiency measures introduced, have a significant impact in this scheme.

The whole set of policy measures included in the National Energy Efficiency plan would contribute much better to achieving the objective by regularly analyzing the measures already in place and correcting policies. A number of relevant factors have been identified separately in each of the measures which hamper their qualitative implementation and achievement of the targets set. For example, the energy efficiency monitoring system, which is the main tool for collecting and analyzing data in this plan, does not function fully for last 8 years. On the other hand, the voluntary agreement, which has been

established by legislation since 2011, has been continued in the implementation of the 2016-2020 plan. It was planned that this measure would have share nearly half of the whole objective, although the experience acquired in the past showed that the measure had not had an effect. This is also confirmed by the results of the implementation of the 2016-2020 plan.

***THE PROFESSIONAL COMPETENCE OF THE SECTOR IS HIGH ENOUGH IN LATVIA TO ACHIEVE THE STATED OBJECTIVES. THIS CAN BE DONE THROUGH THE CORRECT USE OF EXISTING POLICY MEASURES TO REMOVE EXISTING BARRIERS.***



# 1. INTRODUCTION

The aim of the study is to perform an assessment of Latvia's energy efficiency policy measures in achieving energy efficiency objectives.

EU Directive 2012/27/EU on Energy Efficiency (EU, 2012) defines a policy measure as a regulatory, financial, fiscal, voluntary or information instrument formally established and implemented in a Member State to create a support system for market participants, a requirement or an incentive to provide and purchase energy services and to implement other energy efficiency improvement measures.

The study analyses the Energy efficiency obligation scheme (EEOS), voluntary agreements, energy management in municipalities and enterprises directly managed by the state, energy audits/energy management systems of large companies and large electricity consumers, energy efficiency funds, the energy efficiency monitoring system and the impact of these measures on the Energy Efficiency Policy Alternative Action Plan for energy end-use savings towards the target for 2014-2020 (CoM, 24.05.2017).

The study has been carried out using the main evaluation criteria embedded in the EU legislative assessment guidelines “The Better Regulation Agenda” – efficiency, efficiency, relevance, coherence and added value, complemented by other specific criteria, including validity, enhancement, coordination, equality, sustainability, acceptability. They are combined with a theory-based policy analysis method.

The study includes not only an assessment of what has happened but also looks for answers to why something has/hasn't happened and, if possible, how much has changed. The study thus evaluates the causation of policy interventions and their impact on results. In addition, the study seeks to identify unplanned/unintended consequences for learning from them and for making improvements to future policies. Where unplanned/unintended effects have been identified, the study examines the role of the measure in creating such changes and where there is evidence that such negative effects are indeed related to the effects of the measure rather than external factors, the study determines possible mitigation actions and potential changes in the measure.

The accumulated experience of many countries with the implementation of energy efficiency measures shows that there is no “best” policy measure. However, scientists have identified typical circumstances and general characteristics that determine whether an energy-efficiency policy measure will be successful or not. Scientific literature offers a number of general factors which play a key role in the process of developing and implementing energy efficiency policy instruments (see page Figure 1.1):

- The most important prerequisite for success is the existence of clear objectives and the mandate of the policy-makers to an organization or program with clear powers, responsibility and adequate resources.
- The ability to balance and consolidate flexibility and continuity - the continuity of the program is important and can be achieved either by strong political support to civil servants or by setting up independent agencies that implement policies. A number of studies have found that a key success factor is continuity, which is characterized by stable and predictable conditions. Equally important is flexibility, characterized by the ability to adapt to changing conditions and the ability to reduce potential failure factors in the implementation process. Technical and market changes, organizational changes and changes in other policy areas can motivate adaptation. A number of studies have recognized the importance of the implementation agency's ability to quickly reduce specific barriers, such as the lack of information, tools and skills, for which guidelines, procedures, analytical tools, educational program, etc. should be developed.

- Involvement of stakeholders: involvement of stakeholders in the design and implementation of policy measures is recognized as an important success factor. It serves the dual purpose of increasing acceptance and at the same time improving efficiency by ensuring that the needs and expectations of stakeholders are taken into account throughout the process. The stakeholders are both target group members and various other actors that may be affected by a policy measure, such as energy auditors, energy consultants, equipment suppliers. A common feature is that stakeholders assess simple and clear rules as well as a short deadline for examining documents when decisions are to be taken by the implementing agency. The involvement of stakeholders contributes to flexibility. The implementation agency, which has contacts with stakeholders but also has the power to adapt and improve the policy measure, is more likely to succeed.
- The ability to adapt and consolidate different existing policies or to develop consistent sets of policy measures.



Fig. 1.1 Factors playing a key role in the process of developing and implementing energy efficiency policy measures

This study should be a starting point in discussions on existing policy measures. The results can be used to check whether the measure is:

- still needed
- creating added value
- effective and which rules should be amended if they have proven to be ineffective
- too expensive or too complicated
- inconsistent
- is out of date
- sustainable
- corresponding to the interests of different social groups
- acceptable in society and industry.

## 2. METHODOLOGY

The study uses a theory-based policy analysis method (Harmelink, 2008), (Blumenstein, 2000).

This method is intended to systematically assess all phases of the policy implementation process, success and failure factors, as well as end-effects such as target achievement, impact of energy savings and cost effectiveness, and factors of success and failure.

The general principle of this approach is that a possible theory is developed on the various stages of the intervention logic of a policy measure to achieve its objective of increasing energy efficiency. This approach has a number of advantages compared to other ex-post evaluation methods, since it is

- evaluating the whole process of policy implementation and not focusing solely on final impacts;
- developing indicators for each phase of the implementation process. This helps assess progress and failures as widely as possible;
- helping to find out not only whether policies are successful or not, but also why they are successful or unsuccessful and how they can be improved.

The theory-based policy analysis method is an iterative process for designing, evaluating and transforming a policy measure, based on lessons learned during the initial implementation period. In practice, this means that a theoretical policy assessment creates a credible theory on how the policy measure is expected to improve energy efficiency and at what point. The basic idea is to divide the whole process of policy implementation in order to gain insight into where the wrong assumption was made in the process of policy development and implementation and where improvements in impact and cost effectiveness are of key importance. The theory-based policy analysis method includes six steps (see page Figure 2.1).

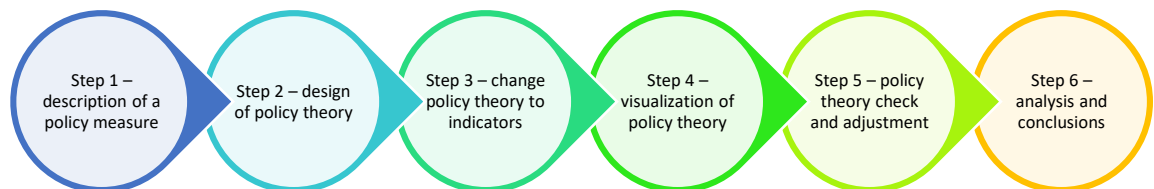


Figure 2.1 Theory-based policy analysis method

The theory-based policy analysis method is used in the following order:

- Step 1 - policy measure is described. This includes a description of the objectives, a period when the policy measure was active, target groups, policy implementers, available budget, available information on the impact of the originally expected energy savings and the cost-effectiveness of the measure.

- Step 2 - a policy theory is created. The policy theory includes all assumptions about how a policy measure should achieve the desired effect. The policy theory can be clear or indirect. Ideally, a clear theory is available. This means that policy makers have clearly described how, in their view, the policy instrument will work before it is introduced. It is that they have made clear which member has to act and that they have announced the expected outcome of each action. Often, the theory is largely indirect, and such a description is lacking. In this case, the evaluator draws up a theory. The development of a policy theory in practice involves documenting all indirect and direct assumptions in the policy implementation

process and mapping the relationship between causes and consequences, including relations with other policy instruments.

- Step 3 - policy theory is transformed into specific and desirable quantitative indicators. This means that an indicator is established for each intended causal and effect relations to measure whether the cause-to-effect relation has actually occurred and to measure whether the changes occurred (or part of) under the influence of the policy measure. This phase also includes the development of the necessary equations for the calculation of impact and cost-effectiveness.

- Step 4 - the relationship between causes and effects and the indicators are reflected visually in the chart.

- Step 5 - review and, if necessary, adjustment of policy theory. In step 2, the policy theory was developed using available (official) documents or experience with similar policy measures. In the fifth step, the policy theory is tested through interviews with policy makers, implementers and other actors involved in the implementation and supervision of a policy instrument.

- Step 6 – includes (a) summary and analysis of available information to establish indicators, (b) conclusions that are drawn on the impact and cost-effectiveness of the energy savings of the policy instrument using equations and indicators, (c) analysis of progress and failures attributable to the measures analyzed, and (d) recommendations that are made to improve the efficiency of energy savings and costs.

The theory-based policy analysis method is linked to the criteria offered by “The Better Regulation Agenda”. This is done by including the following criteria on the indicators:

- Effectiveness: The evaluation should include analysis on progress towards achieving the objectives. It should be based on evidence on why, whether and how these changes are related to a policy measure. The answer to this question should be broader than just showing whether the measure is on the right track. The analysis should aim to identify the factors driving or delaying progress and how they are linked (or not) to a policy measure. The analysis should also try to determine whether any expected or unexpected effects have occurred.
- Efficiency: the assessment should always carefully assess both the costs of the measure and the benefits of the measure, as they arise to different stakeholders, by determining what factors these costs/benefits are and how these factors are related to the policy measure. The answer to this question must provide evidence of actual costs and benefits, with a clear indication of what can be attributed to a policy measure and which cannot. The efficiency analysis is a key contribution to policy making by helping both policy makers and stakeholders to draw conclusions on whether the costs of a policy measure are proportionate to the benefits. Where appropriate, the conclusions of the assessment should clearly identify areas where it is possible to reduce inefficiency (particularly unnecessary administrative costs) and to simplify the policy measure.
- Relevance: the assessment should look at the objectives of the policy measure under assessment and identify how well they (still) meet (current) needs and challenges. The answer to this question should identify whether there is a discrepancy between the objectives of the policy measure and the (current) needs or problems. This is the key information that will help policy makers decide whether to continue, change or stop intervening. Relevance analysis is very important because if a policy measure does not help to address current needs or problems, it does not matter how efficient, effective or coordinated it is.
- Coherence: the evaluation should look at how well the policy measure works: (i) internally and (ii) with other policy measures. The answer to this question should provide evidence of where and how policy measures work well together (for example, in order to achieve common objectives or complementary actions) or identify areas where tensions exist (e.g.

targets that can potentially be contradictory or approaches that create inefficiency). Even minor changes to the planning or implementation of one intervention can lead to improvements or discrepancies in other ongoing activities. The assessment of coherence involves how good or different measures work together.

- Value added: the assessment should consider arguments on the value of a policy measure, which is in addition to the value that could be created by policy measures initiated at regional or national level by both public authorities and the private sector. For spending programs, the added value of a policy measure can be created by a variety of factors, such as benefits in coordination, improved legal certainty, greater efficiency or complementarity. The analysis of the added value of a policy measure is often limited to qualitative, given the identified difficulties in identifying the hypothetical situation.
- Validity - To what extent is the policy measure does or does not satisfy the needs of stakeholders? How much is the difference between the satisfaction of the various stakeholders?
- Equality - How fair are the effects shared between different groups of society, e.g. genders, regions, social groups, etc.?
- Sustainability - how much is the likelihood that the effect of the policy action will continue after the end of the measure?
- Acceptability - To what extent can it be seen as a change in the perception of a policy measure in the audience and in general in society?

In addition, the theory-based policy analysis method is complemented by a number of important aspects which play a key role in the process of developing and implementing energy efficiency policy instruments:

- the existence of clear objectives and the powers of the policy implementing body - organization or program with clear powers, responsibility and adequate resources is the most important prerequisite for success.
- the ability to balance and consolidate flexibility and continuity - the continuity of the program is important and can be achieved either by strong political support to civil servants or by setting up independent agencies that implement policies. A number of studies have found that a key success factor is continuity, which is characterized by stable and predictable conditions. Equally important is flexibility, characterized by the ability to adapt to changing conditions and the ability to reduce potential failure factors in the implementation process. Technical and market changes, organizational changes and changes in other policy areas can motivate adaptation. A number of studies have recognized the importance of the implementation agency's ability to quickly reduce specific barriers, such as the lack of information, tools and skills, for which guidelines, procedures, analytical tools, educational programs, etc. should be developed.
- involvement of stakeholders: involvement of stakeholders in the design and implementation of policy measures is recognized as an important success factor. It serves the dual purpose of increasing acceptance and at the same time improving efficiency by ensuring that the needs and expectations of stakeholders are considered throughout the process. The stakeholders are both target group members and various other actors that may be affected by a policy measure, such as energy auditors, energy consultants, equipment suppliers. A common feature is that stakeholders assess simple and clear rules as well as a short deadline for examining documents when decisions are to be taken by the implementing agency. The involvement of stakeholders contributes to flexibility. The implementation agency, which has contacts with stakeholders but also has the power to adapt and improve the policy measure, is more likely to succeed.

- the ability to adapt and consolidate different existing policies or to develop consistent sets of policy measures.

The policy analysis uses different data sources:

- Information provided by the Ministry of Economics from the energy efficiency monitoring system, where unverified and unprocessed data from large companies and large electricity consumers and municipalities are available. By the date of submission of this study, we have not received any additional information requested by letter 04000-2.2.2-e/327 of 16 October 2019.
- Interviews with involved parties.
- Publicly available information.

During the policy implementation process, this policy analysis approach can help to identify problems and barriers at an early stage and allow the policy instrument to develop and adapt to changing technical, organizational, economic and other conditions. An efficient and efficient energy efficiency policy focused on low cost savings will play a key role in achieving the energy and climate policy goals beyond 2020. Therefore, the assessment should not only include the identification of savings as set out in the EU Directive, but also include approaches that encourage continuous policy analysis, learning and implementation.

### 3. BASIC INFORMATION ON ENERGY EFFICIENCY POLICY MEASURES

This chapter provides basic information on the energy efficiency policy measures analyzed in the study, including the aim of the policy measure, the duration of the policy measure, the implementation of the policy measure, the target audience of the policy measure, the planned budget of the policy measure, the planned energy savings, the costs of energy efficiency measures and their financing, the reporting of energy savings.

#### 3.1. Energy efficiency legislation in Latvia

Figure 3.1 shows the main planning and legislative documents related to energy efficiency.

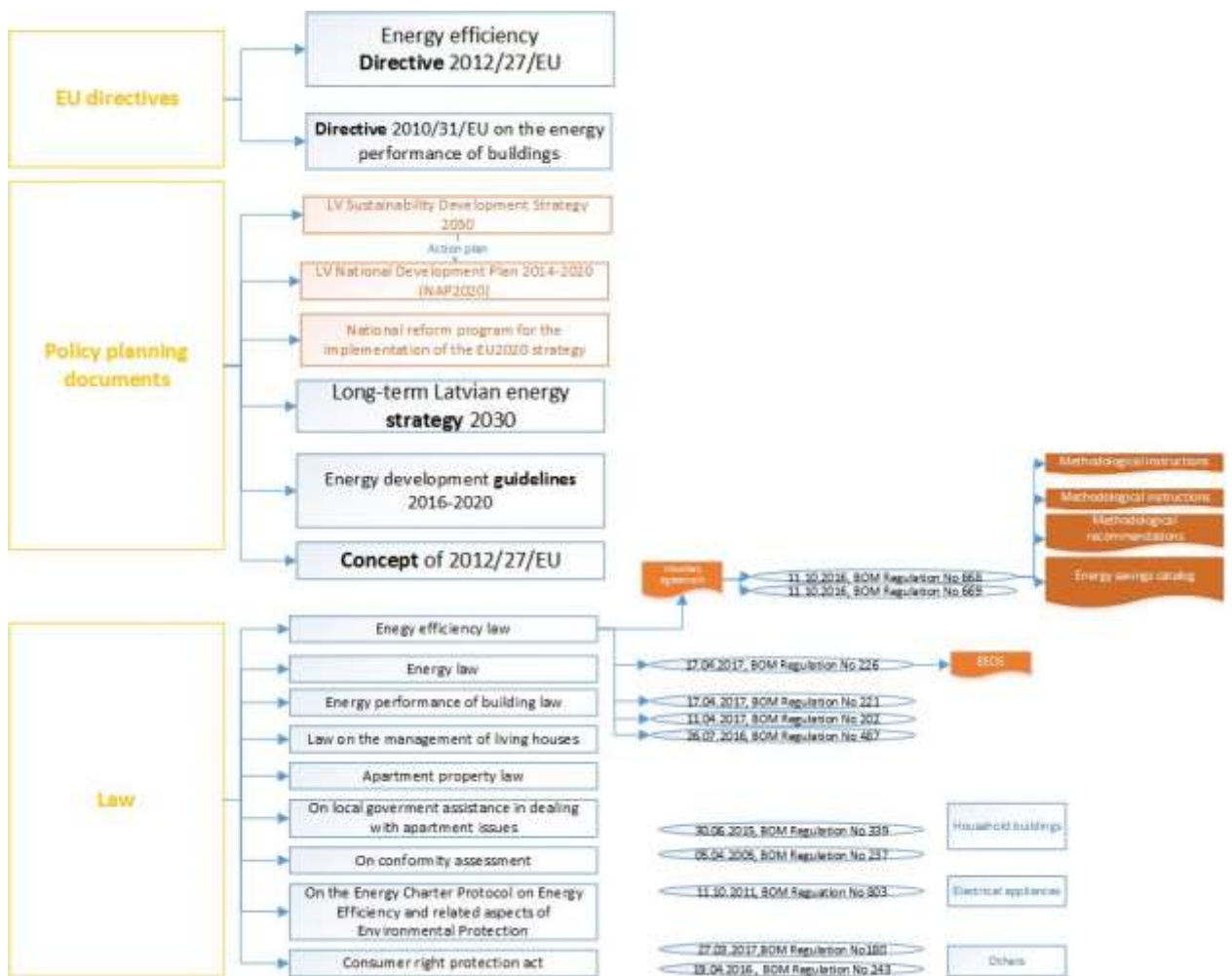


Fig. 3.1. Main planning and legislative documents related to energy efficiency in Latvia

Two main basic documents developed by the European Parliament and the Council are the 2012 Directive 2012/27/EU on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC and 2010/31/EU on energy performance of buildings.

Directive 2012/27/EU on energy efficiency (EU, Directive 2012/27/EU on energy efficiency, 2012) aims to adapt EU energy legislation to the energy efficiency and climate targets set for 2030 and to promote the implementation of the Energy Union strategy in order to:

- reduce the EU dependency on energy imports;
- reduce emissions;
- promoting job creation and growth;
- strengthen consumer protection;
- reduce energy poverty.

Directive 2010/31/EU on the energy performance of buildings (EU, 2010) aims to improve the energy performance of buildings in the EU, taking into account different climate and local conditions, to set minimum requirements and a common framework for calculating energy efficiency. EU countries should set optimal minimum energy performance requirements and should be reviewed every five years. Such requirements should be laid down for buildings, their components and the energy used.

The policy planning documents Latvia's Sustainability Development Strategy 2030 (Saeima, Latvia's Sustainability Development Strategy 2030, 2010), Latvia's National Development Plan 2014-2020 (Saeima, 2012) and National Reform Programme for the Implementation of the EU2020 Strategy (ME, National Reform Programme for the Implementation of the EU2020 Strategy, 2011) include a course of action for energy efficiency and efficiency for energy production.

In accordance with the above directives, policy planning documents have also been developed in Latvia, which specifically define the strategy and guidelines for energy.

Latvian Energy Long-Term Strategy 2030 (ME, 2013) aims to target a competitive Economics while aiming for sustainable energy, ensuring its sustainability in terms of both economic and social and environmental awareness and increasing the security of energy supply.

The Energy Development Guidelines 2016-2020 (CoM, 09.02.2016) aim to define a strategy for a competitive, secure and sustainable energy policy while highlighting the long-term development of the sector in all areas of the energy sector. The guidelines are based on the Latvian National Development Plan 2014-2020 (Saeima, 2012).

The Conception of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC, the transposition of requirements into law (CoM, 02.12.2013) aims to develop options for the implementation solution prior to the development of the relevant laws and the future action plan.

In 2018, the State Audit Office of the Republic of Latvia published a report entitled "Is a targeted energy efficiency policy in place to achieve the expected energy end-use savings?" (SC, 2018), which states that "the requirements of the directives adopted to achieve the EU overall



energy efficiency objectives, including the Energy Efficiency Directive and the Energy Performance of Buildings Directive”, should be taken to national legislation by Member States.

The Ministry of Economics is responsible for taking over the requirements of the Energy Efficiency Directive and the Energy Performance of Buildings Directive at national level.

In order to meet certain requirements of the Energy Efficiency Directive, Member States have been given choice and therefore a “Conception for the transposition of the Energy Efficiency Directive” was developed, which looks at possible solutions for the implementation of the Directive.

Latvia did not ensure timely transposition of the Energy Efficiency Directive. Although the directive was already adopted on 25.10.2012 and its requirements had to be incorporated into the legislation and had to be entered into force by 05.06.2014, the Ministry of Economics has only announced the Energy Efficiency Law at this date at the meeting of the State Secretaries, but it was only adopted in the Saeima by 03.03.2016 (see Fig. 3.2).



Fig. 3.2. Transposition of the Energy Efficiency Directive (SC, 2018)

In the case of both the Energy Efficiency Directive and the Energy Performance of Buildings Directive, Latvia did not ensure the correct transposition and application of the requirements of the directives, which led to the European Commission proposing infringement procedures.

The final provisions for the transposition of the Energy Efficiency Directive were adopted on 25.04.2017., while the Saeima adopted amendments to the Energy Performance of Buildings Law on the correct transposition and application of the requirements of the Energy Efficiency Directive on 15.06.2017.

The Ministry of Economics, which is responsible for developing and implementing energy policy, is also responsible for implementing most energy efficiency improvement measures.

Other responsible parties for energy efficiency implementation are the Ministry of Environmental Protection and Regional Development, planning regions, municipalities, as well as other ministries, merchants, managers of multi-apartment residential houses and apartment owners.

The main source of funding for the implementation of energy efficiency measures in public and municipal residential buildings, as well as in the transport sector, agriculture and fisheries are various European Union funds (European Regional Development Fund, Cohesion Fund, European Agricultural Fund for Rural Development, etc.), the Instrument for Climate Change Finance, the Instrument for the auctioning of emission allowances, national and municipal budgets.

The main funding for energy efficiency measures in the public sector (public and municipal buildings) is planned from the European Regional Development Fund and the State budget, amounting to a total of EUR 170.4 million.

Energy Efficiency Law (Saeima, 29.03.2016) defines a variety of measures and obligations at the levels of the state, municipalities, large companies and large electricity consumers, etc. to achieve the binding national energy efficiency goal. A number of Cabinet regulations, methodological provisions and a number of requirements arise from the Energy Efficiency Law (Figure 3.3.).

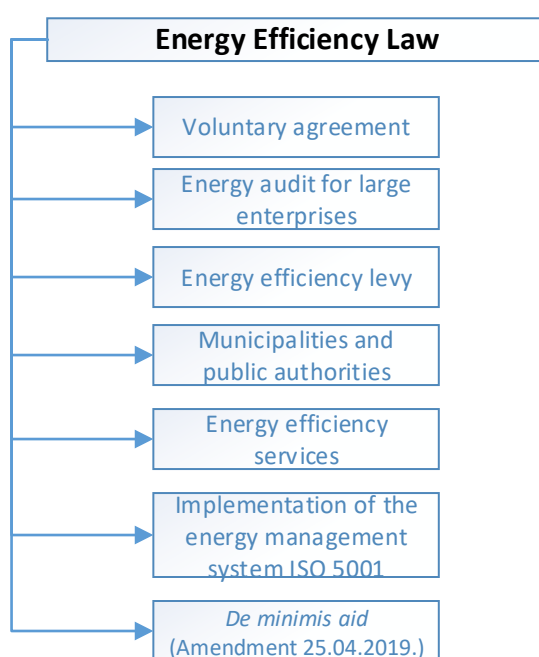


Fig. 3.3 Energy Efficiency Law and related secondary legislation

In accordance with the Energy Efficiency Law, the State has to develop and regularly update the energy efficiency plan, defining measures to achieve the mandatory energy end-use savings target calculated for Latvia as a Member State of the European Union (hereinafter - mandatory target). Latvia's mandatory target for the period 2014-2020 is 9896 GWh, and these savings should be obtained through energy efficiency measures for final energy consumers (CoM, 24.05.2017.).

Cabinet of Ministers approved the Conception of the transposition into law of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (CoM, 02.12.2013). In line with this, Latvia has chosen to introduce energy efficiency policy measures directed by state and municipalities (including voluntary energy efficiency agreements with commercial enterprises, organisations and municipalities), as well as the introduction of an EEOS. Under Directive 2012/27/EU (EU, 2012), national and municipal policy measures are seen as an alternative option for the EEOS to achieve the mandatory objective. Therefore, the policy measures put in place by the state and local authorities are referred to as alternative measures and should be listed separately from the measures taken by the parties responsible for the EEOS.

Paragraph 3 of Section 4 of the Energy Efficiency Law requires the Ministry of Economics to draw up a plan of policy measures to achieve the national energy efficiency objective. Section 6, paragraph two of the law delegates the Cabinet of Ministers to define the amount of savings resulting from energy efficiency policy measures.

Ministry of Economics has developed Plan for alternative energy efficiency policy measures to achieve the energy end-use savings target for 2014-2020 (CoM, 24.05.2017.). The plan foresees that the alternative policy measures will provide accumulated energy savings of 4503.2 GWh in 2020. Additional savings of 5392.8 GWh will be provided through EEOS, voluntary agreements with energy suppliers who are not obliged under the EEOS. Additional alternative measures will be used if necessary. An important factor in achieving the national energy efficiency goal is correct energy savings accounting, which makes it possible to obtain information not only on the savings of measures directly aimed at increasing energy efficiency, but also on measures which, in addition to the above-mentioned performance indicator, also result in an improvement in energy efficiency as an additional benefit.

The plan foresees that 59.6% of the target will be achieved through voluntary agreements with commercial enterprises, representative organisations of commercial enterprises or municipalities, 38% with alternative measures and 2.4% with EEOS. The plan thus shows the amount of savings resulting from energy efficiency policy measures to ensure that the 100% mandatory target is achieved (CoM, 21.03.2017.). The sectors in which energy distribution and retail energy operators operate include electricity, gas supply, heat supply, and transport fuels and other fuels. According to the plan, a significant part of the energy savings will be obtained through voluntary agreements, and additional measures. As a result, two mechanisms (EEOS for electricity retailers and voluntary agreements), which are already in use in EU countries to boost energy efficiency for large-scale final consumers, will be approved by 2020. In the event that both policy measures do not show sufficient efficiency, the inclusion of other sectors such as district heating and gas supply in EEOS should be considered during the second commitment period. The implementation of the plan is carried out through the Energy Efficiency Law and the secondary legislation underlying it (see page Figure 3.4).

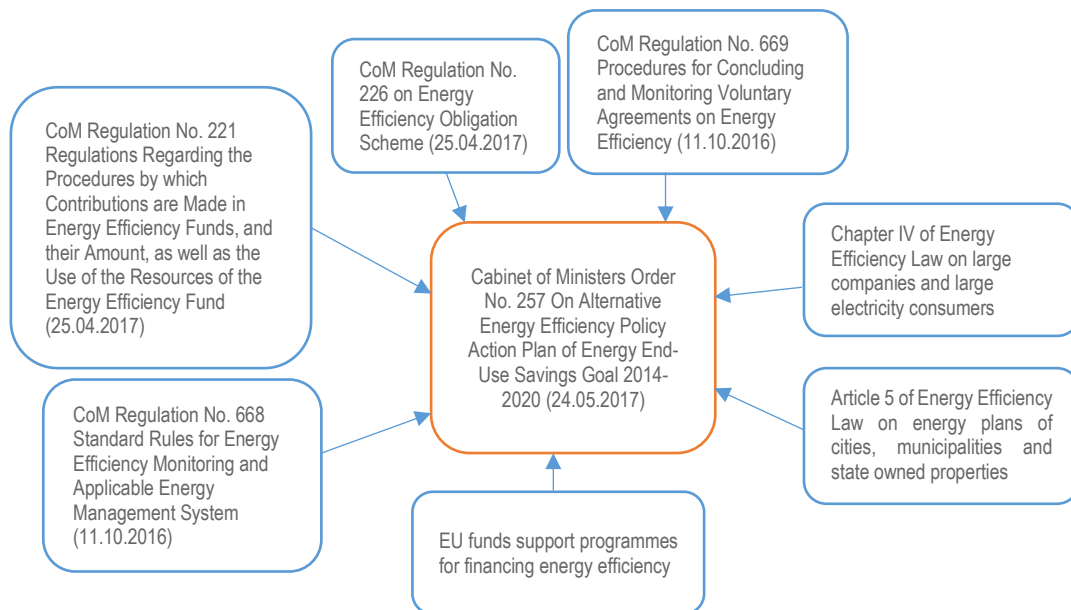


Fig.3.4. Policy documents related to energy efficiency in Latvia (CoM – Cabinet of Ministers)

### 3.2. Energy efficiency obligations scheme

- *Objective of policy measure*

The EEOS was introduced in accordance with Section 6(2) and (7) of the Energy Efficiency Law (Saeima, 29.03.2016) and Article 7 of EU Directive 2012/27/EU (EU, 2012) under Cabinet of Ministers Regulation No.226 Rules for the Energy Efficiency Obligation Scheme (CoM, 25.04.2017). The objectives mentioned in the Regulations annotation for this policy measure (CoM, 21.03.2017.) are:

- putting EEOS into practice;
- achieving total energy savings of 234 GWh as a result of the introduction of the EEOS, or 2.4% of Latvia's binding energy efficiency goal (CoM, 21.03.2017.), (CoM, 24.05.2017.).

During development of Cabinet of Ministers Regulations No.226 (CoM, 25.04.2017), Ministry of Economics has assumed that half of all EEOS savings will be gained with information and education activities, and the other half through contributions to the Energy Efficiency Fund or through energy efficiency measures that are as expensive as equivalent contribution to the EE Fund.

Each EEOS party calculates the energy efficiency goal based on Cabinet of Ministers Regulations No.226. They provide that the goal during the first commitment period is determined by the following method:

$$2018 \text{ year: } P_{2018} = 1,5 \% \times A_{2018};$$

$$2019 \text{ year: } P_{2019} = 1,5 \% \times (A_{2018} + A_{2019});$$

$$2020 \text{ year: } P_{2020} = 1,5 \% \times (A_{2018} + A_{2019} + A_{2020}),$$

where

$P_n$  – the amount of the EEOS party's annual obligation (MWh);

$A_n$  – amount of electricity sold by the responsible party in the year concerned (MWh) minus the amount of electricity sold to big electricity consumers and big companies, based on a auditor's certification.

- *Operational period of the policy measure*

Cabinet of Ministers Regulations No. 226 (CoM, 25.04.2017) has entered into force on 25.04.2017. and is still in force. This policy measure is implemented in consecutive steps or periods: the starting period is from January 1, 2014 till December 31, 2017, the first period is from January 1, 2018 till December 31, 2020 and the following periods are set every 5 years.

- *Implementers of policy measure*

Cabinet of Ministers Regulations No. 226 (CoM, 25.04.2017) states that electricity retailers (more than 10 GWh of electricity sold per year) are accounted as EEOS party. Their obligation is to inform consumers about energy efficiency measures or help them to introduce energy efficiency measures (e.g. replacing existing technologies with more energy efficient). The Regulations define the method for calculating the amount of the responsibility of the EEOS party during the first commitment period. The amount of the obligation of annual new energy savings in final energy consumption is equal to 1.5% of the amount of electricity sold by the responsible party during the year concerned. Parties are obliged to provide cumulative energy savings.

The electricity sector has been selected because it covers almost all Latvian residents and businesses without creating parallel and thus excessive information campaigns. According to data from the Central Statistical Bureau, there were 9 electricity retailers whose electricity sales in 2015 amounts to more than 10 GWh. This is equal to total sales of 99.2% of total electricity final consumption in Latvia. Thus, the EEOS covers virtually all sales to Latvian electricity consumers, and the benefits are balanced with the administrative burden for both the state and the EEOS responsible parties. Due to lack of experience with EEOS, the binding goal initially has been set low (only 2.4% of the binding national goal) in order to minimise potential uncertainties and risks regarding the impact of the new EEOS on administrative resources and energy costs for different energy users.

The second commitment period is scheduled from January 1, 2021 to December 31, 2025 and the third commitment period from January 1, 2026 to December 31, 2030. The selection criteria for the sector and responsible parties to be included in the EEOS are expected to be revised and set at least 6 months before the end of each commitment period. The inclusion threshold of 10 GWh was selected in the first phase, on the assumption that it does not lead to significant market distortions at the current stage of the development of the electricity market, allowing both the large and the smallest operators to develop. At the same time, the possibility that EEOS could potentially have an unplanned impact on the electricity market cannot be excluded completely, so the threshold for the inclusion of EEOS for electricity retailers will be assessed before the beginning of the second commitment period.

Cabinet of Ministers Regulation No. 226 (CoM, 25.04.2017) determine the amount of the responsibility of the parties in the breakdown by year and the methodology for determining them, in accordance with the principle of energy savings (cumulation) set out in Directive 2012/27/EU (EU, 2012). Regulation also provides list of energy efficiency measures that can be taken by the responsible parties. Both the costs incurred by the responsible party for energy efficiency

improvement measures and contribution to the Energy Efficiency Fund may be recovered by including them in energy charge.

According to Section 6 of the Energy Efficiency Law (Saeima, 29.03.2016), if EEOS party decides to contribute to Energy Efficiency Fund instead of implementing energy efficiency measures to reach binding energy efficiency goal, the state or municipality owned Energy Efficiency Fund has to ensure energy savings in the amount of the responsibility of the responsible party for which the contribution has been made. The responsible party has to transfer the contribution to the Energy Efficiency Fund for the budget programme/sub-programme of the Ministry of Economics/municipality established for this purpose. The relevant budget programme has to be administered by the Ministry of Economics/municipality.

- *Target audience of policy measure*

Electricity retail sector covering 99.2% of all Latvian residents and businesses (CoM, 21.03.2017.).

- *Planned budget of policy measure*

In the annotation of the Regulations No.226 (CoM, 21.03.2017.) Ministry of Economics estimates the indicative total costs at EUR 17135/year, including:

- Savings audit: EUR 3500/year;
- Review of energy efficiency plans and their amendments: 600 EUR/year x 9 EEOS responsible parties = 5400 EUR/year;
- Review and calculation of required data: 120 EUR/year x 9 = 1080 EUR/year;
- Processing of annual reports: EUR 300/year x 9 = EUR 2700/year;
- Administration of the Fund's contribution: EUR 1020/year;
- Application of the fine: EUR 15/year x 9 = EUR 135/year;
- Development of methodological materials: 1300 €/year;
- Adding information the Energy Efficiency Catalogue: EUR 2000/year.

The creation of an EEOS will be ensured within the limits of the budget resources allocated to the Ministry of Economics. The Ministry of Economics estimated that indicative costs would start from 2017.

Planned indicative costs of EEOS parties (average costs per party) (CoM, 21.03.2017.):

- Planning and corrections: 450 eur/year;
- Collection of information on energy savings achieved, reporting: 4250 eur/year;
- Total: 4700 eur/year.

- *Planned energy savings*

The annotation of the Regulation No. 226 (CoM, 21.03.2017.) foresees that the introduction of the EEOS will result in total energy savings of 234 GWh, or 2.4% of Latvia's mandatory target. Following an assessment by the Ministry of Economics, half of all EEOS savings will be gained from information and education activities and the other half will come from measures

implemented by Energy Efficiency Fund or by implementing measures with the costs that are equivalent to the contribution to the fund.

- *Costs and financing of energy efficiency measures*

The annotation of Regulation No. 226 (CoM, 21.03.2017.) evaluates that the impact on electricity costs on consumers' final bills is a maximum of 0.5%. In a free electricity market, electricity traders are interested in finding the cheapest solutions to promote energy efficiency measures, so the expected impact on electricity costs for final consumers will be significantly lower. At the same time, it should be noted that the costs of implementation of technological energy efficiency measures are included in the bill of the consumer who receives these measures, except for information campaigns. Costs for information measures are included in electricity tariff for all consumers.

In order to be able to assess the costs included in the energy charge and to ensure their transparency and reliability, the EEOS responsible party should draw up a plan for energy efficiency improvement measures, which should include information on the costs of the measures, including the contribution to the Energy Efficiency Fund. Consequently, the costs are already known when concluding a contract with the consumer. On the other hand, the costs of the measures to the particular consumer are covered by a separate agreement on the performance of the measures.

- *Conditions for recovery of costs for the parties responsible for the EEOS*

According to Regulation No.226 (CoM, 25.04.2017), responsible parties may incur costs in the following cases: (1) informing end-users about the possibilities for improving energy efficiency; (2) making contributions to the Energy Efficiency Fund; (3) implementing measures to improve energy efficiency at the end-user.

The final user's energy charge may only include expenditure on energy efficiency improvement measures at the end-user concerned. In such a case, for example, the electricity retailer covers part of the end-user's costs for the replacement of the equipment on the basis of a contract and then the end-user has to gradually reimburse that part of the costs.

The costs incurred by the EEOS responsible party from information measures may not be included in the energy charge and may be considered as operating expenses of the responsible party and thus be included in the electricity tariff.

On the other hand, the payment to the Energy Efficiency Fund may be included in the operating costs and thus in the electricity tariff.

- *Responsibilities of the EEOS parties*

During the first commitment period of the EEOS, it is not possible for the responsible parties to withdraw from the EEOS.

According to Section 4 of Cabinet of Ministers Regulation No. 668 on Energy efficiency monitoring and application of energy management system (CoM, 11.10.2016), Ministry of Economics has developed the Energy savings catalogue, which is available on Ministry's website. This catalogue facilitates the accounting of energy savings for the EEOS parties if they

carry out standard energy efficiency measures listed in the Energy savings catalogue. Implementation of energy efficiency measures must be demonstrated by supporting documents, e.g. contracts concluded by the EEOS party for the introduction of energy efficiency measures to final energy consumers. Savings from information and education activities, as well as from other measures, has to be calculated and reported in conformity with the regulatory documents regulating energy efficiency monitoring. Those measures has to be supported by documents certifying that the measure has been implemented, e.g. lists of participants.

- *Energy efficiency measures under the EEOS*

Regulation No. 226 (CoM, 25.04.2017) states that the EEOS party can fulfill the obligation in a number of ways, including introduction of energy efficiency improvement measures directly to the end-user. These may also be measures listed in the Energy savings catalogue.

The annotation of Regulation No. 226 (CoM, 21.03.2017) refers to Conception on the transposition into law of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (CoM, 02.12.2013) which states that the EEOS parties, in addition to energy efficiency improvement of buildings, the following energy efficiency measures can be implemented:

- installation of heating regulators and meters in apartments and informing consumers about heating regulation;
- installation of solar collectors for heating and hot water;
- installation of heat pumps;
- installation of energy-efficient boilers;
- installation of heat recovery systems;
- replacement of electrical appliances (refrigerators, electric cookers, etc.);
- replacement of lighting;
- the introduction of automatic lighting control;
- replacement of electric motors, pumps and other appliances;
- ESCO services.

- *Reporting energy savings*

In 2017 EEOS parties report about energy efficiency measures carried out with end-users in the starting period (January 1, 2014-December 31, 2017). They report to the energy efficiency monitoring system. The EEOS party has to demonstrate, by supporting documents, its participation in those measures. This amount of the savings is subtracted from the first commitment period. By November 1 each year the EEOS party has to submit to the Ministry of Economics an energy savings report for the previous calendar year in conformity with the regulatory regulations regarding energy efficiency monitoring (see Figure 3.5).



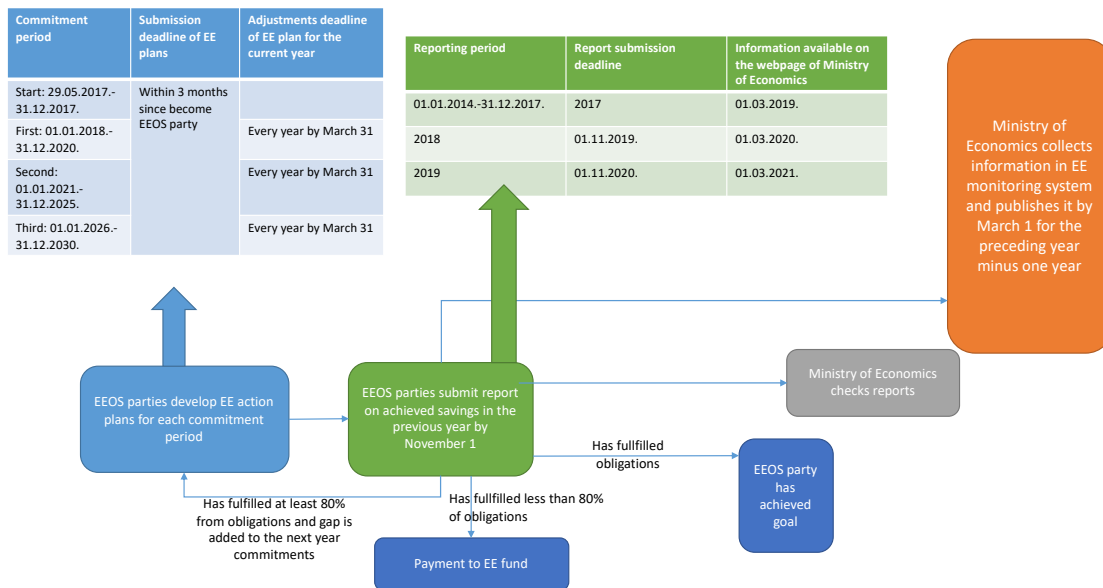


Figure 3.5 EEOS implementation scheme

### 3.3. Voluntary agreement

The voluntary agreement is defined by Cabinet of Ministers Regulation No. 669 Procedures for Concluding and Supervising a Voluntary Agreement on Energy Efficiency Improvement (CoM, 11.10.2016).

- *Objective of the policy measure*

Stimulate energy efficiency improvements in companies, business organisations or municipalities and achieve at least 10% of energy savings.

- *Operational period of the policy measure*

Regulation No. 669 (CoM, 11.10.2016) entered into force on 11.10.2016 and is still in force.

- *Implementers of policy measures*

Companies, organisations representing them or local governments. Ministry of Economics has to publish at least once a year in its website an invitation for companies, representative organisations or municipalities to enter into an agreement with the Ministry on the improvement of energy efficiency. In 13.12.2019. this list is extended to planning regions or organisations representing municipalities.

- *Target audience policy measure*

Energy producers and final energy consumers.

- *Planned budget of policy measure*

The annotation of Regulation No. 669 (CoM, 13.09.2016) does not foresee administrative expenditure for the implementation of this policy measure.

- *Planned savings of a policy measure*

The plan for alternative energy efficiency policy measures to achieve the energy end-use savings target for 2014-2020" (CoM, 24.05.2017) provides that 59.6% of the target, or 5898 GWh, will be achieved through voluntary agreements with companies, their representative organisations or municipalities.

- *Costs and financing of energy efficiency measures*

Regulation No. 669 (CoM, 11.10.2016) provides that all costs for the implementation of energy efficiency measures are covered by companies, their representative organisations or municipalities. The regulation provides for the possibility that an agreement can include conditions regarding the possibilities of support for energy audits and individual energy efficiency improvement measures taken in accordance with the agreement.

- *Introduction of energy efficiency measures*

The agreement between the Ministry and the other party has to include:

- energy savings targets;
- an energy efficiency plan;
- an obligation to inform the parties on matters related to energy efficiency improvements;
- an obligation to provide information to the Ministry regarding the progress of the implementation of the agreement;
- the conditions for support for energy audits and the individual energy efficiency improvement measures taken under the agreement;
- other information needed to comply with the agreement.

The energy efficiency plan of the participant to the Arrangement has to include:

- a general description of the purpose of the agreement;
- high, medium and low priority energy efficiency measures and the time needed to implement them;
- short-term and long-term predictable energy savings (where possible);
- the conditions for setting up an energy management system or other system to ensure the assessment of continuous energy consumption;
- other information describing and explaining the manner and mechanism in which the agreement will be reached.

- *Reporting of energy savings*

A participant in the agreement has to report annually, in conformity with the regulatory regulations regarding the monitoring of energy efficiency, on the results of the implementation of the agreement in the previous calendar year by November 1 (see Figure 3.6).

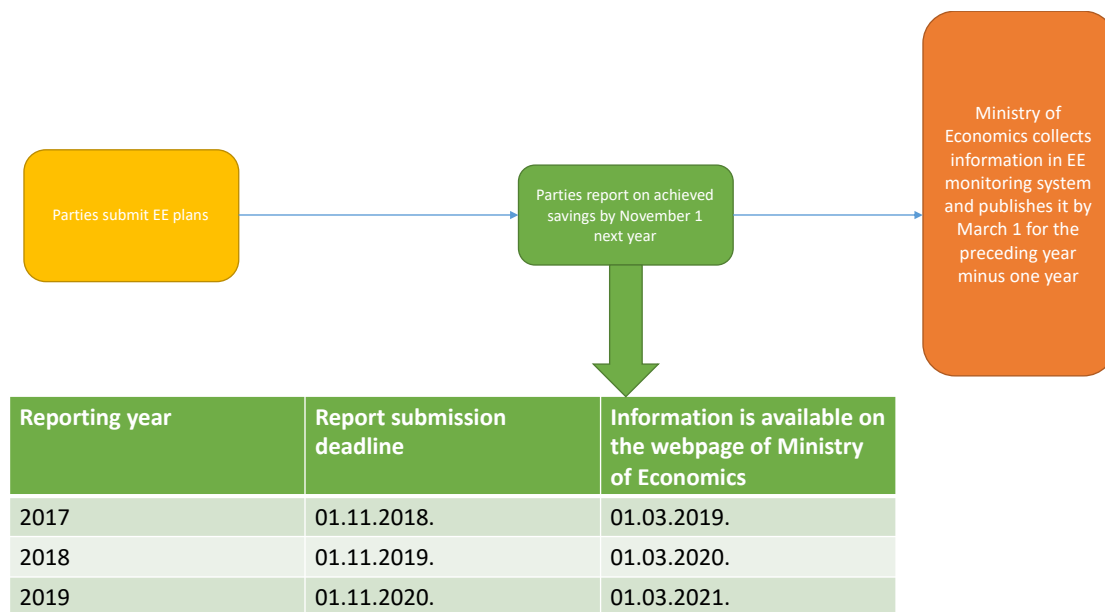


Figure 3.6 Framework for the implementation of the voluntary agreement

### 3.4. Energy audit and energy management in large companies and electricity consumers

- *Policy measure objective*

Energy Efficiency Law aims to ensure the availability of energy audits and regular, mandatory energy audits in large companies. (CoM, 2015)

- *Operational period of the policy measure*

Energy Efficiency Law has entered into force on 29.03.2016 and is still in force.

- *Implementers of policy measures*

Large enterprises (merchants employing more than 249 employees or accounting year turnover exceeding EUR 50 million and annual balance sheet of 43 mEUR. Large enterprises have to be listed each year by December 1 by the Central Statistical Bureau, using data from the last approved reporting period of the company. An entity is included in the list of large companies if it meets the criteria of the large company in two consecutive reporting periods.

Large electricity customers (merchants whose annual electricity consumption exceeds 500 MWh. The energy produced by the company, which is transferred to other users, has to not be included in the total energy consumption). The system operator has a duty to provide the Ministry of Economics each year with the annual energy final consumption data of companies conforming to the status of the large electricity consumer. The procedures by which the system operator has to provide the annual energy final consumption data of companies conforming to the status of a major electricity consumer to the responsible Ministry are determined within the framework of the energy efficiency monitoring system.

- *Target audience of policy measure*

Large companies and large energy consumers.

- *Planned budget of policy measure*

No funding is provided from the state budget.

- *Planned savings of a policy measure*

The Energy Efficiency Policy Alternative Action Plan to achieve the energy end-use savings target for 2014-2020 provides that energy audits in large companies will assess the energy consumption of companies and identify measures to improve energy efficiency and will bring the accumulated energy savings to 753.6 GWh by 2020. On the other hand, the introduction of energy management for large electricity consumers will deliver the accumulated energy savings of 54 GWh by 2020.

- *Costs and financing of energy efficiency measures*

The implementation and maintenance of the energy plans, energy management or environmental management system are funded by large companies and large energy consumers. They also finance energy efficiency measures and their implementation.

Energy Efficiency Law provides that the existence of a certified energy management system is a favourable qualifying criterion, which is taken into account when assessing applications for large electricity consumer projects, if the project in question is fully or partly implemented by means of aid such as payments from the state or municipal budget, state or municipal guarantees, the subsidy of interest rates on loans financial assistance, as well as other financial assistance, which is granted or provided from the state, municipalities or European Union budget resources and foreign financial assistance funds.

- *Introduction of energy efficiency measures*

The Energy Efficiency Law requires large companies to carry out energy audits on a regular basis. The first energy audit has to be carried out within one year after the inclusion of the company in the list referred to in the second paragraph of this Section. The energy audit has to be carried out every four years. This requirement does not apply to large companies if they introduce and certify an energy management system or introduce and certify an environmental management system and provide a continuous process for evaluating energy consumption in order to control and reduce energy consumption, covering at least 90% of the total energy consumption of the large company and ensuring compliance with the energy consumption assessment process described in the law. The procedures for energy management and environmental management standards, which are applicable to the fulfilment of the requirements of this Law, in which the environmental management system has to be supplemented and the approval of such an environmental management system, which have to ensure the continuous process of evaluating energy consumption, and the addition has to be determined by the Cabinet of Ministers.

Large electricity consumer has a duty to introduce and maintain a certified energy management system in conformity with the standard, covering at least 90% of the total final energy consumption of the large electricity consumer and ensuring compliance with the

procedures for evaluating energy consumption with the conditions of this Law. This requirement does not apply to the large electricity consumer if it has introduced an environmental management system by the date of coming into force of the Law and has supplemented it and certified it within six months from the date of coming into force of the Law in order to control and reduce energy consumption, covering at least 90% of the total energy final consumption and ensuring compliance with the energy consumption assessment process with the conditions of this Law. The procedures for energy management and environmental management standards, which are applicable to the fulfilment of the requirements of this Law, in which the environmental management system has to be supplemented and the approval of such an environmental management system, which have to ensure the continuous process of evaluating energy consumption, and the addition has to be determined by the Cabinet of Ministers. These requirements do not apply to the large electricity consumer, provided that it regularly provides an energy audit. The energy audit has to be carried out every four years.

Large company has to implement at least three energy efficiency measures proposed in the energy audit or in the framework of the certified energy management system referred to in paragraph six of this Section or in the framework of the certified environmental management system, with the highest energy savings or economic returns assessed.

Large electricity consumer has to introduce at least three energy efficiency measures recommended in the framework of the energy management system or the environmental management system, with the highest energy savings or economic returns assessed.

Cabinet of Ministers Regulation No. 202 Provisions on the amount of the energy efficiency levy and the procedures for calculating, applying, paying and controlling it (CoM, 11.04.2017) provide that, if the above mentioned requirements are not met, undertakings has to pay a fee of a rate of seven per cent from the costs of electricity consumed in the year. These costs has to be calculated by multiplying the megawatt hours consumed in the year concerned by the average electricity price published by Eurostat in Latvia in the previous year (euro/MWh). Revenues from the energy efficiency charge are transferred to the national Energy Efficiency fund.

- *Reporting on implemented energy efficiency measures*

Large companies and large electricity consumers have to report to the Ministry of Economics about implementation of an energy audit or the implementation of a certified energy management system or a certified environmental management system, the proposed energy efficiency improvement measures, as well as report annually on the implemented energy efficiency improvement measures and the energy savings resulting therefrom. The CoM has to determine the reporting procedures.

- *Reporting energy savings*

Figure 3.7 shows the procedures and dates for reporting energy savings in the energy efficiency scheme for large energy consumers and large companies.

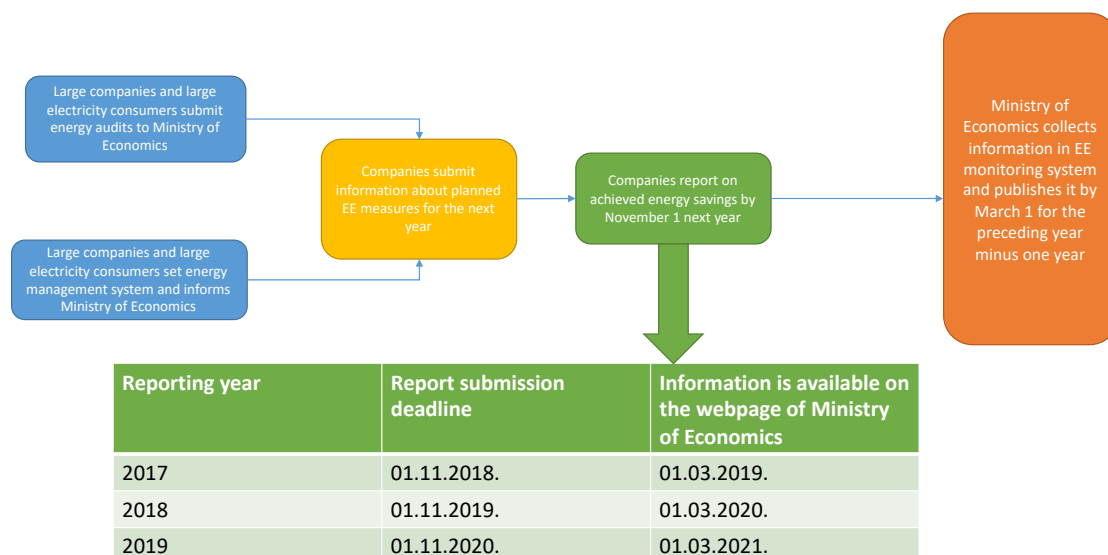


Fig. 3.7. Energy efficiency scheme for large electricity consumers and large companies

### 3.5. Energy efficiency funds

- *Policy measure objective*

The establishment of national or municipal energy efficiency funds aims to support initiatives in the field of energy efficiency. (CoM, 2015)

- *Operational period of the policy measure*

CoM Regulation No.221 on Provisions on the arrangements for the contribution to energy efficiency funds and their amount, as well as the use of energy efficiency fund funds (CoM, 25.04.2017.) entered into force in 03.05.2017. and is still in force.

- *Implementers of the policy measure*

State owned financial institution Altum has to establish a national Energy Efficiency fund. The creator and holder of the municipal energy efficiency fund has to be the municipality.

The Ministry of Economics has to ensure that the contributions made by the parties of different energy efficiency policy measures are transferred to the state Energy Efficiency Fund. The Ministry of Economics has to administer the energy efficiency levy and also control utilisation of the financial resources from the national Energy Efficiency fund.

- *Target audience of policy measure*

The annotation of Regulation No.221 (CoM, 03.04.2017.) states that “given that companies have energy-efficiency potential, the acquisition of which would contribute to their modernisation and competitiveness, the support programmes of the Energy Efficiency Fund should be targeted at industry operators (small, medium-sized enterprises) to support them in the performance of energy efficiency measures”. However, it is not incorporated in the text of the Regulation, so other energy consumers may also be targeted.

- *Planned budget of policy measure*

For 2017 there was no expenditure on state or municipal budget planned. For 2018-2020, there is no exact calculation is available (CoM, 03.04.2017.)

The calculation and accounting of the financial resources used in Altum according to the eligible costs specified in the State aid programmes, including direct and indirect management costs of the fund, in accordance with the methodology for calculating the management costs of Altum, as well as the actual management costs of the national Energy Efficiency fund, amounting to 5% but not more than EUR 26 320 per year the amount of contributions made to the State Energy Efficiency Fund during the implementation and monitoring of the fund.

- *Planned savings of a policy measure*

National Energy Efficiency Fund managed by Altum has to use the resources to implement the State aid programme to achieve the mandatory energy end-use target, as well as the public information and education measures approved by the Ministry of Economics in the field of energy efficiency. In accordance with Paragraph 3.5.1 of the Altum Statutes, the fund has to be used for the implementation of State aid programmes approved by the Cabinet in the form of grants or financial instruments for the achievement of the mandatory energy end-use target (Altum, 25.09.2019.).

Municipality who has Energy Efficiency fund has to ensure implementation of energy savings according to the amount of the liability of the responsible party to the EEOS for which the contribution has been made.

- *Costs and financing of energy efficiency measures*

The financial sources of the state Energy Efficiency fund are:

- The contributions of the EEOS parties — annotation of CoM Regulation No.221 determines the contribution to the Energy Efficiency Fund by the EEOS responsible party to the Energy Efficiency Fund as 70 EUR per saved MWh, which is multiplied by the amount of the obligation imposed on the EEOS party. Saving costs are determined by the Ministry of Economics study Ex ante assessment of the availability of financing to improve energy efficiency in the manufacturing industry for the 2014-2020 programming period of European Union funds (CoM, 03.04.2017.). If the party responsible for setting up and implementing the EEOS complies with less than 80% of the amount of duty within the calendar year, the party responsible for the annual amount of energy savings has to contribute to the national Energy Efficiency fund 1.5 times the amount of the obligation of the party responsible for the EEOS or its share in megawatt hours, multiplied by EUR 70 per megawatt. Before the implementation of the Fund, Ministry of Economics assessed that the levy could make up to 90% of income for the Fund.
- the energy efficiency levy from the large companies and large electricity consumers who have not fulfilled their obligations - the rate of the fee is 7% of the electricity costs consumed in the previous year. These costs are calculated by multiplying the megawatt hours consumed in the year concerned by the average electricity price published by Eurostat in Latvia in the previous year (EUR/MWh).
- other revenues are coming from municipal energy efficiency funds who have not reached energy savings. They have to pay amount of the outstanding obligation multiplied by 1.5.

The party responsible for the contribution to the state Energy Efficiency Fund has to transfer the contribution to the State budget for the budget programme/sub-programme established for this purpose to the State Treasury and count as the institution's other own revenue. The relevant budget programme has to be administered by the Ministry of Economics. (COM, 03.04.2017.)

The resources of the State Energy Efficiency fund have to be used for the implementation of State aid programmes in the following areas:

- 1) the achievement of the mandatory final energy consumption target;
- 2) public information and education measures approved by the Ministry of Economics in the field of energy efficiency;
- 3) expenditure related to the management of the fund.

The financial source of the municipal energy efficiency fund are:

- 1) the budget of the municipality;
- 2) the contributions of the responsible party of the EEOS registered in the territory of the relevant municipality;
- 3) other financial sources.

The resources of the municipal energy efficiency fund has to be used for energy efficiency improvement measures in the following areas:

- 1) the achievement of the mandatory energy end-use savings target;
- 2) for the implementation of energy efficiency policy measures provided for in municipal planning documents;
- 3) the implementation and maintenance of the energy management system in the municipality.

The energy efficiency levy has to be used for:

- 1) the Ministry of Economics for monitoring and ensuring the achievement of energy efficiency objectives, as well as the maintenance of the energy savings database;
- 2) the State Energy Efficiency Fund.

The objectives of the use of the resources of the Energy Efficiency Fund are determined by the Energy Efficiency Law. Thus, if the energy savings transferred by the responsible party with the contribution are achieved with a lower amount of funding than the contribution of the responsible party, the Fund will be used for additional energy efficiency measures, in accordance with the Energy Efficiency Law. (CoM, 03.04.2017.)

The basic aid intensity cannot exceed 30% of the eligible costs, which may be increased by 20% for aid granted to small enterprises and by 10% for aid granted to medium-sized enterprises. It is therefore assumed that the maximum permitted aid intensity of the Energy Efficiency Fund is 50% of the total eligible costs of the project to be financed. (CoM, 03.04.2017.)

The operation of the State Energy Efficiency Fund has to be controlled by the Ministry of Economics in respect of the utilisation of the financial resources at its disposal.

- *Reporting energy savings*



By November 1 each year, municipalities have to submit to the Ministry of Economics information on the energy savings during the previous calendar year, as well as on the funding invested in energy efficiency improvement measures (see page Fig. 3.8).

Altum has to submit a report to the Ministry of Economics on the amount of energy efficiency programmes financed from the Fund in the preceding quarter by the 15 th day of the first month of the quarter.

Altum has to ensure, in accordance with the regulatory documents governing energy efficiency monitoring, the submission of an annual report on the energy efficiency improvement measures put in place and the energy savings resulting therefrom.

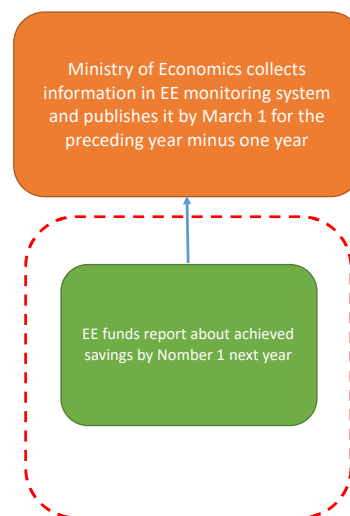


Fig. 3.8 Reporting of energy efficiency funds on the results achieved

### 3.6. Energy management of municipalities and national direct administrations

- *Policy measure objective*

The Energy Efficiency Law aims at the rational use and management of energy resources to promote sustainable economic development and to limit climate change. The objective mentioned in the annotation of the Law, is to ensure energy efficiency in energy production, distribution and final consumption, to ensure the availability of energy audits and regular, mandatory energy audits in large companies, as well as to promote the development of the market for energy efficiency services and to establish a national energy efficiency fund. (CoM, 2015)

The deployment of energy management in large municipalities and national direct administrations will bring an accumulated energy savings of 150 GWh between 2016 and 2020. (CoM, 24.05.2017.)

- *Operational period of the policy measure*

Energy Efficiency Law has entered into force on 29.03.2016 and is still in force.

- *Implementers of policy measure*

State authorities and municipalities have to:

- 1) develop and adopt an energy efficiency plan as a separate document or as part of a local government territory development programme, which includes specified energy efficiency objectives and measures;
- 2) introduce an energy management system separately or as part of the implementation of its energy efficiency plan;
- 3) use energy efficiency services and to enter into energy efficiency service contracts in order to implement energy efficiency improvement measures.

The municipalities of cities of the Republic has to introduce a certified energy management system.

Municipalities with an area development index of 0.5 or higher and a population of 10 000 or more and national direct administration authorities which own or possess buildings with a total heating area of 10 000 square metres or more have to implement an energy management system. The relevant system has to be implemented by the municipalities and the state direct administration authority within one year from the date of the accession of the referred to conditions.

National authorities and local authorities which are required to implement the energy management system may do so by:

- 1) the energy management standard (as a plan, in accordance with which to perform the implementation of the energy management system);
- 2) the methodological instructions published on the website of the Ministry of Economics for the implementation of the energy management system.

Thus, national authorities and municipalities have the choice to use standard LVS EN ISO 50001: 2018 standard (50001: 2018, 2018) or until then ISO 50001: 2012 (in which case the standard is to be purchased for a fee) or to create a set of energy management documents and processes using methodological instructions. Both the energy management standard LVS EN ISO 50001: 2018 (hereinafter referred to as the Energy Management Standard) and the methodological guidelines are applicable to all types and sizes of undertakings, organisations and municipalities, adjusting them accordingly so that they comply with the specific requirements in each case and the implementation of the energy management system over time would ensure an improvement in energy efficiency.

Section 4, Paragraph seven, Clause 1 of the Energy Efficiency Law stipulates that the responsible Ministry (Ministry of Economics) publishes methodological instructions for the implementation of the energy management system on its website. The purpose of the methodological instructions is to provide information that would help national authorities and local authorities to introduce an energy management system. The guidelines are intended primarily for municipalities with an area development-level index of 0.5 or higher and a population of 10000 or more, and for national direct management authorities in the ownership or possession of buildings with a total heating area of 10000 m<sup>2</sup> or more in order to facilitate the implementation process of the energy management system. (ME, 2017)

The energy management system has to be adequate for the energy consumption of an institution or municipality and include:

- overall energy savings targets or targets in individual sectors (e.g. heating of buildings and indoor lighting, street lighting, municipal transport. etc.);
- a commitment to introduce measures to continuously improve energy efficiency;
- a commitment to provide financial resources for achieving the agreed objectives;
- a commitment to ensure that energy consumption data is collected, processed and regularly informed the public about progress towards the stated objectives.

- *Target audience of policy measure*

Energy consumers owned by municipalities, public authorities.

- *Planned budget of policy measure*

No funding is provided from the state budget.

- *Planned savings of a policy measure*

With the introduction of energy management in large municipalities and national direct administrations, the estimated accumulated energy savings by 2020 are 150 GWh (CoM, 24.05.2017.).

- *Costs and financing of energy efficiency measures*

The energy management system should include a commitment to introduce measures to continuously improve energy efficiency (ME, 2017).

Evaluating projects which will be fully or partly implemented through payments from the state budget, state guarantees, loan interest rate subsidies or other financial assistance, which is granted or provided from the state or European Union budget funds and foreign financial assistance funds, state institutions and municipalities, the duty of which to implement in accordance with the provisions of this Law the energy management system and which have fulfilled this obligation has to increase the maximum number of points to be obtained in accordance with the quality assessment criteria, observing the procedures specified by the regulatory enactment regarding the allocation of the relevant funding.

- *Reporting on energy efficiency measures introduced*

In order to comply with the requirements of the Energy Efficiency Law, the municipality or the State direct administration authority must report on the implementation of the energy management system to the Ministry of Economics in accordance with Regulations No. 668 on Standard rules for energy efficiency monitoring and applicable energy management system. National direct administration authorities have to notify the Ministry of Economics by March 1 each year, in accordance with paragraph 23 of the Regulation No. 668, if they own buildings with a total surface area of 10000 m<sup>2</sup> or more on 1 January of the current year.

The State authority or municipality which has implemented the energy management system has to inform the responsible Ministry of each year regarding the energy savings resulting

from the operation of the energy management system. The procedures by which the State authority or municipality reports on the energy savings obtained are described in Regulations No. 668 (CoM, 11.10.2016) following the implementation of the energy management system (see Table Fig. 3.9).

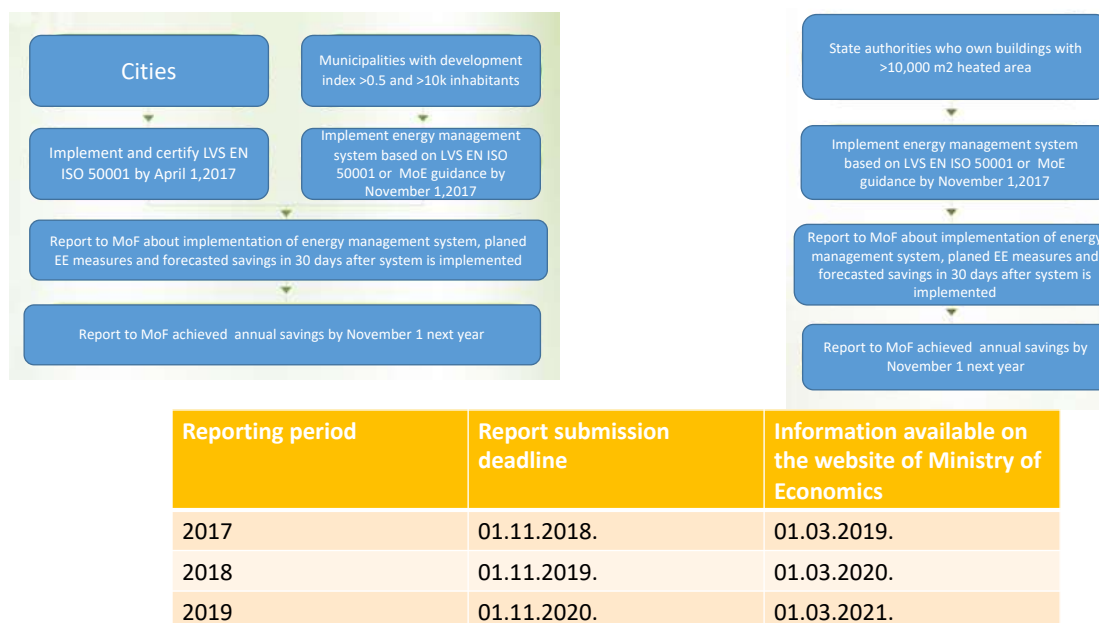


Fig. 3.9 Reporting on the results achieved in the municipal and public sector (ME, 2019)

### 3.7. Energy efficiency monitoring system

- *Policy measure objective*

The purpose of the Cabinet of Ministers Regulations No. 668 on Standard Rules for Energy Efficiency Monitoring and Applicable Energy Management System (CoM, 11.10.2016) is to ensure the collection of information on energy efficiency improvement measures, as well as the accounting for energy savings for the achievement of national energy efficiency targets (CoM, 06.09.2016).

- *Operational period of the policy measure*

Regulations No. 668 on Standard Rules for Energy Efficiency Monitoring and Applicable Energy Management System entered into force 01.11.2016 and remains in force.

- *Implementers of policy measure*

Responsible authority for the implementation is the Ministry of Economics and it is responsible for:

- developing and maintaining a catalogue of energy savings;
- developing methodological guidelines for calculating energy savings. One or more of the following methods can be used to calculate energy savings:
  - planned savings (ex-ante) method: calculating energy savings using energy savings catalogue data;

- reached savings (ex-post) method: calculating energy savings by measuring actual energy consumption and considering factors that may affect energy consumption;
- engineering method - calculation of energy savings by independent qualified or accredited experts in accordance with the requirements specified in other regulatory enactments;
- in the field of fiscal measures, the calculation has to be carried out by the responsible Ministry;
- consumer survey method (energy savings found in the survey or interview of energy end-users) - energy savings are calculated by assessing the change in the behaviour of energy end-users as a result of information, labelling of equipment, certification schemes and the introduction of smart commercial meters and other measures.
- administration of energy efficiency scheme for large energy consumers and large businesses;
- publishing the energy savings achieved by the responsible parties to the EEOS scheme once a year on its website;
- publishing by April 30 each year, a report on the implementation of the energy management system in national authorities and municipalities on its website;
- collecting each year by March 1 information on the national energy savings achieved in the year preceding the previous calendar year.

Energy efficiency monitoring has to include:

- statistical data on the energy sector, gross domestic product and population in the country;
- an analysis of primary energy consumption, including the operation of cogeneration plants;
- energy consumption analysis (where available), changes in the specific and general indicators and their assessment in each energy end-use sector and country as a whole;
- information on major energy efficiency measures in the previous calendar year and the energy savings achieved therein;
- information on the area of buildings in the ownership and use of State direct administration in the previous calendar year;
- information on energy savings achieved through the implementation of the EEOS.
- *Target audience policy measure*

Annotation of Regulations No. 668 (CoM, 06.09.2016) describes the target audience:

- National direct administration and municipalities. On March 1, 2016, Regulation No. 668 will affect 8 municipalities – Adazi, Babite, Kekava, Ozolnieki, Salaspils, Sigulda and Stopini, as well as 9 cities – Daugavpils, Jekabpils, Jelgava, Jurmala, Liepaja, Rezekne, Riga, Valmiera and Ventspils.
- State institutions (according to the information provided by the State authorities regarding the buildings owned by such authorities) in the ownership or possession of which, according to the list of state institutional buildings established by the Ministry of Economics, there are buildings with a total heating area of 10 000 m<sup>2</sup> and more - Ministry of Finance, Ministry of Interior Affairs, Ministry of Education and Science,

Ministry of Culture, Ministry, Ministry of Welfare, Ministry of Transport, Ministry of Justice, Ministry of Agriculture.

- Large enterprises employing more than 249 employees or with an annual turnover exceeding EUR 50 million and an annual balance of EUR 43 million. An estimated target group size of 229 companies.
- Large electricity consumers with annual electricity consumption exceeding 500 megawatt hours. Estimated size of target group: 1149 companies.
- System operators. Target group size: 2 companies.
- Energy retailers and distribution operators in EEOS. An estimated target group size of 1 to 16 companies (CoM, 06.09.2016.).
- The responsible authority which has granted the implementing body of energy efficiency improvement measures direct payment from the budget of the State or local government;
- The responsible authority which granted the national or municipality guarantee to implement energy efficiency improvement measures;
- The responsible authorities specified in Section 11, Paragraph one of the Management Act for the European Union Structural Funds and the Cohesion Fund for the 2014-2020 programming period;
- The responsible authority that has granted credit interest rate subsidies to energy efficiency improvement measures from State or local government funds;
- The responsible authority which has granted or provided other financial assistance from State or local government resources to implementors of energy efficiency improvement measures;
- The responsible authority which has granted the implementing body of energy efficiency improvement measures payments from the State or local government budget, State or local government guarantees, subsidy of interest rates of credit, as well as other financial assistance granted or provided from State, local government or European Union budget and foreign financial assistance funds for activities not directly present the aim is to improve energy efficiency, but contributes to it.

Energy savings may only include savings derived from:

- exceeding the ecodesign requirements for the withdrawal of certain energy-related products from the market for certain energy-related products (products);
- implementing energy efficiency policy measures;
- implementing policy measures that generate energy savings in addition to other benefits;
- the introduction of goods, services and equipment which comply with the regulatory enactments on energy labelling, ecodesign, standardisation and the safety of goods and services;
- from 1 January 2014;
- from fiscal measures (taxes and levies) above the EU minimum level of energy taxation, using the latest available data on demand (price) flexibility and separately accounting for savings from each fiscal measure;
- exceeding the standard emission level for new passenger cars as defined by Regulation (SC) No 443/2009 of the European Parliament and of the Council of 23 April 2009 establishing emission standards for new passenger cars and the emission standard level for new new passenger cars as part of the Community's integrated approach to reducing CO2 emissions from light vehicles for light commercial vehicles, by implementing Regulation (EU) No 510/2011 of the European Parliament and of the

Council of 11 May 2011 respectively on setting emission standards for new light commercial vehicles in the context of the Union's integrated approach to reducing CO<sub>2</sub> emissions from light-duty vehicles.

- *Planned budget of policy measure*

Regulation No. 668 annotation provides that the introduction of the rules will create an administrative burden for the Ministry of Economics, as well as an increased administrative burden for:

- cities;
- municipalities with an area development rate index of 0.5 or higher and a population of 10000 or more;
- national direct management authorities which own or possess buildings with a total heating area of 10000 square metres or more;
- large companies and large electricity customers.

The introduction of the Regulation will not change the administrative burden for the responsible authorities, since it provides a similar form of reporting as in the previously existing regulations where the responsible authorities have to report on energy savings.

Monetary assessment of administrative costs:

- Development and maintenance of the Energy Savings Catalogue: EUR 1740.00 (8.70 x 50) x (1 x 4);
- Guidance for calculation of energy savings: EUR 348.00 (EUR 8.70 x 40) x (1 x 1);
- Filling out the reporting form (for the Responsible Authority): EUR 1044.00 (EUR 8.70 x 40) x (3 x 1);
- Filling out the reporting form (for a large business, a large electricity consumer, a public authority, a municipality, a EEOS party, a public or municipal fund): EUR 1044.00 (8.70 x 40) x (3 x 1);
- Filling out the reporting form (to the public authority and municipality): EUR 8.70 (EUR 8.70 x 1) x (1 x 1);
- Notice to the Ministry of Economics of the State Direct Administration that buildings with a total area of 10 000 square metres or more are owned or held on January 1 of the current year: EUR 696.00 (EUR 8.70 x 40) x (2 x 1);
- filling out the reporting form (for the system operator): 208.80 (8.70 x 24) x (1 x 1);
- Publication of energy savings achieved by the EEOS party: €8.70 (€8.70 x 1) x (1 x 1).
- Total monetary assessment of administrative costs: EUR 5089.50. (CoM, 06.9.2016)

- *Reporting on energy efficiency measures*

In order for the information included in the energy savings reports to be reliable and energy savings to be verifiable and assessable, the information provider has to use only documented information (for example, heating and electricity bills, project implementation reports, contracts, reports, energy audits reports) when completing the reports in conformity with the Annexes to Regulation No.668. The information flow is shown in Fig. 3.10.

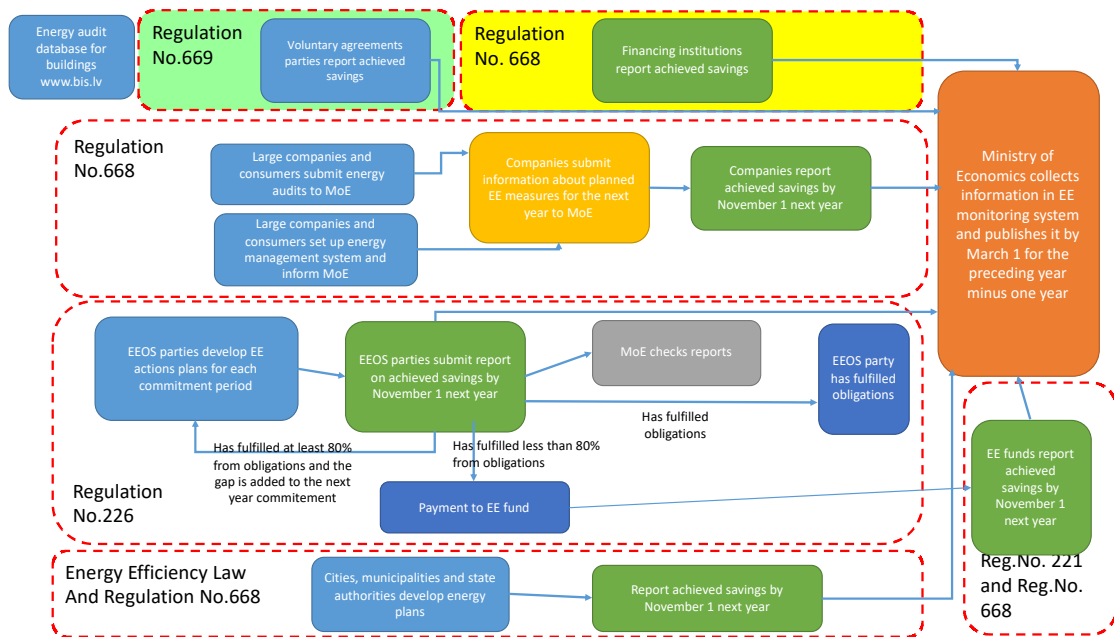


Fig. 3.10 Operational scheme of the energy efficiency monitoring system

The above-mentioned information providers will have to report annually on the measures taken to improve energy efficiency and the energy savings resulting therefrom (in megawatt hours) by completing reporting forms. In the absence of any energy efficiency improvement measures during the year, data applicants will have to submit a blank report.

The information providers referred to in paragraphs 10 and 11 of the Regulation No. 668 have to submit to the responsible Ministry, by November 1 each year, energy savings reports on the savings achieved in the energy efficiency improvement measures implemented in the preceding calendar year. Parties, which are not referred to in Paragraphs 10 and 11 of these Regulations, can voluntarily inform the Ministry responsible in conformity with Annex 2 of these Regulations regarding the energy savings achieved in the implemented energy efficiency improvement measures.

The state authority or municipality has to notify the responsible Ministry thereof within 30 days after the implementation of the energy management system in accordance with Annex 3 of these Regulations.

The state authority or municipality which has introduced a certified energy management system has to attach a copy of the relevant certificate to the notification referred to in Annex 3 of these Regulations.

The state authority or municipality, which has implemented but has not certified the energy management system, has to ensure the preparation and adoption of documentation certifying the implementation of the energy management system in accordance with Annexes 3 and 4 of these Regulations. The large companies or the large electricity consumer has to notify the responsible Ministry thereof within 30 days after the transfer and signature of the energy audit report in accordance with Annex 5 of these Regulations.



If a certified energy management system or an environmental management system has been introduced in a large company or a large electricity consumer, which has been supplemented in conformity with the requirements of regulatory enactments, the large company or the large electricity consumer has to notify the responsible Ministry within 30 days after the issuance of the relevant certificate in accordance with Annex 5 of these Regulations.

The state direct administration authority, has to notify the responsible Ministry thereof by March 1 of the current year. In the cases and in accordance with the procedures specified in the Law on State Administration Equipment, a state authority may delegate such duties to a public person capital company by February 1 of the current year, informing the Ministry responsible thereof. The national authority may agree with the manager of the premises it owns regarding the implementation of the energy management system.

A system operator, who has the rights and duties to perform electricity distribution or transmission, has to submit to the responsible Ministry, by January 31 each year, data (in accordance with Annexes 6 and 6.1 of the Regulations) regarding those companies connected to the system, the electricity consumption of which has exceeded 500 megawatt hours (MWh) in the previous year. The responsible Ministry has to keep the information provided by the system operator, ensuring the protection of commercial information.

## 4. IMPLEMENTATION OF ENERGY EFFICIENCY POLICY

This chapter describes the process of implementing each policy measure on the basis of a theory-based policy analysis combined with the The Better Regulation Agenda criteria. In the policy analysis graphs in the following chapters the leverage points of each policy measure are represented in pink.

### 4.1. Energy Efficiency Obligation Scheme

Figure 4.1 shows a theory-based policy analysis graph for the EEOS. Causation shows the sequence of how a policy measure is being implemented and how actions follow each other, creating a chain of causes and effects based on existing policy documents. It starts with the climate and energy objectives set by the EU, the requirements of which are embedded in Directive 2012/27/EU (EU, 2012). The requirements of the Directive are taken over in Latvia by the Energy Efficiency Law (Saeima, 29.03.2016). Based on that Cabinet of Ministers has issued Regulation No.226 (CoM, 25.04.2017). It stipulates that the Ministry of Economics determines the parties and criteria to be included in the EEOS for each commitment period, as well as the scope of the obligation. Companies included in the EEOS have to prepare a plan for energy efficiency improvement measures and submit it to the Ministry of Economics, which has to perform the verification of the conformity of the plans in accordance with paragraphs 7, 10 and 19 of the Regulations and, if necessary, inform the participants in writing regarding the non-compliance of the plan with the requirements. Parties have to submit the modified plan of measures and/or the amount of contributions to the Energy Efficiency Fund to the Ministry of Economics. This is followed by a report from EEOS parties to the Ministry of Economics on the energy savings obtained during the starting period. Each year, EEOS parties report to the Ministry of Economics on the savings achieved. If an EEOS party has fulfilled at least 80% of the amount of duty, the missing part has to be added to the amount of next year's obligation. On the other hand, if a party has fulfilled less than 80% of the amount of the obligation, it has to contribute EUR 105 to the Energy Efficiency fund for each unsaved megawatt hour. If a party has fulfilled more than 100% of the amount of the obligation, the excess part has to be removed from the amount of the obligation for the following year. The Ministry of Economics has the right to perform a sampling of the reported savings. The Ministry of Economics has to insert information regarding annual savings into the energy efficiency monitoring system.

Actions represented in causation are linked to other policy measures/instruments. Cabinet of Ministers Order No.257 (CoM, 24.05.2017.) includes the Latvian Energy Efficiency Action Plan, and EEOS is one of the policy measures that ensure the achievement of Latvia's objectives. Regulation No. 668 (CoM, 11.10.2016) includes information on the inclusion of information submitted by EEOS in the national energy efficiency monitoring system.

For the most important cause-to-effect relationship, indicators are established to measure whether the cause-to-effect has actually occurred and to measure whether the changes occurred (or part thereof) were affected by the policy measure. In addition, any success or failure factors increase or decrease the values of the indicators. The number of participants and their total amount of energy sold (GWh/year) are used as indicators for the analysis of the participants and criteria included in the EEOS during each commitment period. The total amount of energy savings planned by all participants (GWh/year) is an indicator for the amount of the EEOS party's duty as determined by the Ministry of Economics. The number of energy efficiency plans approved by the Ministry of Economics and the planned amount of contributions to the Energy Efficiency fund describe the process of submitting energy efficiency action plans to the Ministry

of Economics and what part of the EEOS obligation will be carried out by the responsible parties to the EEOS and what part they entrust to the Energy Efficiency fund. As a factor of success or failure affecting the values of both indicators, the knowledge and understanding of the EEOS party on energy efficiency measures and implementation and the possibilities to implement them. Two indicators are used to assess the savings of the starting period: reduced energy consumption each year and accumulated savings during the starting period. Failures/success factors are similar to previous indicators: the knowledge and understanding of the EEOS party on energy efficiency measures and their implementation, as well as the possibilities to implement them. For an analysis of the savings reported annually by EEOS parties, energy savings (GWh/year), accumulated energy savings (GWh), the ratio of the actual annual energy savings to the expected, actual accumulated energy savings ratio to planned, estimated savings from information measures, estimated savings from others the measures and the amount of investment planned. The values of these indicators are influenced by two success/failure factors: the possibility and capability of EEOS parties to convince energy end-users of the implementation of EE measures, and the knowledge, understanding of EE measures, implementation and the possibilities to implement them. The annual contribution to the Energy Efficiency fund for the outstanding amount of the obligation reflects the dynamics of the contributions. The amount of the contribution depends on the possibility and capacity of EEOS parties to convince energy end-users of the implementation of energy efficiency measures, and on the knowledge and understanding of the EEOS parties of energy efficiency measures, their implementation and the possibilities to implement them. Ministry of Economics checks the reported savings on a random basis and this process is characterised by the number of reports checked. Success or failure depend on the resources and capacity available to carry out the verification.

The leverage point in the EEOS scheme is the possibilities and capabilities of the parties responsible for the EEOS to convince energy end-users of the implementation of energy efficiency measures, as well as the knowledge, understanding of energy efficiency measures, their implementation and the possibilities to implement them.

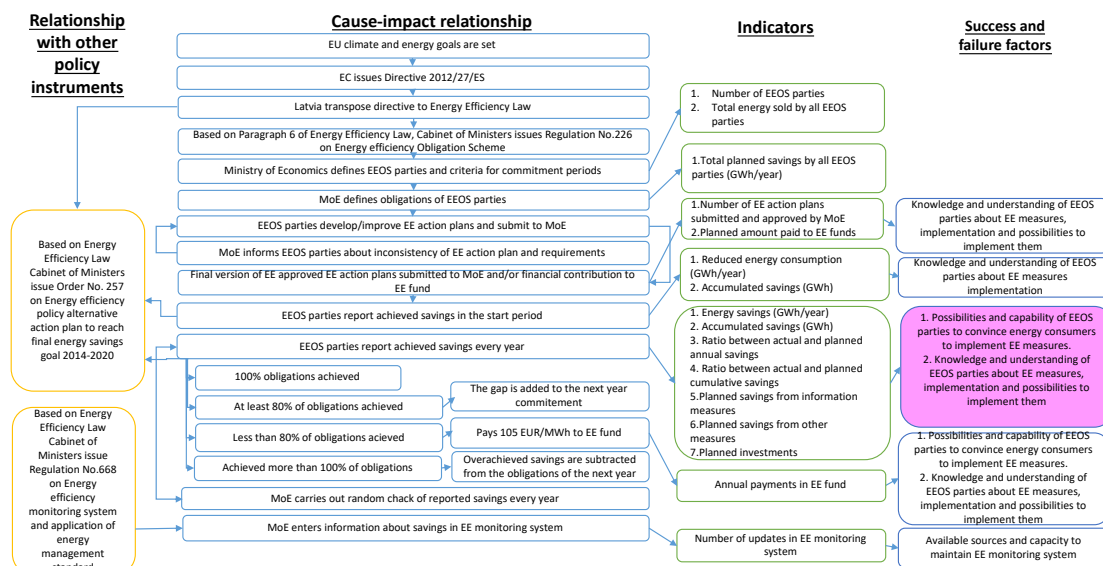


Fig. 4.1 Theory-based policy analysis graph for energy efficiency obligation scheme

The policy analysis graph for the EEOS presented in Fig.4.1 has been transformed into a survey form for collecting and analyzing data and information from the EEOS parties. It is

combined with the evaluation criteria set out in The Better Regulation Agenda (SC, 14.09.2016). For more details see Annex 1.

## 4.2. Voluntary agreement

Figure 4.2 shows a theory-based policy analysis graph for the implementation of the voluntary agreement. Causation shows the sequence of how a policy measure is being implemented and how actions follow each other, creating a chain of causes and effects based on existing policy documents. It starts with the climate and energy objectives set by the EU, the requirements of which are embedded in Directive 2012/27/EU (EU, 2012). The requirements of the Directive are taken over in Latvia by the Energy Efficiency Law (Saeima, 29.03.2016). The Law has a link to Cabinet of Ministers Order No. 257 (CoM, 24.05.2017.), which includes the Latvian Energy Efficiency Action Plan, and this policy measure is one of the policy measures that ensure the achievement of Latvia's objectives. It has underlying Cabinet of Ministers Regulation No. 669 (CoM, 11.10.2016), which stipulates that the arrangements for concluding and monitoring voluntary agreements on energy efficiency improvements are in place. The first step has to be taken by the Ministry of Economics to inform companies, their organisations and local authorities about this policy measure. This step is described by an indicator describing the number of informed companies, their organisations and local authorities, and the success or failure of their fulfilment depends on the resources and capacity available for publicity at Ministry of Economics disposal. This is followed by the conclusion of the voluntary agreement and the preparation of the energy efficiency plan. This step is characterised by the number of agreements concluded and the planned annual energy savings. The success/failure factor that determines whether this step will succeed is defining financial support from the national budget or the national energy efficiency fund. Following the conclusion of the agreement, the contracting parties have to report on the savings achieved, expressed in terms of the actual annual energy savings and the savings accumulated. How much will actually be saved and accumulated depends on the knowledge of the contractors, the understanding of energy efficiency measures and their implementation. Subsequently, the Ministry of Economics has to publish annually information on the agreements and the savings achieved by them in the register of agreements. The success of managing an agreement register and collecting data depends on the resources and capacity available to the Ministry of Economics. This phase is linked to Regulation No.668 (CoM, 11.10.2016), which includes information on the inclusion of information submitted by companies in the national energy efficiency monitoring system.

The leverage point in the voluntary agreement policy measure is whether the participants in the agreement actually have access to the financial support provided from the state budget or the national energy efficiency fund. If there is no such “carrot”, the policy measure cannot achieve the objectives.

## Brīvprātīgā vienošanās

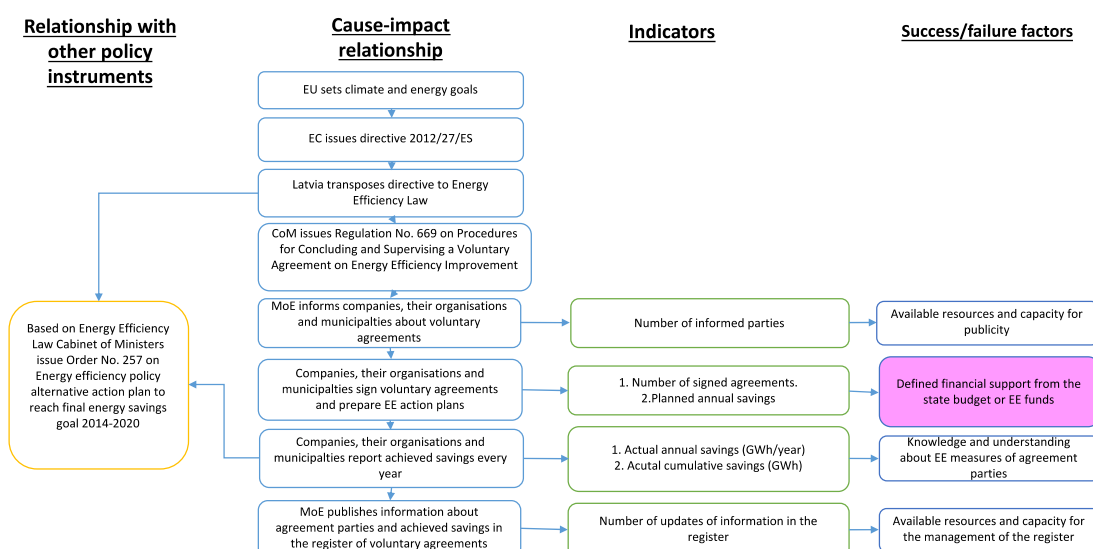


Fig.4.2. Theory-based policy analysis graph for implementation of voluntary agreement

The policy analysis graph of the implementation of the voluntary agreement shown in Figure 4.2. has been transformed and combined with criteria from The Better Regulation Agenda (SC, 14.09.2016) into a survey form for collecting and analysing data. For more details see Annex 2.

### 4.3. Energy audit and energy management in large companies and electricity consumers

Figure 4.3 shows a theory based policy analysis graph for improving energy efficiency in large companies and energy consumers. Causation shows the sequence of how a policy measure is being implemented and how actions follow each other, creating a chain of causes and effects based on existing policy documents. It starts with the climate and energy objectives set by the EU, the requirements of which are embedded in Directive 2012/27/EU (EU, 2012). The requirements of the Directive are taken over in Latvia by the Energy Efficiency Law (Saeima, 29.03.2016). Chapter IV of the Law sets out requirements for large companies and large electricity consumers that have to ensure energy efficiency improvements. This article has a link to Regulations No. 257 (CoM, 24.05.2017.), which includes the Latvian Energy Efficiency Action Plan, and this policy measure is one of the policy measures that ensure the achievement of Latvia's objectives.

In the first phase, large companies and electricity consumers carry out energy audits or introduce a certified energy management system or introduce a certified environmental management system and report to the Ministry of Economics. Four indicators are used to assess this phase: the number of large companies and electricity consumers with energy audits, the number of large companies and electricity consumers with a certified energy management/environmental management system, the total energy consumption of all participants, the total energy savings projected by all participants (GWh/year). The success or failure of this phase is determined by two factors: whether the company has an energy/resource consumption record and how reliable data on resource/energy records are. Those companies which fail to comply with their obligations under the legislation has to pay the energy efficiency

levy. The indicator at this stage is the annual amount of contributions and its size depends on the knowledge of employees, the understanding of energy efficiency measures and their implementation and the feasibility of introducing them. In the next phase, large companies and electricity consumers report to the Ministry of Economics on planned energy efficiency improvement measures. The expected amount of energy savings (GWh/year) is used as an indicator. The size of this parameter depends on the knowledge of energy auditors about energy efficiency measures in companies, the knowledge of company employees, the understanding of energy efficiency measures and their implementation and the feasibility of introducing them, the cooperation between the energy auditor and the company, or the measurement. In the next phase, energy audits are scheduled to be carried out every four years. This is characterised by the estimated amount of energy savings (GWh/year) and depends on the energy audit knowledge and energy efficiency measures in companies and the knowledge of employees, the understanding and implementation of energy efficiency measures and the feasibility of introducing them. This is followed by the next step which introduces at least three energy audit/certified energy management systems/certified environmental management systems proposed energy efficiency improvement measures with the highest estimated energy savings or economic returns. At this stage, three indicators are used: a list of planned energy efficiency measures, the costs of planned energy efficiency measures and the estimated amount of energy savings (GWh/year). The success or failure of this phase depends on the knowledge of employees, the understanding of energy efficiency measures and their implementation and the feasibility of introducing them. Large companies and energy consumers then report annually to the the Ministry of Economics on the energy efficiency measures put in place and the resulting energy savings. This is characterised by actual energy savings (GWh/year), actual accumulated energy savings (GWh), the ratio of actual annual energy savings to planned and actual accumulated energy savings to planned. Success or failures depend on the knowledge, understanding and implementation of energy efficiency measures by employees, and on how to implement them. In conclusion, the Ministry of Economics has to include information on the savings achieved in the energy efficiency monitoring system and has to be characterised by the renewal of information in the once energy efficiency monitoring system, which depends on the resources and capacity available to the Ministry of Economics. This phase is linked to Regulation No.668 (CoM, 11.10.2016), which includes information on the inclusion of information submitted by companies in the national energy efficiency monitoring system.

The leverage points for energy efficiency improvements in large companies and electricity consumers is in four places: (1) the knowledge of energy auditors about energy efficiency measures in companies, (2) the knowledge of employees of companies, the understanding and implementation of energy efficiency measures and their feasibility, (3) cooperation between energy auditors and business and (4) measurements.

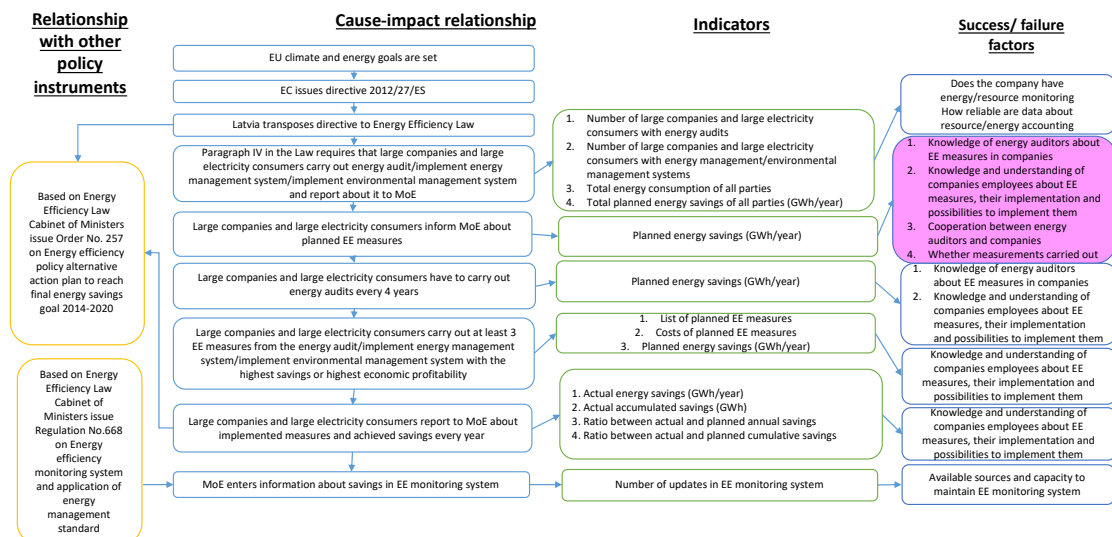


Fig. 4.3 Theory-based policy analysis graph for improving energy efficiency in large companies and electricity consumers

The policy analysis graph for improving energy efficiency for large companies and electricity consumers presented in Fig.4.3 has been combined with criteria from The Better Regulation Agenda (SC, 14.09.2016) and transformed into a survey form for collecting and analysing data and information.

#### 4.4. Energy efficiency funds

Figure 4.4 shows a theory-based policy analysis graph for Energy Efficiency funds. Causation shows the sequence of how a policy measure is being implemented and how actions follow each other, creating a chain of causes and effects based on existing policy documents. It starts with the climate and energy objectives set by the EU, the requirements of which are embedded in Directive 2012/27/EU (EU, 2012). The requirements of the Directive are taken over in Latvia by the Energy Efficiency Law (Saeima, 29.03.2016). The requirements of the Energy Efficiency Law on Energy Efficiency funds are introduced by Regulation No.221 on Regulations Regarding the Procedures by which Contributions are Made in Energy Efficiency Funds, and their Amount, as well as the Use of the Resources of the Energy Efficiency Fund (CoM, 25.04.2017.). This Regulation have a link to Cabinet of Ministers Order No.257 (CoM, 24.05.2017.), which includes the Latvian Energy Efficiency Action Plan, and this policy measure is one of the policy measures that ensure the achievement of Latvia's objectives if the commitments are not fulfilled by EEOS or large companies or large electricity consumers.

The first step requires that an EEOS member, after submitting the EE Improvement Measures Plan to the Ministry of Economics, declare the amount of the energy savings obligation it intends to contribute to, or contribute to the Energy Efficiency Funds by the EEOS responsible parties if they are unable to meet their full commitments and meet them by less than 80% on the basis of the the Ministry of Economics decision on the amount of the contribution, as well as the national budget, offset the energy efficiency levy paid by defaulting large companies and large electricity consumers. This stage is characterised by the annual amount of contributions. Whether this stage is successful or not is determined by the knowledge of the parties involved, the understanding of energy efficiency measures, their implementation and their feasibility, and the resources and capacity available to the the Ministry of Economics for administration. The next step is if one of the contributors has contributed to municipal energy efficiency funds and

municipal funds report to the Ministry of Economics on the planned energy efficiency measures in the amount of the contributions made. The planned energy savings (GWh/year) are used as an indicator for this step. The success of this step depends on the knowledge of local authorities, the understanding of energy efficiency measures, their implementation and the feasibility of introducing them. Municipalities then take the planned measures. In the next step, those municipalities that have failed to accomplish their planned obligation has to contribute to the amount of 1.5 of their outstanding commitments to the National Energy Efficiency Fund. The indicator for this stage is the annual amount paid and its size depends on the knowledge of local government energy efficiency funds, the understanding of energy efficiency measures, their implementation and their feasibility, and on the resources and capacity available for administration. Subsequently, the municipality has to submit annually to the the Ministry of Economics information regarding the energy savings from the savings achieved by the energy efficiency improvement measures implemented within the municipal energy efficiency fund during the previous year, and the funding invested. At this stage, a number of indicators are used: energy savings (GWh/year), accumulated energy savings (GWh), the ratio of actual annual energy savings to planned and actual accumulated energy savings to planned. Success factors are the expertise of the municipal energy efficiency funds, the understanding of the energy efficiency measures, their implementation and their feasibility to implement and the resources and capacity available for administration. The funds collected by Altum from the EEOS and energy efficiency levies transfered to the National Energy Efficiency Fund has to be used for (1) implementing a State aid programme to achieve the mandatory energy end-use target, (2) public awareness measures approved by the Ministry of Economics in the field of energy efficiency (3) to cover the costs associated with the management of the fund. This step is characterised by (1) the planned annual energy savings and costs of the State aid programme, (2) the planned information costs and the annual energy savings and (3) the planned costs of the fund. Progress at this stage depends on the available resources and capacity to build State aid programmes, the resources and capacity available to the Ministry of Economics to target information measures and the resources and capacity available to Altum. Altum has to then draw up an annual report on the implemented measures to improve energy efficiency and the energy savings achieved. Indicators cover energy savings (GWh/year), storage of saved energy (GWh), actual annual energy savings ratio to planned and actual accumulated energy savings ratio. The success factor is the resources and capacity available for Altum administration. In the last step, the Ministry of Economics inserts information on the savings achieved in the energy efficiency monitoring system. The indicator is the update of information in the energy efficiency monitoring system and the success depends on the resources and capacity available to maintain the energy efficiency monitoring system.

The leverage point for this policy measure lies in the case of municipal energy efficiency funds in the expertise of local government energy efficiency funds, the understanding of energy efficiency measures, their implementation and the feasibility to implement them and the resources and capacity available to administer the fund. On the other hand, in the case of the National Energy Efficiency Fund, these are the available resources and capacity for the development of State aid programmes, the resources and capacity available to the Ministry of Economics for the development of well targeted information measures and the resources and capacity available to Altum.



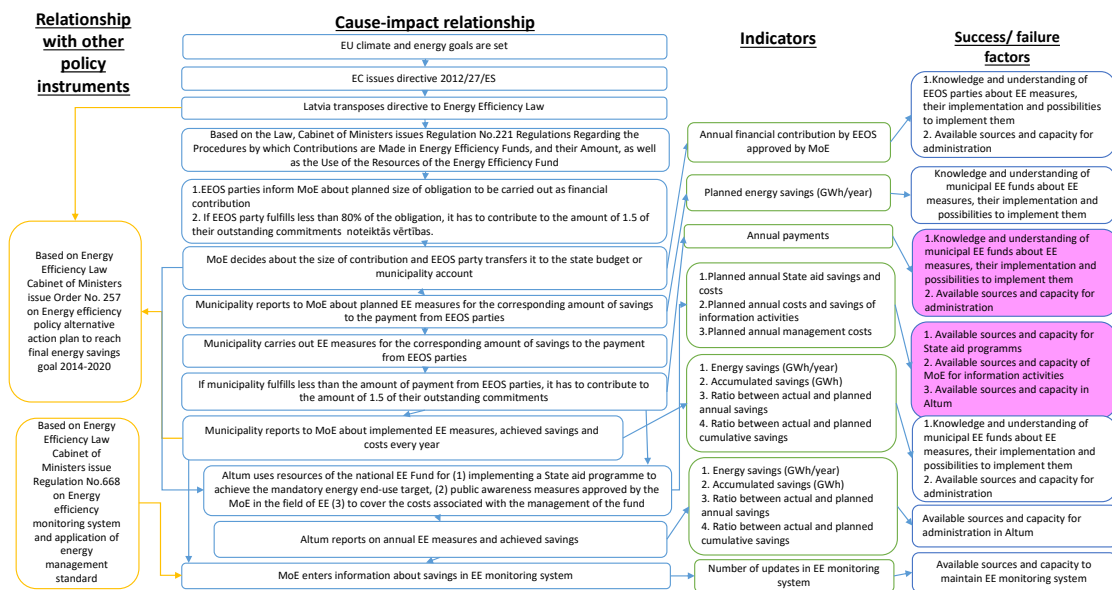


Fig. 4.4. Theory based policy analysis graph for energy efficiency funds

## 4.5. Energy management of municipalities and national direct administrations

Figure 4.5 shows a theory-based policy analysis graph for the introduction of energy management by municipalities and national direct management authorities. Causation shows the sequence of how a policy measure is being implemented and how actions follow each other, creating a chain of causes and effects based on existing policy documents. It starts with the climate and energy objectives set by the EU, the requirements of which are embedded in Directive 2012/27/EU (EU, 2012). The requirements of the Directive are taken over in Latvia by the Energy Efficiency Law (Saeima, 29.03.2016). According to Section 5 of the Law, the rights and obligations has to be determined for municipalities and State direct administration authorities. The Law stipulates that large cities implement a certified energy management system, while municipalities with more than 10000 inhabitants and a development index above 0.5 and national direct management authorities with an area above 10000 m<sup>2</sup> introduce an energy management system and report to the Ministry of Economics. Subsequently, the parties concerned has to report annually on the savings achieved, which has to then be placed in the the Ministry of Economics system for energy efficiency monitoring in accordance with Regulation No. 668. The resulting amount of energy savings is aligned with the Energy Efficiency Policy Alternative Action Plan for achieving the energy end-use savings target for 2014-2020. The indicators describing the development of energy management dynamics are the number of certificates submitted by the Ministry of Economics. The total estimated energy savings represent the level of activity of the parties involved. The factors determining whether this policy action will be successful or unsuccessful include the knowledge of State and local government employees, the understanding and implementation of EE measures and the possibilities to implement them. Indicators describing the savings achieved are actual energy savings (GWh/year), actual accumulated energy savings (GWh) and investment volumes. The values of these parameters also depend on the knowledge of national and municipal employees, the understanding and implementation of EE measures, and the possibility of introducing them. An indicator describing the operation of the energy efficiency monitoring system has to be the annual update of information in the system, the implementation of which depends on the resources and capacity available to the system.

The leverage is the knowledge of State and municipal personnel, the understanding and implementation of EE measures, the possibility to implement them.

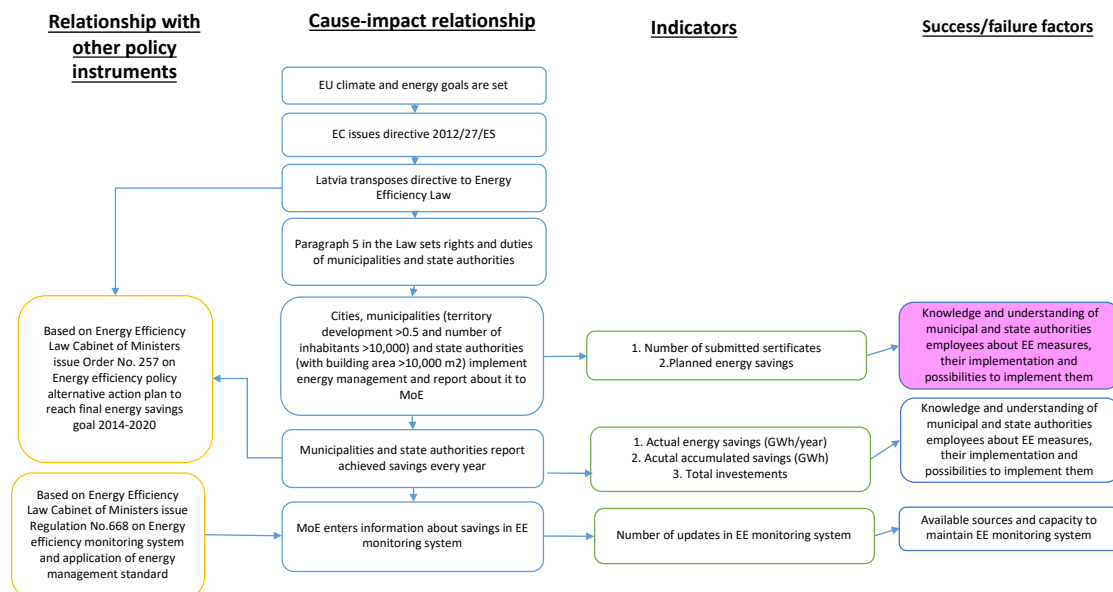


Fig. 4.5 Theory-based policy analysis graph for the implementation of energy management by municipalities and national direct management authorities

The policy analysis graph for the implementation of energy management by municipalities and national direct management authorities has been modified in the survey form required for data and information collection and analysis, which is combined with the assessment criteria set out in The Better Regulation Agenda (SC, 14.9.2016). For more details see Annex 3.

## 4.6. Energy efficiency monitoring system

Figure 4.6 shows a theory-based policy analysis graph for the implementation of the energy efficiency monitoring system. Causation shows the sequence of how a policy measure is being implemented and how actions follow each other, creating a chain of causes and relationships based on existing policy documents. The start of the policy action is the EU's climate and energy objectives, the requirements of which are embedded in Directive 2012/27/EU (EU, 2012). The requirements of the Directive are taken over in Latvia by the Energy Efficiency Law (Saeima, 29.03.2016). This is subject to Regulation No.668 on Standard rules for energy efficiency monitoring and applicable energy management system (CoM, 11.10.2016). The first step in implementing this policy provides, that the Ministry of Economics has to establish a catalogue of energy savings and methodological rules for calculating energy savings. The indicators describing these two measures are documents and updates. Whether this measure is successful depends on the competence, capacity and available resources of the Ministry of Economics. In parallel, the financing of energy efficiency projects, EEOS, large companies, large electricity consumers, municipalities, state direct government bodies, participants in the voluntary agreement has to provide the Ministry of Economics with information on the planned measures. As indicators for this step, the number of plans submitted, the planned energy savings (GWh/year) and the expected cumulative savings (GWh) are used. The success or failure factor is the knowledge of the parties involved, the understanding and implementation of energy efficiency measures. In the next step, the financing of energy efficiency projects, EEOS, large companies, large electricity consumers, municipalities, national direct government bodies,

participants in voluntary agreements report annually on the savings achieved. Indicators for evaluating this step are the number of reports submitted, actual energy savings (GWh/year) and actual cumulative savings (GWh). The values of these indicators depend on the knowledge of the stakeholders, the understanding and implementation of energy efficiency measures. The the Ministry of Economics has to then insert information on the savings achieved in the energy efficiency monitoring system. This activity is characterised by the annual update of information in the energy efficiency monitoring system and whether this operation is successful depending on the adequacy of the Ministry of Economics resources and capacity. The data collected are used in the analysis of the savings achieved by the Ministry of Economics. the Ministry of Economics available expertise, resources and capacity determine how successful or unsuccessful this step will be. In the last step, the Ministry of Economics publishes the information on the home page once a year, and the indicator for this action is on the home page of the time the information is restored. Its frequency depends on the resources and capacity available to the Ministry of Economics.

The leverage points are the professional competence, resources and capacity available to the Ministry of Economics, located in different places of the causal chain.

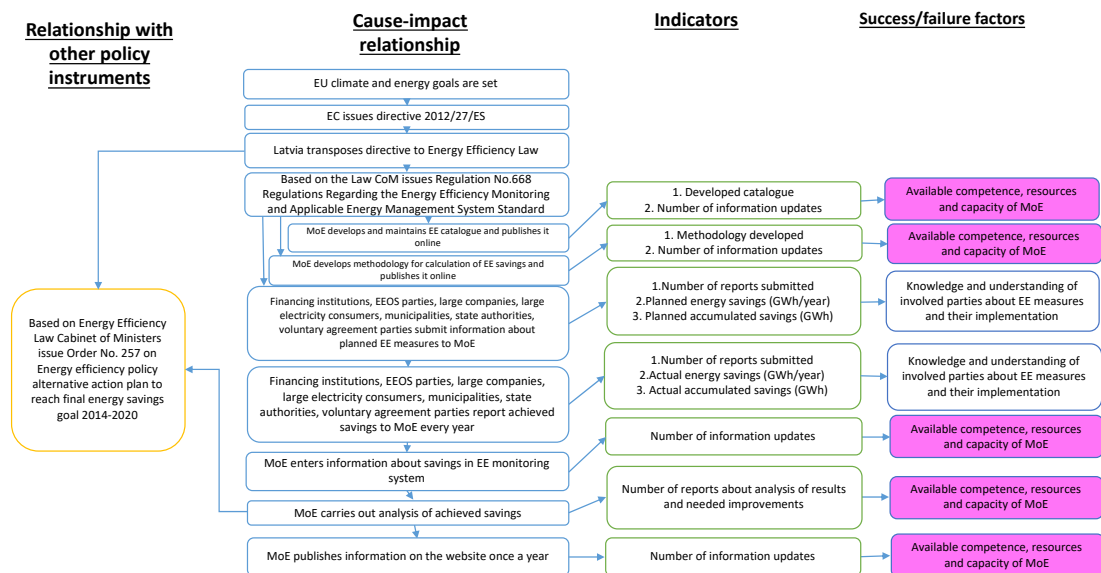


Fig. 4.6 Theory-based policy analysis chart for the implementation of the energy efficiency monitoring system

The policy analysis graph for the implementation of the energy efficiency monitoring system has been transformed into a form for collecting and analysing data and information, which is combined with the evaluation criteria set out in The Better Regulation Agenda (SC, 14.09.2016).

## 5. ANALYSIS OF ENERGY EFFICIENCY POLICY MEASURES

This chapter contains an analysis of the policies to be further used to establish the conclusions reflected in Chapter 6. The analysis is based on a theory-based policy analysis combined with the The Better Regulation Agenda criteria and the key factors described in the introduction to this study, as illustrated in Figure 1.1, and based on information derived from different sources of information.

### 5.1. Energy Efficiency Obligations scheme

In the scope of this project, the information from the Ministry of Economics was requested by letter No 04000-2.2.2-e/327 (16.10.2019.), but no response to the request was received until the report was submitted. The analysis is therefore based on:

- information available on the the Ministry of Economics website;
- the information provided in interviews of the parties responsible for the EEOS;
- Information available on the websites of the responsible parties to the EEOS.

#### Effectiveness

In December 2019, information published on the the Ministry of Economics website shows that there are 15 EEOS parties in Latvia: AJ Power, Alexela, Deco Energy Ltd, Enefit, Enerty, ESC Systems, Geton Energy, Imlitex Latvija, InternRao Latvia, AS Latvenergo, AS Latvijas Valsts Dzelzceļš, Scener, Rto elektrotikli, AS International Airport Riga, SIA TET (see screenshot in Fig. 5.1). Not all of the listed EEOS parties sell energy to households and small and medium-sized enterprises. Most of the savings planned by EEOS lie on AS Latvenergo.



The screenshot shows a list of 15 EEOS parties in Latvia, titled "EĢS atbilstīgo puošu enerģijas ražošanas uzdevumi (izvērtēti 2019.g.)". The list includes the following companies:

AJ POWER SIA
ALEXELA SIA
DECO ENERGY SIA
ENEFIT SIA
ENERTY SIA
ESC SISTEMAS SIA
GETON ENERGY SIA
IMLITEX LATVIJA SIA
INTERN RAO LATVIA SIA
LATVENERGO AS
LATVIJAS DZELZCEĻŠ VALSTS AS
RTO ELEKTROTIKLI SIA
SCENER SIA
STARPTAUTISKĀ LIDOSTA "RIGA" VALSTS AS
TET SIA

Fig. 5.1. Screenshot from Ministry of Economics website (ME, 2019)

The objectives of this policy measure are 1) to put in practice EEOS and 2) to achieve total accumulated energy savings of 234 GWh as a result of the introduction of the EEOS, or 2.4% of Latvia's mandatory 2016-2020 target (COM, 21.03.2017), (COM, 24.05.2017.).

The total amount of electricity sold by all EEOS responsible parties is variable because new entrants who meet EEOS requirements appear annually, but not all EEOS responsible parties sell electricity to households and small and medium-sized enterprises.

In the report on progress towards the national energy efficiency target for 2020, the annual implementation for 2017, in accordance with the requirements of Article 24(1) of Directive 2012/27/EU and Part 1 of Annex XIV (ME, 2019), the estimated savings achieved by the EEOS during the starting period (2014-2017) are presented in Table 5.1. It shows that the savings reported during the starting period are below target, while the estimated cumulative savings (392.2 GWh) are higher by 68% than the savings planned at the beginning of the measure (234 GWh).

Table 5.1

Energy savings achieved by the EEOS parties during the starting period (ME, 2019)

Activity	New savings in 2014, GWh	New savings in 2015, GWh	New savings in 2016, GWh	New savings in 2017, GWh	Cumulative savings in 2020, GWh
Information activities on energy efficiency	3,4	23,5	21,8	106	154,7
Setting up smart meters	5	5,5	13,7	10	68,4
Other measures	0,003	0	0,04	26,7	106,1
<b>Total</b>	<b>8,4</b>	<b>29</b>	<b>35,5</b>	<b>142,7</b>	<b>329,2</b>

Energy utility Latvenergo has reported savings in 2018 of 155 GWh over their life cycle. (Elektrum, 2019)

The Ministry of Economics forecasted that 50% of the total EEOS savings will be derived from information and education measures and 50% through contributions to the national Energy Efficiency fund or by implementing the most expensive possible measures, the costs of which are equivalent to the contribution to the fund (CoM, 21.03.2017.). Surveys of EEOS participants show that companies have provided key savings in their energy efficiency measures implementation plans for informational measures, a small part of the introduction of energy efficiency measures to consumers and not to contribute to the Energy Efficiency Fund. The estimated breakdown of actual measures by group of measures is:

- awareness-raising activities (representing around 95% of total savings):
  - information in mass media
  - organised seminars
  - individual advice on the EEOS responsible side
  - individual consumer advice
  - participation in exhibitions, seminars, festivals, etc.
  - home page information
  - e-mails
- sale of energy-efficient technologies in an Internet store (representing around 5% of total savings) to an interest-free loan; direct sale of energy-efficient technologies to energy consumers through a distributed payment, by concluding an agreement that energy savings will be reported by an EEOS member.

Information to small and medium-sized enterprises is dominated by mass media (around 80%) and the rest of the information is passed through the other information channels. Information in mass media (around 90%) also dominates the household sector.

In assessing the possibilities and capabilities of EEOS parties to convince energy end-users of the implementation of energy efficiency measures, the EEOS parties provided the following information:

- they perform surveys of target audience on what are the main reasons for selecting an energy efficiency measure and then take targeted actions based on the results of the surveys. The surveys conclude that major barriers are related to costs and a lack of information.
- General marketing techniques are used to promote energy efficiency measures.
- On the home page or directly to customers, energy-efficient products are offered for a distributed payment.

The expertise, understanding and feasibility of energy efficiency measures and their implementation have a significant impact on both the development and implementation of a plan for energy efficiency improvement measures. The interviews indicated that the EEOS parties have strengthened their businesses with employees who has expertise in the field of energy efficiency, thereby reducing the risk of not reaching the target. In interviews, the EEOS responsible parties mentioned that the company's employees developed plans for energy efficiency improvement measures. The calculation was based on the Ministry of Economics energy efficiency catalogue, calculating the efficiency and cost of each measure. Surveys of the parties responsible for the EEOS show that the main criterion for deciding which measure to implement is the cost (EUR per MWh saved). The same employees are also responsible for achieving the targets. The EEOS parties whose knowledge of energy efficiency measures and their implementation is sufficiently deep aim to introduce measures as planned in the Energy Efficiency Improvement Action Plan and to adjust their actions depending on changes in reality.

On July 16, 2019, the Ministry of Economics published an information report On possible solutions to the problem of the electricity mandatory procurement component and functions for the implementation of energy policy (ME, 16.07.2019.), which concludes that “currently the performance of the functions of management of the EEOS is carried out by the Ministry of Economics (Department of Energy Policy Administration), but that these functions are not fully achieved by the lack of capacity. All reports received are currently being compiled as far as possible, but no qualitative and detailed evaluation and analysis of these reports is being carried out. No dialogue with the responsible parties on the information contained in the report and its revisions, if such a need is identified is carried out. It is concluded that a number of functions and tasks should be started as soon as possible or continued to perform in much greater capacity and to extent to prevent the situation of the European Commission imposing sanctions on the Republic of Latvia in the event of non-implementation and non-compliance of EU legislation, for example in relation to transport energy conditions and monitoring of performance of energy efficiency obligations.

## Efficiency

The majority of EEOS parties have not published information on their home pages on the cost of the measures taken as determined by the Regulation. The information available on the home page of the Latvenergo Energy Efficiency Centre shows that:

- The costs of informative measures to improve energy efficiency implemented in 2018 are EUR 327 624, of which EUR 262 100 applies to households and €65 524 to other users. These costs are included in the operating costs of Latvenergo.
- households have purchased energy efficiency equipment on [elektrumveikals.lv](http://elektrumveikals.lv) and at Elektrum Friendly Benefits Co-operation partner's sites for EUR 411 803 and other users – EUR 4 043.

The average cost of saving per megawatt hour is reported EUR 4.78 (Elektrum, 2019).

Interviews with the EEOS parties show that, when carrying out a cost-effectiveness analysis for each group of measures, companies have found that the most cost-effective information measures are on social networks, e-mails, mass media, other information measures (the advantage depends on the method of assessing the effect), while the least cost-effective is individual advice. The inclusion of energy efficient products on the Internet platform or direct communication and technology supply on a distributed basis is based on business principles.

In the annotation of Regulation No.226 (CoM, 21.03.2017.) The Ministry of Economics estimated that the indicative costs to be incurred by the Ministry of Economics, calculated on 9 EEOS parties, amounts to EUR 17135/year, including:

- Independent savings audit: EUR 3500/year;
- Review of energy efficiency plans and their amendments: 600 EUR/year x 9 EEOS parties = 5400 EUR/year;
- Review and calculation of required data: 120 EUR/year x 9 = 1080 EUR/year;
- Processing of annual reports: EUR 300/year x 9 = EUR 2700/year;
- Administration of the Fund's contribution: EUR 1020/year;
- Application of the fine: EUR 15/year x 9 = EUR 135/year;
- Development of methodological materials: 1300 €/year
- Updating the Catalogue: EUR 2000/year

Data on the actual costs of the Ministry of Economics have not been obtained. In analysing the information obtained from the EEOS parties on communication with the Ministry of Economics, it can be concluded that only one-off energy efficiency plans and their amendments have been checked so far. This is in line with the publication on July 16, 2019 by the the Ministry of Economics on Possible solutions to the problem of the electricity mandatory procurement component and functions for the implementation of energy policy (ME, 16.07.2019.), which concludes that “all reports received are currently being compiled as far as possible, but no qualitative and detailed assessment and analysis of these reviews are being carried out, and a full dialogue has to be maintained with the responsible parties on the information contained in the report and its revisions, if such a need is established”. The catalogue has not been updated since 2017, so these costs are not considered. Total expenditure amounts to EUR 5400.

Amendments to the Regulation No. 226 (10.12.2019.) provide for the transfer of the functions of energy policy administration to the State Construction Control Bureau, thereby improving the efficiency of public administration by centralising support functions and combining related functions.

## Relevance

Interviews show that EEOS parties perform an analysis of target audience needs based on surveys, interviews, individual conversations. Energy efficiency is one of the issues that is becoming increasingly important in different energy consumer groups. Surveys show that it is very important to provide information and measures that are economically viable in the household sector. On the other hand, the most important thing for companies is to obtain information for capacity building, economically sound measures and available funding. The EEOS scheme ensures that these needs are met.

The EEOS parties ensure that the policy measure is adapted to technological, scientific, environmental, social changes, as they follow the latest technological solutions, in cooperation with technology producers, by analysing changes in target audience interests.

## Coherence

This policy measure is aligned with Cabinet of Ministers Order No.257 (CoM, 24.05.2017.), where energy savings from EEOS are summed up with savings from other policy measures. The second legislative act coordinated with this policy instrument is Regulation No. 668 (CoM, 11.10.2016), which defines the arrangements for reporting savings in energy efficiency monitoring and how the Ministry of Economics publishes savings from EEOS. If the party responsible for the EEOS decides to make contributions for non-achieved energy efficiency savings, to Energy Efficiency fund, the responsibility for fulfilling the obligation is moved to the Ministry of Economics and Altum in accordance with the provisions of Regulation No.221 (CoM, 25.04.2017.). The state Energy Efficiency fund resources have to be used to implement the support programme for the achievement of the national mandatory energy final consumption, as well as public information and energy efficiency education measures, and Altum management activities.

## Added value

In interviews with EEOS, it is noted that the added value of this policy measure is that energy consumers who receive information on energy efficiency have changed their habits, such as green thinking as a concept, reducing waste, etc. Boosting energy efficiency increases customers' loyalty to the EEOS's parties. It helps in competition because energy efficiency is as additional bonus to offer to customers and they appreciate it very much.

## Complementarity

The EEOS parties mention that there was an insufficient communication process on the the Ministry of Economics side at the beginning of the introduction of the EEOS, which significantly hampered the introduction of the EEOS, since many important aspects were not sufficiently clearly described and legislative documents are widely interpreted. For example, the methodology for evaluating information campaigns was published only at the end of 2018 (according to point 7 of the Regulation No. 668, it had to be published already in 01.05.2017.), when EEOS members had to present an Energy Efficiency Action Plan for the start-up phase.

The lack of feedback from the Ministry of Economics after the approval of the original plan has caused confusion for the EEOS parties, as there is no information available on the overall progress and data of the implementation of the EEOS, as well as information regarding whether the parties' performance complies with the the Ministry of Economics requirements regarding



energy efficiency measures to achieve Latvia's overall objective. Regulation No. 668 does not exactly describe the procedure for the period of time after the submission of the savings report, whether the report has been approved or needs to be corrected. This gives rise to confusion as to whether the past work will suddenly be called into question in the future, or whether adjustments should be made for future action.

This is confirmed by the Ministry of Economics report On possible solutions to the problem of the electricity mandatory procurement component and the functions of implementing energy policy published on July 16, 2019, which concludes that “currently the performance of the functions of the EEOS is carried out by the Ministry of Economics (Department of Energy Policy Administration), but these functions are not performed in full capacity because of lack of capacity. All reports received are currently being compiled as far as possible, but no qualitative and detailed assessment and analysis of these reports is carried out, and no full dialogue is maintained with the responsible parties on the information contained in the report and its revisions, if such a need is established.

### Equality

In interviews, the EEOS parties indicate that they focus on all households under the EEOS scheme. Where information on energy efficiency measures is requested by large consumers, the EEOS parties provide this information. The EEOS parties ensure that information is provided in both Latvian and Russian languages and in English.

### Sustainability

The continuation of this policy measure depends on the capacity of the EEOS party to continue this measure, for example, Latvenergo has created Energy Efficiency Centre 22 years ago and will continue to deal with energy efficiency issues even if the EEOS is discontinued. Other EEOS parties also certify that the resources invested in human resources and accumulated knowledge in the performance of the EEOS would continue to be used if the EEOS obligation scheme did not continue.

### Compliance

In interviews with the EEOS, the parties mentioned that the policy measure is being seen more and more positively as energy efficiency becomes an integral part of life. The change of perception about energy efficiency are seen within the companies of the EEOS, with increased interest and awareness among employees and in society. Even by fulfilling the amount of duty before the deadline, the EEOS parties continue their energy efficiency activities. The EEOS's parties have observed that the interest in energy efficiency is increasing when energy price increases and is declining as it reduces.

## 5.2. Voluntary agreement

The information from the Ministry of Economics was requested by letter No 04000-2.2.2-e/327 (16.10.2019.), but no response to the request was received until the report was submitted. The analysis is therefore based on:

- Information available on the the Ministry of Economics website (ME, 2019)

- the information provided in interviews with the parties involved;
- information available on the home pages of the parties concerned (Salaspils, 2019)
- Other publicly available information such as the State Audit Office of Latvia (SC, 2018), workshops organised by the RTU Institute of Energy Systems and Environment.

### Effectiveness

Table 3 of the national Alternative Energy Efficiency Policy Measures Plan to Achieve the Energy End-use Savings Target for 2014-2020 states that the energy savings accrued by this policy measure will be clarified. On the other hand, the annotation of the Regulation No.226 states that the voluntary agreements will provide 59.6% of the overall target, or 5898 GWh (CoM, 21.03.2017.).

“In August 2017, the Ministry of Economics published an invitation for companies, their representative organisations and municipalities to apply for voluntary agreements. The invitation was followed by application of six companies, which will continue negotiations in 2018.” (Salaspils, 2019). Only 2 companies signed agreements – Salaspils Siltums and Jūrmalas Siltums.

Report on progress towards the national energy efficiency target for 2020, shows that “according to Regulation No. 669 the Ministry of Economics published on the website invitation in 2018 to sign voluntary agreements. Although several organisations and municipalities are interested in concluding the agreement, no new agreements were concluded in 2018. As one of the barriers is the lack of support from the State budget or the State Energy Efficiency Fund, although Section 8, Paragraph two of the Energy Efficiency Law states that the Ministry of Economics may provide support for energy audits and certain energy efficiency improvement measures taken in accordance with the agreement. The introduction of voluntary agreements concluded at the end of 2017 with the Salaspils Siltums and Jūrmalas Siltums are implemented in accordance with the energy efficiency plans submitted by the parties of the agreement. Information on the conditions for the conclusion of a voluntary agreement is available on the website of the Ministry of Economics” (ME, 2019).

The accumulated energy savings planned for Salaspils Siltums for the period from December 21, 2017 to December 21, 2022 are 5.53 GWh and 129.29 GWh for Jūrmalas Siltums from March 26, 2018 to February 26, 2023, representing a total of 134.82 GWh, of which only a fraction applies (approximately 55% for the period up to 2020). They represent 0.9% of the total estimated savings of this measure. Both companies that have concluded a voluntary agreement are temporarily fulfilling its conditions and achieving the objectives set.

A more detailed analysis of the causes for which the objectives have not been achieved has revealed that:

- Companies and municipalities have no motivation to commit themselves to achieving the savings target. Although the Energy Efficiency Law defines that state can provide financial support, it does not actually provide it. It is also identified by the Ministry of Economics as one of the reasons (ME, 2019).
- Companies and municipalities have no motivation to commit themselves to accounting for energy savings and preparing documentation on savings reporting. This is seen as an additional bureaucratic burden.

- On the other hand, the Energy Efficiency Law and the Regulation No.669 do not provide for sanctions against those who fail to comply with the agreement, which, if Ministry of Economics finds the possibility of supporting the parties to the agreement, will create further problems with meeting the targets.

Following the signing of the voluntary agreement, its implementation is followed in order to achieve the objectives set. At this stage, the achievement of the objectives depends on a number of factors:

- energy manager - this is the most important factor in determining whether the achievement of energy efficiency objectives is successful. The competence, knowledge, motivation, personality and other factors of the energy manager influence his attitude to duties and results to be achieved. The distribution of energy managers by type of behaviour is similar to that of municipalities which have introduced energy management or multi-apartment buildings, where experience of Latvian housing maintenance companies shows that approximately 20% of apartment owners are always opposed to energy efficiency measures, regardless of the factors of taking measures (for example, even if measures are for free, these people are voting against), 20% is always about energy efficiency measures, regardless of the factors affecting the implementation of the measures, and 60% is the fluctuating part that straddles towards the extreme group that is stronger. The interviews show that only about 20% of all energy managers are responsible, progressive and positive about their responsibilities. About 20% of energy managers do not care about the implementation of the energy management system, although they are responsible for it. The remaining 60% are operational, but the implementation of the energy management system and the achievement of the objectives are not smooth due to the lack of knowledge and expertise that can be increased by providing training and exchange of experience for energy management.
- Interest in the management of the municipality or business: the energy management system, like other performance-enhancing systems, can only be successfully implemented if they are supported and actively involved in the senior management of the company/municipality. The information obtained in the interviews confirms this statement: those municipalities where their manager is not interested in the energy management system are slow to implement it or not at all, and the implementation of the energy management system is a formality required by the law. On the other hand, where active support is provided by the head of the municipality/company, the introduction of energy management is not difficult.
- Whether there is a certified energy management system – its existence ensures that external evaluators - auditors of the certifying authority - come to the company/municipality each year to check progress and set future objectives, so that the company/municipality should aim to achieve the objectives. On the other hand, where there is no system, business/municipal leaders do not have the tool to achieve the targets.
- lack of information and communication provided by the Ministry of Economics – the introduction of a policy measure would be more successful if the requirements set out in the Energy Efficiency Law and Regulation No. 669 are explained through the prism of corporate and municipal benefits, not as a voluntary measure. It would be valuable to provide support to strengthen the capacity of business / municipal leaders and energy managers. Solutions already exist and are proposed in the framework of a variety of projects, such as the EU project Using new methods in training on adaptation and mitigation of climate change (Ekodoma, 2019), and should be taken over at national level. As a successful example, the interviews refer to the Altum Energy Efficiency Fund

forum Can Business afford to be non-energy efficient today? held on October 10, 2019, where companies/municipalities could receive practical advice and networking with similar companies.

- The myth that setting up monitoring technologies provides energy savings and working with people is no longer necessary – interviews have revealed that there is a common myth that setting up energy monitoring systems will allow energy savings to be achieved, hence no need to perform other actions (e.g. communication with energy consumers, technology change, regulation of technology, etc.). This shows a lack of knowledge and competence of manager's/energy management, which can be addressed through training and exchange of experience.

Companies which have concluded a voluntary agreement inform their customers on the basis of their needs and interests. The information is distributed in a variety of ways: the company's home page, Facebook profile, local media, city events, schools, etc.

The report Possible solutions to the problem of the electricity mandatory procurement component and functions for the implementation of energy policy published by the Ministry of Economics on July 16, 2019 (ME, 16.07.2019.), concludes that “currently the monitoring of voluntary agreements is carried out, as far as possible, by the Ministry of Economics (Department of Energy Policy Administration), but the lack of capacity does not actually lead to monitoring. Reports of the results currently achieved are not compiled and analysed qualitatively. “(ME, 16.07.2019.) On the basis of this report, amendments were made to Regulation No. 669 on 10.12.2019. and 01.01.2020. Ministry of Economics duties are taken over by the State Construction Control Bureau.

### Efficiency

The annotation of the Regulation No. 669 (CoM, 13.09.2016) does not foresee administrative expenditure for the implementation of this policy measure.

Regulation No. 669 (CoM, 11.10.2016) provides that all costs for the implementation of energy efficiency measures are covered by companies and municipalities.

The only document where the administrative costs associated with this policy measure appear is the annotation of Regulation No. 668 (CoM, 06.9.2016) relating to the transfer and input of annual energy savings data to the energy efficiency monitoring system:

- Filling out the Annex (for a large companies, large electricity consumers, public authorities, municipalities, responsible parties, public or municipal fund): EUR 1044.00 (8.70 x 40) x (3 x 1);
- Filling out the Annex (to the public authority and municipality): EUR 8.70 (EUR 8.70 x 1) x (1 x 1).

Estimates show that the actual costs of Ministry of Economics administration are likely to be lower because only two voluntary agreements have been concluded, as well as Ministry of Economics have not entered in, performed an analysis and published the data in the energy efficiency monitoring system and on its home page, as defined by Regulation No.668.

In both companies who signed voluntary agreements it has not produced additional administrative costs, since they already have energy management systems in place for

monitoring energy savings and collecting data. Surveys show that 2-3 working days are needed to prepare the annual report form.

The surveys show that the estimated cost of information measures is approximately EUR 10 per cumulative MWh saved.

### Relevance

The aim of the policy measure is to stimulate energy efficiency improvements in individual companies, business organisations or municipalities and to achieve at least 10% energy savings, so that Latvia can contribute to the achievement of the overall European Union's climate and energy objectives over the period 2016-2020. This is particularly important because the objectives set for Latvia are ambitious and their achievement is a major challenge (ME, 2019). As demonstrated by the long-term experience of other countries with the implementation of voluntary agreements, this is an important policy instrument for energy efficiency policy. In Latvia, it can also make a significant contribution to the achievement of Latvia's energy efficiency objectives, but it must be implemented with significant corrections, because it does not help to achieve the objectives in the existing form.

The interviews mentioned that many companies are taking a variety of energy efficient measures on a daily basis, such as using data monitoring systems to optimise the functioning of systems, thereby significantly reducing energy consumption but not accounting it. If these companies entered into a voluntary agreement, the State would obtain data on significant energy savings in achieving the targets.

The information from the interviews shows that the two companies that have concluded the voluntary agreement ensure that the policy measure is adapted to technological, scientific, environmental, social changes, as they continuously follow up on the latest technological solutions, in cooperation with technology producers, by analysing changes in customer interests.

### Coherence

This policy measure is aligned with Cabinet of Ministers Order No. 257 (CoM, 24.05.2017.), where the energy savings obtained by this policy measure are added to Latvia's overall energy savings target. The second legislative act coordinating this policy instrument is Regulation No. 668 (CoM, 11.10.2016), which defines the arrangements for reporting on savings in the energy efficiency monitoring system by the parties concerned, and how Ministry of Economics publishes the resulting data on this policy measure. This policy measure works together with fiscal measures, such as EU funds, measures for allocating Emission Quota funds. They significantly reinforce this measure, since they provide financial support for energy efficiency measures taken by companies/municipalities, but savings may only be reported once in accordance with Regulation No.668 and not double counted in both policy measures at the same time.

### Added value

In interviews with the parties involved, the added value of this policy measure mentioned a significant promotion of the understanding of energy consumers (customers) about energy saving. This is achieved both by informational measures and by technological measures, such as ensuring low reverse temperatures in the heating system, thereby reducing costs for

customers. Understanding energy saving contributes to an overall increase in green thinking in society with other environmental aspects. Salaspils Siltums has significantly improved its reputation by helping to save energy for its customers – from negative treatment as a monopoly, it has changed to positive treatment as a partner.

### Complementarity

Although Regulation No. 669 states that the Ministry of Economics should, at least once a year, make available on its website the information of potential volunteers on the possibility of concluding an agreement (COM, 11.10.2016), only one-off publication of information in 2017 has been carried out so far. This policy measure is introduced without the information provided by the Ministry of Economics and has created a communication gap. If the requirements set out in legislation were clarified through the prism of the benefits of companies/municipalities, and it was intended to develop aid that would strengthen the capacity of the parties to the agreement, the implementation of this policy measure would be more successful. In addition, Ministry of Economics does not fulfil the obligation set out in Regulation No.668 to publish data in the energy efficiency monitoring system without providing feedback to the industry.

The first version of the Energy Savings Catalogue, which was published in 2016, included far more measures than in the 20.06.2017. catalogue version (ME, 2017), which is also current. Interviews show that more companies/municipalities would enter into a voluntary agreement if the first version of the catalogue had been left, because the existing version is too restrictive.

### Equality

So far, this policy measure ensures equal treatment for all members of society.

### Sustainability

Energy plans and energy management systems existed in companies and municipalities before the implementation of this policy measure. A number of companies take different actions to improve energy efficiency even if there is no voluntary agreement. The interviews indicated that companies will continue to save energy even if the agreement is no longer continued after its expiry date.

### Compliance

Energy efficiency measures taken in recent years have raised public awareness of energy efficiency and its importance in different sectors. This makes it easier to implement this policy measure because the public has knowledge of the various energy efficiency measures. This policy measure has led to positive changes in perception, both in the interest and understanding of the stakeholders in terms of energy saving and in society.

## **5.3. Energy audit and energy management in large companies and electricity consumers**

The analysis is based on the following:

- Data collected by ME from the submitted reports of large companies and large electricity consumers within the cope of energy efficiency monitoring system according to Cabinet of Ministers Regulation No. 668 for the year 2016 and 2017;

- The National Research Program project “The pathway to energy efficient future for Latvia (EnergyPath)” (project No. VPP-EM-EE-2018/1-0006) “Assessing the potential for energy efficiency”;
- Information available on the ME website (ME, 2019);
- Information provided during the interviews between the involved parties;
- Other publicly available information such as the report by State Audit Office 'Is the existing energy efficiency policy targeted accordingly in order to achieve the projected energy savings?' (SC, 2018), RTU Institute of Energy Systems and Environment (IESE) seminars (IESE, n.d.)

### Effectiveness

According to the energy efficiency policy, the plan of alternative measures in order to achieve the targeted savings in final energy consumption for the period of 2014-2020 projects the following:

- by implementing energy audits in large companies, the existing energy consumption in the company will be evaluated and potential energy efficiency activities will be determined, which in result will generate the accumulated energy savings of 753,6 GWh by 2020;
- implementation of energy management practices in the large electricity consumers will ensure the accumulated energy savings of 54 GWh by 2020.
- in total it will account for savings of 807.6 GWh.

In order for Latvia to meet its obligations under the Energy Efficiency Directive on the cumulative energy efficiency target from 2016-2020, it was very important to start energy efficiency measures as soon as possible, i.e. on January 1, 2016. According to the State Audit Office's report (VK, 2018), “Latvia did not ensure the timely adoption of the Energy Efficiency Directive”. Although the directive was already accepted on 25.10.2012 and its requirements had to be incorporated into the Latvian legislation and had to come into force by 05.06.2014, the Ministry of Economics had only announced the draft for Energy Efficiency Law at this date at the meeting of the State Secretaries, but it was only adopted by the parliament on 03.03.2016. Under the Energy Efficiency Law, for large companies, the first energy audits and energy management certificates were supposed to be submitted only on December 1, 2017 and at least three energy efficiency activities with the highest estimated energy savings or economic returns should be implemented by April 1, 2020. For large electricity consumers, the deadlines for the implementation of activities are April 1<sup>st</sup>, 2018 and April 1, 2022, respectively. This means that if companies defer the implementation of energy efficiency measures and leave it at the end of the deadline, this policy measure does not achieve its intended objective, since the necessary activities are implemented after the end of the period according to the determined in the Energy Efficiency Directive.

In the ME report to the European Commission on July 2019 (ME, 2019), it was reported that “large electricity consumers with an annual electricity consumption exceeding 500 MWh from 2016 to April 1, 2018 are required to implement of a certified energy management system or energy audit. According to the gathered information from the Energy Efficiency Monitoring System by Ministry of Economics, in 2016 in total 1010 companies corresponded to the large electricity consumer status, from which 891 companies were obliged to implement a certified energy management system or regular energy audit. For the mentioned companies, at least three energy efficiency activities with the measured highest energy savings or economic returns determined in the energy audits should be implemented by April 1, 2020. As part of the energy

efficiency monitoring system, large electricity consumers have already started reporting on the energy savings achieved as a result of the implementation of the implemented energy efficiency improvement activities. Information about large electricity consumers is available on the website of the Ministry of Economics.

In the scope of this report the information about the large companies is not included.

On the ME website, list of large companies meeting the requirements of the legislation have been published (including large companies employing more than 249 employees who have worked full-time in the company or on its assignment for the entire reference year concerned and/or whose annual turnover exceeds EUR 50 million and the total annual balance sheet exceeds EUR 43 million. (In cases where the number of full-time employees is less than 250, an enterprise may be added to the group of large companies if the annual turnover and the total annual balance at the same time exceed the threshold): in 2016 these were 228 companies, in 2017 - 236 companies and in 2018 - 243 companies. According to the information on ME website, if a large company does not meet the criteria of a large company, it will not be exempted from the obligations of the Energy Efficiency Law. It means that by the deadline for the implementation of the following energy audit or for the re-certification of energy management or environmental management system, the company must: (1) submit annual report on the implemented energy efficiency activities and the achieved energy savings as a results of these activities; (2) implement at least three energy efficiency activities with the highest estimated energy savings or economic returns (ME, 2019).

In the ME report to the European Commission in July 2019 (ME, 2019), table 6 outlines the numbers on the calculated energy savings from the activities implemented in 2017, as well as the savings for the period from 2014 to 2017, and cumulative savings for 2020 (see Fig. 5.2). The column "Activity" refers only to the energy audits, however, the implemented energy management by the companies is not mentioned. From this information it can be concluded that if in 2018 and in 2019 there will be no energy efficiency activities implemented, then till 2017 the achieved savings will allow to meet the 83% from the cumulative energy efficiency target.

**The estimated energy savings from the measures that continued to implement projects in 2017 in 2014-2017 and cumulatively for 2020.**

Activity	New savings in 2014, GWh	New savings in 2015, GWh	New savings in 2016, GWh	New savings in 2017, GWh	New savings in 2020, GWh
Implementation of measures identified as a result of energy audits by large companies and large electricity consumers		8,03	46,2	97	668,1

Fig. 5.2 Figures from ME report "Report on the progress achieved in 2017 towards national energy efficiency targets for the year 2020 in accordance with Article 24(1) and Part 1 of Annex XIV to Directive 2012/27/EU" (ME, 2019) according to the table 6 about the calculated energy savings from the activities implemented in 2017, as the savings for the period from 2014 to 2017, and cumulative savings for 2020.

The following analysis uses the information from the energy efficiency monitoring system supplied by ME, which was issued by the ME to the implementors of this research project. It includes raw data and information about large companies and large electricity consumers.



Changes in the number of large companies and large electricity consumers from 2016 to 2018 are shown in Table 5.2. The dynamics of the number of submitted energy balances is represented in Table 5.3., while Table 5.4. provides the information on energy audits submitted by large companies and large electricity consumers, the number of energy management and environmental management certificates and the number of companies that did not submit the necessary documentation according to the legislative requirements. According to the information provided on the ME website (ME, 2019):

- If a large electricity consumer meets the criteria of a large company status, it is subject to the requirements of the Energy Efficiency Law that apply to large companies.
- if the self-consumption of a large electricity consumer indicated in the submitted energy balance does not exceed 500 MWh, then the requirements of the Energy Efficiency Law do not apply to it.
- if the submitted balance indicates a sub-user whose electricity consumption exceeds 500 MWh, then that sub-user must comply with the requirements of the Energy Efficiency Law within one year from the approval of the balance, but not later than by January 1st, 2019.

Table 5.2

The dynamics of large companies and large electricity consumers

	2016	2017	2018
Large enterprises (including large non-large electricity customers)	231 (69)	238 (54)	265 (47)
Large electricity consumers other than big companies	942	915	914
Total	1173	1153	1179

Table 5.3

The dynamics of the number of energy balances submitted by large companies and large electricity consumers

	2016	2017
Large companies that have submitted energy balance	0	0
Large electricity consumers who have submitted energy balance	2	219

Table 5.4

Number of energy audits, energy management and environmental management certificates submitted by large companies and large electricity consumers, and number of non-compliant companies

Large companies that have submitted an energy audit	118
Large electricity consumers that have submitted an energy audit	373
Large companies that have submitted ISO 50001 certificate	92
Large electricity consumers that have submitted ISO 50001 certificate	230
Large companies that have submitted ISO 14001 with supplement	13
Large electricity consumers that have submitted ISO 14001 with supplement	21

Large electricity consumers that have submitted an energy balance and their self-consumption is below 500 MWh/year	213
Companies that have not submitted any of the documents required by the law	381

Publicly available information indicates that “In 2016 the list of large companies included 228 companies, and by 20<sup>th</sup> November 2018, 199 large companies had reported that they have implemented the mandatory energy audit. Companies that have already managed to implement certain energy efficiency improvement measures in 2016 have reported energy savings of 80 gigawatt hours (GWh), while summarizing the information provided by companies on the measures they plan to take in the period until 2022, energy savings are planned at 255 GWh, which will save a total of more than € 24 million in energy costs.” (DB, Dianas Business, 2019)

On September 11, 2018, the online website of the newspaper “Dianas Bizness (DB)” published information that “Although currently the majority of companies whose electricity consumption in 2017 exceeded 500 MWh have met the requirements of the Energy Efficiency Law, almost 300 companies have not yet complied with the requirements. ... DB has already reported that at the end of 2017, only 94 large electricity consumers had complied or partially complied with the Energy Efficiency Law requirements, in February 2018 the number of those who had fulfilled the requirements increased to 121, in March - to 300, and in April - to 590. The Ministry of Economics emphasizes that the greatest activity of entrepreneurs was observed shortly before the deadline for compliance with the requirements - in March and April 2018.” (DB, 2018)

The number of ISO 14000 and ISO 50001 certificates is increasing as the energy consumption of the company increases. None of the large electricity consumers chose to carry out energy audit.

The total electricity consumption in large companies and electricity consumers for which information is available in the ME energy efficiency monitoring system shows that electricity consumption in both groups of companies is similar and tends to increase every year.

Information on electricity consumption in 201 large companies is available in the energy efficiency monitoring system. This information is not available for the other large companies. The largest consumer consumes 115 GWh per year on average, while smaller consumers spend less than 500 MWh/year. The average electricity consumption of a large company is equal to 9500 MWh/year. Similar distribution of consumption as seen in large companies is also observed in the large electricity consumer group, which does not include large companies. The largest consumer consumes 44 GWh of electricity per year on average, while the smallest consumes 500 MWh/year.

Data shows that companies that consume more than 20 GWh per year (electricity costs represent around EUR 2 million per year) forecast energy savings of less than 10%, with the exception of four companies that plan them at much higher level. On the other hand, companies with less than 20 GWh/year consumption plan higher savings. The trend is particularly pronounced in low energy consumption companies that project relatively high energy savings.

Moreover, a similar trend is observed for all companies in total - the higher the energy consumption of the company, the relatively smaller the planned energy savings, with the exception of individual companies. The largest percentage of savings are planned in companies with low electricity consumption.

An analysis of the energy audits of 123 industrial companies submitted to ME shows that 50 activities from a total of 350 energy efficiency activities are related to energy management and information activities and contribute about 11% of the total savings. Others are constituted by lighting (32%), energy efficiency of buildings (26%), equipment (14%).

Only 2 of the large companies expects to significantly reduce energy consumption (by 38% and 74%). Other companies have a similar relationship as large electricity customers - the higher energy consumption, the lower the expected relative savings.

The total amount of savings planned for large companies and large electricity consumers is equal to 390 GWh/year. Companies have reported total savings in 2016 of 105 GWh and of 171 GWh in 2017. Large companies implemented less activities in 2016, but the amount saved by large electricity customers decreased in 2017, however, it increased significantly in large companies as several companies significantly reduced its energy consumption. If it is assumed that companies will not implement any activity in 2018 and 2019, it would amount to 973,15 GWh in 2020, together with the savings achieved in 2015 (8,03 GWh).

The energy savings reported by large companies and large electricity consumers other than large companies for 2016 and 2017 are outlined in Table 5.5. The savings are calculated as the reported total annual energy savings divided by the total electricity consumption for the corresponding year.

Table 5.5

Energy savings reported by large companies and large electricity consumers that are not large companies for 2016 and 2017

	2016 year	2017 year
Large companies	2,4%	7%
Large electricity consumers that are not large companies	3,4%	2%

A summary on the implementation of energy management systems and energy audits in large companies and large energy consumers in 2016 and 2017 as reported to the Ministry of Economics is given in Table 5.6. One of the main shortcomings of the energy efficiency monitoring system is that data on energy consumption are only available for electricity. In turn, energy savings include all types of energy that are used in the company. This hinders the analysis of the distribution of energy savings, their size, cost-effectiveness and potential.

Overall, the database includes a total of 1491 companies. In order to be able to perform the analysis, the companies are divided into several groups according to the presented in Table 5.6.:

- companies where the total projected energy savings (total energy savings divided by the average electricity consumption for 2016-2018) are less than 50%;
- companies where the total projected energy savings (total energy savings divided by the average electricity consumption for 2016-2018) are more than 50%;
- companies that have performed energy audits/energy management, but there are no data on planned energy savings;
- companies that have performed energy audits/energy management, but there are no data on electricity consumption;
- companies that have submitted an energy balance, but their electricity self-consumption is less than 500 MWh/year;
- companies that have not submitted data on implementation of energy audit or an energy management certificate, or an environmental management certificate or energy balance.

Table 5.6.

Summary of the implementation of energy management and energy audits in large companies and large energy consumers in 2016 and 2017

	Energy savings below 50%	Energy savings above 50%	Energy audit has been performed or energy management has been implemented, but no data are available on planned energy savings	Energy audit has been performed or energy or environmental management has been implemented, but no data are available on electricity consumption	Energy balance has been submitted and the self-consumption of electricity is less than 500 MWh/year	Neither energy audit nor energy management certificate have been submitted	Total
Total electricity consumption, GWh/year	3030	137	59	0	329	200	3755
Planned savings, GWh/year	182	199	0	10	0	0	390
Actual savings in 2016, GWh/year	43	30	17	14	0	0	105
Actual savings in 2017, GWh/year	90	76	4	1	0	0	171
Number of performed energy audits	410	22	15	43	0	0	490
Supplement to ISO 14001 submitted	30	2	1	2	0	0	35
ISO 50001 certificate submitted	264	27	11	22	0	0	324
Total companies	704	51	27	67	213	428	1490
Projected average savings, %	7	174	0		0		
Costs per 1MWh saved/year in 2016	81	226		262			
Costs per 1MWh saved/year in 2017	159	552		2113			
Reports for 2016 have been submitted	64	11	1	9		0	85
Reports for 2017 have been submitted	310	23	7	26		0	366

Figure 5.3 shows the enterprises belonging to different abovementioned groups as a share from the total number of enterprises that are subject to the requirements of the Energy efficiency law. The largest share of them are companies with savings of less than 50%, followed by companies that have not submitted any documents required by the law, then those companies that have submitted an energy balance and their own consumption is less than 500 MWh/year and the rest make up 10%.

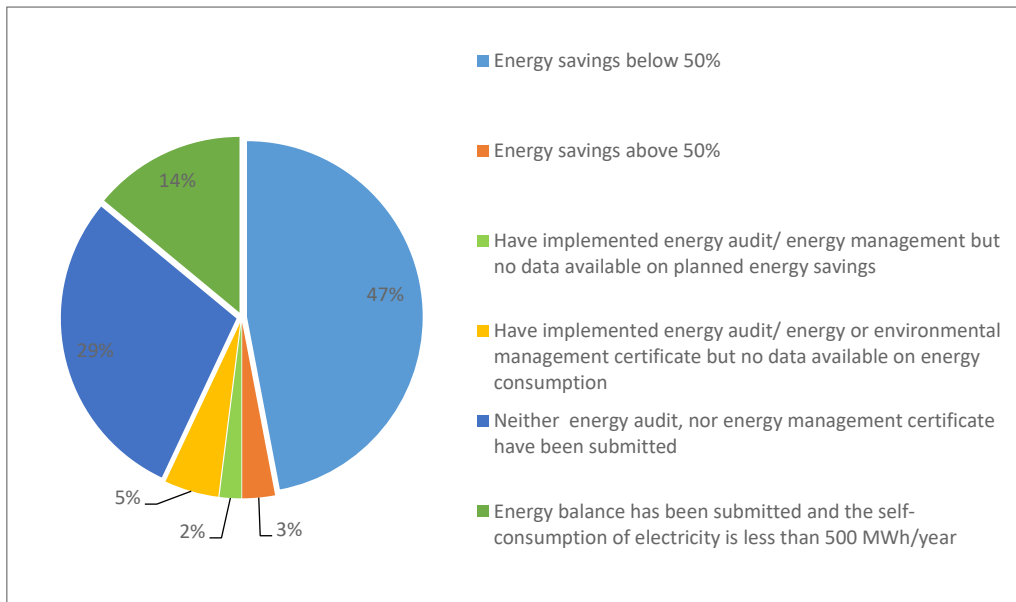


Fig. 5.3 Proportion of the number of enterprises belonging to different groups from the total number of enterprises subject to the requirements of the law

- Energy efficiency duty:

According to the specified in the annotation of the Cabinet of Ministers Regulation No. 202 (COM, 13.02.2017.), the amount of duty was projected as follows: “<...> The projected revenue from duty in 2018 is calculated as follows:  $(8780 \text{ MWh} \times 6.30 \text{ euro}) \times 10 = \text{EUR } 553\,140$  <...> The total revenue from the duty is calculated according to the following:  $(500 \text{ MWh} \times 6.30 \text{ euro}) \times 800 = \text{EUR } 2\,520\,000$ . Therefore, the potential payers of the duty in 2020 could be approximately 460. Consequently, the revenue from the duty are estimated at the amount of EUR 1 449 000  $(500\text{MWh} \times \text{EUR } 6,30) \times 460$ .”

On March 6, 2019, on the ME website the Minister of Economics reported that “... the obligation applies to 1010 companies that are large electricity consumers, of which 815 companies have complied with the requirements of the legislation. Decisions on the application of the energy efficiency duty have already been notified to 132 companies, with 63 agreements in the coordination process. The amount of the duty applied to the companies ranges from EUR 3200 to EUR 50 000 (EUR 8050 average). The formula for calculating the duty is the following - EUR 6,377 per MWh consumed by the company, so the higher the electricity consumption of the company, the higher the amount of the duty.” (ME, 2019) The Minister mentions only large electricity consumers.

On April 25, 2019, sudden amendments in the Energy Efficiency Law are made and in the paragraphs No 10.1 and 10.3 of the transition law it is reported that for a large electricity consumer who has not complied with the deadline according to the mentioned in the paragraph No 10 and has or has not paid its calculated energy efficiency duty that is calculated and applied to it by a decision of the Ministry of Economics, has the right for the support in the form of a reduction, exemption or refund of the energy efficiency duty, if till May 15, 2019, if it complies with the duties referred to in Section 12, paragraph two, three or five. In the paragraph No 10.4 of the transition law it is stated that commercial support referred to in paragraph 10.1 and 10.3 has to be granted to the large electricity consumer by the ME as *de minimis* aid, taking into account the application of Articles 107 and 108 of Commission Regulation (EU) No 1407/2013 of December 18, 2013 on the conditions of the regulatory enactments regarding the procedures for the accounting and granting of *de minimis* aid. Therefore, the companies who have received decisions regarding the energy efficiency duty are entitled to apply to the Ministry with a relevant

submission regarding the granting of *de minimis* aid and an electronically submitted form in the *de minimis* aid accounting information system, based on what the Ministry of Economics will evaluate the possibility of exempting the company from payment of the energy efficiency duty.

According to the data from the energy efficiency monitoring system that are used in this study, the total annual amount of the duty for all underperformed companies (in total – 381 companies) would amount to an average of EUR 1.21 million if the amount of the fee is EUR 6,3/MWh (according to the project annotation of CoM regulation No 202 (CoM, 13.02.2017.)). The total amount of the duty paid at the end of 2019 was approximately EUR 0.5 million.

In its information report on 16 July 2019, ME states that “At present, the administration of the energy efficiency duty is carried out by the Ministry of Economics (Department of Energy Policy Administration), however, the performance of these functions does not take place entirely due to a lack of capacity and there exist risks that the maximum possible amount of financial resources that could be used for energy efficiency improvement measures is not obtained” (ME, 16.07.2019.)

### Efficiency

Planned monetary estimate of administrative costs according to the project annotation of CoM Regulation No 668 is the following:

- Filling out the Annex (for a large company, a large electricity consumer, a public authority, a local government, a responsible party, a public or local government fund): EUR 1044.00 (8.70 x 40) x (3 x 1);
- Publication of energy savings achieved by the responsible party: EUR 8.70 (8.70 x 1) x (1 x 1) (COM, 06.9.2016)

On July 2019 ME in its informative report (ME, 16.07.2019.) stated that:

- “At the moment, the Ministry of Economics (Energy Policy Administration Department) is assigned to perform the functions of monitoring the fulfillment of mandatory obligations of large electricity consumers and large companies and evaluating the submitted annual reports, however, these functions are not fully performed due to lack of capacity where a full qualitative and detailed evaluation of the submitted reports is not performed”.
- However, at present the Ministry of Economics, as the developer of regulatory enactments in the field of energy audits, cannot independently verify the prepared and performed energy audits. The Ministry of Economics also does not check the information indicated in the performed energy audits, as well as whether the coverage of the energy management system and the planned activities comply with the requirements of the Energy Efficiency Law. The work of energy auditors is supervised by the state agency “Latvian National Accreditation Bureau”, which has accredited the respective energy auditors in accordance with Cabinet Regulation “Regulations Regarding Assessment of the Competence of Independent Experts and Monitoring of Professional Activity Thereof in the Field of Energy Performance of Buildings” and Cabinet of Ministers Regulation No. of 26 July 2016 487 “Regulations Regarding Energy Audit of Enterprises”. In turn, in order to perform independent quality monitoring of energy audits, it is necessary to perform these functions by an independent institution.
- Section 9, paragraph five of the Energy Efficiency Law stipulates that the energy audit report must be registered in the information system under the Ministry of Economics as of 1 July 2017. However, the reports submitted by energy auditors are not yet compiled in a single register and independent audits of the quality of energy audits are not carried out due to a lack of capacity and funding.
- At present, the administration of the energy efficiency duty is carried out by the Ministry of Economics (Department of Energy Policy Administration), however, the performance of these functions does not take place entirely due to a lack of capacity and there exist risks that the

maximum possible amount of financial resources that could be used for energy efficiency improvement measures is not obtained.

### Relevance

The implementation of this policy measure aims at ensuring the availability of energy audits and regular, mandatory energy audits in large companies (CoMs, 2015), as well as the energy end-use savings target of 2014-2020 of the energy efficiency policy alternative measures plan. In order to achieve the target for 2020, energy audits in large companies will assess the company's energy consumption and identify energy efficiency improvement measures, which will lead to savings of 753.6 GWh by 2020. In turn, the introduction of energy management in large electricity consumers will ensure the accumulated energy savings of 54 GWh by 2020. (ME, 2019). Both of these objectives remain important and their achievement is important for Latvia to fulfil its international obligations. Failure to do so is subject to significant penalties. (ME, 16.07.2019.).

Those companies that implement statutory requirements for the introduction and implementation of an energy management system, as well as carry out energy audits and implement energy efficiency measures in the way originally envisaged when drafting the directive and the law, ensure that the policy is adapted to technological, scientific, environmental and social changes, as they follow the latest technological solutions, cooperating with technology manufacturers, analyzing changes in the interests of the target audience. On the other hand, other companies that only formally comply or do not comply with the law do not ensure that the policy measure is adapted to technological, scientific, environmental and social changes.

### Coherence

This policy measure is coordinated with the Cabinet of Ministers Order No. 257 (Cabinet of Ministers, 24.05.2017), where the energy savings obtained by this policy measure are included in the overall energy saving target of Latvia. The second regulatory enactment with which this policy instrument has been corresponded is Cabinet Regulation No. 668 (Cabinet of Ministers, 11.10.2016), which determines the procedure for how the involved parties report on the savings in the energy efficiency monitoring system and how the ME publishes the obtained data on this policy measure.

### Added value

During the interviews with the involved parties there were no added value mentioned as a result of the implementation of this policy measure.

### Complementarity

This policy measure was introduced without explanatory information from the ME and has created a communication gap. If, after the entry into force of the Energy Efficiency Law, the requirements set out therein were interpreted through the prism of business benefits instead of a mandatory obligation, and if support was provided to strengthen the capacity of energy companies, energy managers and energy auditors, this policy measure would be more successful.

In addition, companies that perceive the requirements of the law as a burden do not see the benefits of implementing an energy management system or energy audits, and the law allows

systems to be formally implemented without setting energy efficiency targets without even trying to achieve the intended national energy efficiency target.

A number of important aspects related to the operation of the ME have caused great negativity in companies:

- Different deadlines for the submission of energy audits/environmental management certificates/energy balance certificates/energy balance certificates, different deadlines for the implementation of energy efficiency measures for large companies and large electricity customers, the form of submission (electronically or in paper format) makes it very difficult to keep track of where, what form and what needs to be submitted. The requirements are changed from time to time and their changes require companies to have additional capacity.
- Cases with the submission of documents specified in regulatory enactments to the Ministry also indicate problems with communication between the ME and companies. Uncertainty about late deliveries and the corresponding sanctions created chaos between companies that missed the submission deadlines in December 2018 - EM employees explained by phone that there will be no penalties for delays, however, EM lawyers explained that at the end of the deadline, the energy efficiency duty must be paid according to the conditions of the law. On March 6, 2019, the Minister of Economics Ralph Nemiro explains this on the website of the Ministry of Economics: "The 12th Saeima delayed the development of the Energy Efficiency Law for 3 years, i.e. until 2016. Although 2-3 reminders were subsequently sent to each large company individually to assess their electricity consumption in a timely and responsible manner and to inform the Ministry of Economics of their compliance within the deadline, this was clearly insufficient, as many companies did not meet this deadline. The case of SIA "Liepkalni", which has been made public in recent days, also confirms this - the company completed the energy audit on November 30, 2018, the information was submitted to the Ministry on December 7, i.e. with a delay of 8 months. According to the current wording of the law, such a delay is a violation of a legal norm, as a result of which the above-mentioned duty has been applied to it. Nor is the duration of the delay differentiated: the one-day delay duty is equivalent to the non-compliance duty." (ME, 2019). Afterwards suddenly on April 25, 2019, amendments are made to the Energy Efficiency Law, stipulating that those large electricity consumers who have submitted the documents specified in regulatory enactments are entitled to support in the form of energy efficiency tax relief, exemption or refund, if by May 15, 2019 it fulfills the obligations referred to in Section 12, paragraphs two, three or five of this Law.

### Equality

No cases have been identified in which equality has not been respected as a result of this policy measure.

### Sustainability

Energy efficiency measures were introduced in companies before this policy measure was introduced, particularly in companies with foreign capital. The interviews indicate that some companies will not continue to take energy-efficiency measures if the policy measure is terminated. One of the reasons for this is the way in which ME introduced this measure: before the introduction of legislation, communication was only in the form of orders, but it has been weak or not at all during the course of the legislation. This has, in many, created a reluctance for energy saving.



## Compliance

The companies affected by this policy measure accept its requirements with great resistance. It is caused by the type of EM communication - in the order format, often there is no communication at all. Some of the information provided by the ME has been contradictory.

An example of positive communication on March 6, 2019 is presented by Economics Minister Ralph Nemiro, who explains that "we borrow our time and resources on this land from our children. In order for Latvia to meet the EU's energy efficiency requirements for 2020 and the country should not pay huge fines for non-compliance, we must each meet today's obligations with the greatest sense of responsibility. I therefore look forward to the continuing concern of entrepreneurs, particularly the large electricity consumers, to increase energy efficiency in their companies. This will help companies to improve their internal processes, use energy resources more responsibly and ultimately reduce their electricity bills, thereby significantly increasing the competitiveness of their business and the competitiveness of the Latvian economics as a whole. At the same time, I call on entrepreneurs to engage more actively in the legislative process in the future, thereby raising awareness of their obligations." (ME, 2019)

## 5.4. Energy efficiency funds

The analysis is based on:

- information available on the ME website (ME, 2019);
- the information provided in interviews between the parties involved;
- the information available on the "Altum" website;
- Other publicly available information such as the National Control Report 'Is the existing energy efficiency policy targeted accordingly in order to achieve the projected energy savings?' (SC, 2018), RTU Energy Systems and Environment workshops (IESE, n.d.).

## Effectiveness

The regulatory enactments stipulate that the operation of the State Energy Efficiency Fund in relation to the use of financial resources at its disposal is controlled by the ME. Altum, on the other hand, uses the resources of the State Energy Efficiency Fund to implement the state support program for achieving the mandatory energy end-use target, as well as public information and education measures in the field of energy efficiency approved by the ME. In accordance with the Altum Regulations, it uses the Fund's resources for the implementation of state support programs approved by the Cabinet of Ministers in the form of grants or financial instruments to achieve the mandatory final energy consumption target (Altum, Energy Efficiency Fund Regulations, 25.09.2019).

shows the data of the Altum Energy Efficiency Fund website on what progress has been achieved so far. Public information and education activities have been carried out for a total amount of EUR 47,600. A number of other events that were not reported on the website were mentioned in the interviews. Altum is working hard to accelerate the improvements towards energy efficiency. This financial institution is purposefully taking steps to increase market demand for energy efficiency, which would allow it to achieve its main goal of increasing its loan portfolio for energy efficiency projects. Unlike EM, Altum actively analyzes the market, trends, energy consumers, their behavior and seeks opportunities to increase the demand for energy efficiency services.

## Measures implemented

Information and education activities carried out in the framework of the fund

No	Activiti	Contact No.	Funding	Time/period of the measure
1.	Business awareness campaign on energy efficiency issues in cooperation with "Day Business"	Agreement 2019-90 of 8 May 2019 with 'Reprise' Ltd	20 000 EUR	May-December 2019
2.	"Day Business "is prepared by material distribution	-	20 000 EUR	May-December 2019
3.	"Can Business today afford to be energy efficient?" marketing activities, including publishing video and material in the Forum		7 600 EUR	10 September October, 2019

4.7. Fig. Screenshot from the Altum Energy Efficiency Fund website 14.12.2019. (Altum, 2019)

## Efficiency

The ME informative report of July 16, 2019 states that "Currently, the energy efficiency duty is administered by the Ministry of Economics (Energy Policy Administration Department), however, these functions are not fully performed due to lack of capacity and there are risks that the maximum possible amount of financial resources that can be used for energy efficiency improvement measures is not obtained." (ME, 16.07.2019.)

According to section 7, paragraph three, clause 2 of the Energy Efficiency Law, 90% of the revenue from the energy efficiency duty is transferred to the state energy efficiency fund, managed by the joint-stock company "Development Finance Institution Altum". Accordingly, 10% of the revenue from the energy efficiency duty will be provided to cover the expenses of the ME related to the monitoring of the achievement of energy efficiency targets, the provision of reporting, as well as the maintenance of the energy savings database. (CoM, 13.02.2017.).

At the end of 2019, approximately 0.5 million EUR were transferred to the energy efficiency fund. The following is a list of planned expenses of the ME that would be covered by the collected revenues from duty (CoM, 13.02.2017.):

- Ensuring monitoring of the achievement of energy efficiency targets. ME in compliance with the Cabinet of Ministers Regulations of 3 January 2013 No. 1 "Procedures by which a public person orders research", will perform outsourcing procurements, i.e. researches supporting the calculation of energy savings in areas where direct measurements of energy consumption are not available (tax measures, information measures, etc. measures related to the behavior of energy consumers). A total of 3 studies were planned in 2018, the total amount of which was 30,000 EUR (with VAT 21%). The costs included in the cost calculation have been

equated to the costs of previous studies, depending on the requirements of the technical specification (time spent in hours, costs per hour).

- Ensuring reporting to the European Commission. Directive 2012/27 / EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125 / EC and 2010/30 / EU and repealing the transposition of Directives 2004/8 / EC and 2006/32 / EC the reporting and planning obligations under the regulatory framework (hereinafter - EED) and the Climate and Energy Policy Framework for 2020-2030 (KEPS2030) include the processing, calculation and analysis of energy data, including, where appropriate, strategic environmental assessment for the following EC reporting documents:
  - Annual progress report on progress made towards a national energy efficiency target in accordance with Annex XIV to the EED;
  - A comprehensive assessment of the potential for high-efficiency cogeneration and efficient use of district heating and cooling (outsourcing) that has to be carried out every 5 years;
  - The Sustainable Energy and Climate Strategy and the National Energy Efficiency Action Plan developed on the basis of a model approved by the European Commission.

In order to prepare the mentioned documents, at the same time ensuring the administration of the energy efficiency duty, which according to the regulations will be performed by the ME, starting from 2018, funding is needed to ensure the remuneration of and application, control of the payment of fees, as well as regular coordination of supervision:

In 2018 - EUR 25 314

In 2019 - EUR 42 000;

In 2020 - EUR 44 000.

- Introducing and maintaining an energy savings information system:
  - development of the technical specification (outsourcing) in 2019 - EUR 20 000;
  - Preparation of the infrastructure needed for the information system (computing capacity [server], data storage and processing equipment [array of disks, switching equipment, etc.] and software licenses required) in 2019 - EUR 40 000;
  - development of an information system, including an integration solution and guarantees for a period of 2 years in 2019 of EUR 120 000 and EUR 75 000 in 2020 (the calculation includes 375 human day and warranty services for developers, a daily rate of EUR 320);
  - Software maintenance and requests for new changes for the next 2 years following deployment in 2019 EUR 30 000 and EUR 25 900 in 2020.

On October 22, 2018, the ME announced that it would enter into an agreement with SIA “Sunberry Systems” for a total contract price of EUR 36905 for the development of additional energy efficiency monitoring and duty management systems, the renewal and maintenance service to be completed on January 31, 2020 (ME, 2018). On January 25, 2019 an agreement with the SIA” Konsorts” for the development of the methodology and the calculation of annual and cumulative energy savings (ME, 2019) was concluded. The amount of the contract was 18176 EUR (ME, 2019).

## Relevance

The aim of implementing this policy measure is to support initiatives in the field of energy efficiency (CoM, 2015). This is also important in the context of the introduction of the energy efficiency policy alternative action plan to achieve the energy end-use savings target for 2014-2020, because the energy efficiency duty paid means that one of the market participants who has a statutory obligation to improve energy efficiency has failed to meet it and this obligation has to be carried out by the energy efficiency fund. Both of these objectives are important and up-to-date, as Latvia has to fulfil its international obligations. Their non-compliance is linked to significant penalties (ME, 16.07.2019.).

## Coherence

This policy measure is aligned with CoM Order No 257 (CoM, 24.05.2017.), here the energy savings obtained by this policy measure are included in the overall energy saving target of Latvia. The second legislative act coordinating this policy instrument is CoM No 668 (CoM, 11.10.2016), which determines the procedure for how the involved parties report on the savings in the energy efficiency monitoring system and how the ME publishes the obtained data on this policy measure.

## Added value

This measure adds value to Altum's activities, as the energy efficiency fund is used to promote energy efficiency in order to create market demand for energy efficiency projects and the funding they require.

## Complementarity

This policy measure is valid for all market participants, as Altum analyzes, trains and informs the behavior of energy consumers in order to create a demand for funding for energy efficiency projects. At the same time, everyone benefits from these activities, and stakeholder interviews mention an increase in public and media interest in the topic. For example, these measures dispel the ingrained myth that energy efficiency measures are very expensive.

## Equality

This policy measure does not restrict equality.

## Sustainability

Altum promoted energy efficiency activities before the establishment of the energy efficiency fund and plans to continue it even in the absence of the fund.

## Compliance

Companies that are potential customers of Altum are perceiving the energy efficiency with an increasing positivity, as it is promoted through training and information activities and it is becoming more popular among companies.

## 5.5. Energy management of municipalities and national direct administrations

Data from the ME were requested in a letter no. 04000-2.2.2-e / 327 (16.10.2019), however no response to the request has been received until the submission of the report. Therefore, the analysis is based on:

- information available on the ME website (ME, 2019);
- the information provided in interviews between the involved parties;
- Information available on the involved parties' home pages (Jelgava, Jelgavas Vēstnesis, 2019), (Kreicmane, 07.04.2017.), (Zemgale, 10.04.2017.), (Daugavpils, Daugavpils City Council, 2019), (Daugavpils, 2018), (CSDD, no date), (Bauska, 2019), Valmiera (Valmiera, 2017), (Jekabpils, 2017), (Rezekne, 2019), (tvnet, 2017), (ritakafija.lv, 2017), (Liepāja, 2016), (Jūrmala, Jūrmala City Council, 2017), (Jūrmala, 2017), (Ādazi, 2017), (Babīte, 2017), (Sigulda, 2017), (Saldus, 2019), (Cēsis, 2016), (VNĪ, 2017), (Stopiņi, 2017), (Smiltene, Municipality of Smiltene, 2017), (DB, 2019), (Tukums, 2016), (Ķegums, 2019), (Šampetera, 2018).
- Other publicly available information, such as the conference on March 7, 2019 on “Energy management in municipalities: achieved and future prospects”. The conference was organised by Riga Technical University and the project co-financed by the European Union, “ActNow!” and “Compete4SECAP”. The aim of the conference was to discuss the experience of existing municipalities in setting up and implementing the energy management system, the certification of the energy management system and the synergy between effective energy management at national, regional and local level. The vision was shared by representatives of ministries of representative industries, municipalities and planning regions (RTU, 2019), the project “Use of new methods in the trainings about climate change adaptation and mitigation” (Ekodoma, 2019), the RTU Institute of Energy Systems and Environment seminars (IESE, n.d.).

### Effectiveness

The Energy Efficiency Law stipulates that the local governments of the republic should implement a certified energy management system and local governments with a territorial development level index of 0.5 or more and a population of 10,000 or more, and state direct administration institutions that own or possess buildings with 10 000 square meters or more of total heated area, implement an energy management system. Local governments and state direct administration institutions should implement the relevant system within one year from the date of entry into force of the mentioned conditions. State institutions and local governments have the right to: 1) develop and adopt an energy efficiency plan as a separate document or as a component of a local government territorial development program, which includes certain energy efficiency objectives and measures; 2) implement an energy management system separately or as part of the implementation of its energy efficiency plan; and 3) use energy efficiency services and enter into energy efficiency service contracts to implement energy efficiency improvement measures.

According to the information from the ME website, available on 11.12.2019. (EM, 11.12.2019): “In order to share examples of good practice, the Ministry of Economics collects information on local governments and state institutions that have implemented an energy management system. Liepāja is the first city in the Republic of Latvia to have implemented an energy management system and certified it according to the ISO 50001: 2011 standard. At the end of 2016, Daugavpils City Municipality also received a certificate confirming the compliance

of the operation of the energy management system with the requirements of the standard LVS EN ISO 50001: 2012. In March 2017, Jelgava Municipality also received an energy management certificate - according to the municipality's forecasts, the system will allow to save more than 1000 MWh of energy per year. Energy management is not introduced only to ensure compliance with the requirements of the Energy Efficiency Law - this is confirmed by Smiltene municipality, which at the end of 2016 voluntarily introduced the energy management system". Figure 5.5. outlines the information available on the EM website.

Urban municipalities of the Republic which are required to implement a certified energy management system in compliance with the requirements of the Energy efficiency act (deadline: 1 April 2017)				Energy savings report submitted on savings achieved in energy efficiency improvements implemented in the previous calendar year **	
Government	Energy management system in place			For 2016	For 2017
Daugavpils	X			X	
Jelgava	X			X	
Jekabpils	X			X	
Jurmala	X			X	
Liepaja	X			X	
Rezekne					
Riga					
Valmiera	X				
Ventspils	X				
Municipal municipalities with an area development rate index of 0,5* or more and a population of xyat or above 100000 *, which should implement an energy management system in compliance with the requirements of the Energy Efficiency Act (deadline: 1 April 2017)				Submission of an energy savings report on the savings achieved in the energy efficiency measures implemented in the previous calendar	
Government	Population at the beginning of the year (people OCMA), 2015	Area development level index (units, NRDA), 2015	Energy management system in place	For 2016	For 2017
Adazu	10714	1,6	X	X	
Babites	10318	1,7	X	X	
Kekava	22788	1,6			
Lielvarde	10773	0,5			
Marupes	17936	2,6			
Olaines	20219	0,7			
Ozolnieku	10628	0,8			
Salaspils	23105	1			
Siguldas	18346	0,9	X	X	
Stopinu	10401	1,5	X		
*Data selection source: <a href="http://raim.gov.lv">http://raim.gov.lv</a>					
Municipalities that have voluntarily introduced energy management				Submission of an energy savings report on the savings achieved in the energy efficiency measures implemented in the previous calendar	
Government	Energy management system in place			For 2016	For 2017
Smiltene	X			X	
Cesis	X				
Saldus	X				
Bauska	X				

National direct administration authorities in the ownership or possession of buildings with a total surface area of 10 000 square metres or more and which, subject to the requirements of the Energy Efficiency Law, have to implement the energy management system (deadline: 1 November 2017)			Submission of an energy savings report on the savings achieved by the implementing energy efficiency improvement measures in the previous calendar year *
National direct management authorities	Authority to which the obligation has been delegated	Energy management system in place	For 2017
Ministry of Defence	Environmental Protection Objects and Procurement Centre Military and	X	
Ministry of Economy			
Ministry of Finance	SAS "National Real Estate"	X	
Ministry of Interior	National Agency for Provision		
Ministry of Welfare	Latvian National Library	X	
Ministry of Education and Science			
Ministry of Transport	VSIA "Latvia railways"	X	
Ministry of Justice			
Ministry of Health			
Ministry of Environmental Protection and Regional Development			
Ministry of Agriculture	Real estate of VSIA "Ministry of Agriculture"	X	

Fig. 5.5. Screenshot from the information published on the Ministry of Economics's home page from the list of local governments and state direct administration authorities that have implemented the energy management system until 16.11.2018.

As can be seen in Fig. 5.5, by November 16, 2018 all cities in the republic have introduced a certified energy management system with the exception of Rīga and Rēzekne. By the time the report is released, no publicly available information is available on whether Riga has complied with the requirements of the law, although it has developed an energy-plan in 2013 (Riga, 2014). Rēzekne received an energy management certificate on February 19<sup>th</sup>, 2019. On the other hand, only 4 out of 10 municipalities that are obliged to the conditions of the law have fulfilled the requirements regarding the implementation of energy management. However, 4 other municipalities not concerned by the law have introduced energy management systems. The municipalities of Tukums and Ķegums have also introduced an energy management system. There is also a similar situation observed in buildings owned by the state direct administration as in municipalities.

This policy measure should achieve a total cumulative energy savings of 150 GWh (CoM, 24.05.2017.). This should be done over the period of 2017-2020. If it is assumed to save the same amount of energy each year, it has to be 37500 MWh/year. The information and publicly available data from the interviews show that the most likely cumulative savings will not be achieved because some municipalities have not introduced an energy management system or developed it late, as well as there are municipalities that have developed an energy management system but are delaying its implementation. Particularly important is the fact that the largest energy consumer and, consequently, the largest energy savings contributor to the overall cumulative savings target – Riga municipality – have not developed an energy management system. This is supported by data from the report on progress towards national energy efficiency targets.

This is confirmed by data from the Report on progress towards the national energy efficiency targets for 2020 in 2017 in accordance with the requirements of Article 24 (1) and Part

1 of Annex XIV to Directive 2012/27 / EU, which shows the measures implemented by municipalities and submitted savings: the new measures amount to 0.3 GWh in 2016 and 0.44 GWh in 2017, but the cumulative savings for 2020 are only 3.28 GWh instead of the planned 150 GWh, i.e. only 2.2% of the target has been reached so far. (ME, 2019)

In addition, the ME informs that “the ME has sent reminder letters to those municipalities that have not submitted information on the implementation of energy management principles with a request to report on the progress of the development of the energy management system. At the same time, the ME added that no sanctions will be imposed to these municipalities. “The implementation of the energy management system is not an end in itself, but a benefit for the municipalities themselves - the opportunity to get a clear idea of their energy efficiency level and opportunities to assess the impact of various measures on energy efficiency, as a result, allowing to allocate the financing to other functions” stressed EM. In addition, the Energy Efficiency Law stipulates that municipalities that have an energy management system in place may receive additional points in the project evaluation process when applying for various support programs and funding.” (tvnet, 2017).

The informative report published by the ME on July 16<sup>th</sup>, 2019 concludes that “currently the Ministry of Economics (Energy Policy Administration Department) has been assigned the functions of monitoring the energy management system in state institutions and local governments, however, these functions are not fully performed due to lack of capacity given that no qualitative and quantitative and detailed evaluation of the reports is made. ” (ME, 16.07.2019.) It is also concluded that it should be implemented as soon as possible or continue to be carried out in a much larger capacity and volume in order to prevent the European Commission from imposing penalties on the Republic of Latvia for non-implementation and non-compliance with EU legislation, e.g. concerning the energy efficiency conditions in transport and monitoring the compliance with energy efficiency improvement obligations.

When analyzing in more detail the reasons why there are no developed energy management systems in the municipalities in accordance to the legislation, it can be concluded that:

- in most municipalities, where energy management systems have been implemented, this has been done within the scope of various projects;
- in some municipalities energy management systems have been implemented under the influence of certification bodies;
- the requirements of the law and the standard of energy management regarding the boundaries of the system are freely interpreted, for example, one municipality includes all energy consumers owned by the municipality, but another - only one building;
- The law does not include sanctions against those who do not comply with the law.

In order to achieve the determined goals, after the development of the energy management system follows its careful implementation. At this stage, most municipalities are unable to achieve their determined goals, and it depends on a number of factors.

- Energy manager - this is the most important factor that determines whether the implementation of the energy management system is successful. The energy manager's competence, knowledge, motivation, personality and other factors influence his / her attitude towards responsibilities and results to be achieved. The distribution of energy managers by type of behavior is similar to the apartment building sector, where the experience of Latvian building managers shows that about 20% of apartment owners are always against building insulation, regardless of the factors implementing the measures (for example, even if insulation is free, these people vote against). ), around 20% is always for the insulation of buildings, regardless of the factors influencing the implementation of the measures, and 60% is the volatile part, which leans towards the



stronger side of the extreme group. The interviews revealed that only about 20% of all energy managers treat their responsibilities with high responsibility, are forward-thinking and have a positive attitude towards the responsibilities assigned to them. About 20% of energy managers do not care about the implementation of the energy management system, although they are responsible for it. The remaining 60% are operational, but the implementation of the energy management system and the achievement of the objectives are not executed smoothly due to a lack of knowledge and competences that can be increased by providing training and exchange opportunities for energy managers. This division in groups is indirectly confirmed by the facts about in which municipalities the energy management system has been developed, but its implementation is going as planned, it is not going smoothly or not being executed at all. Positive examples are Daugavpils' energy manager Helena Trofimova, Mārtiņš Tīdens in Liepāja, Maija Kovāča in Sigulda, Raitis Ignatjevs from Bauska, Edgars Augustiņš in Saldus and 2 energy managers in Gulbene, Ivo Berkolds in Jelgava

- Interest of local government management - energy management system, like other performance improvement systems, can be successfully implemented only if they are supported and actively discussed by the head management of the company / municipality. The information obtained in the interviews confirms this statement - those municipalities where its head management is not interested in the energy management system, its implementation is slow or non-existent and the implementation of the energy management system is a formality required by law. On the other hand, where the head of the municipality provides active support, the implementation of energy management does not cause any difficulties.
- Certified energy management system - the Energy Efficiency Law determines where certified energy management systems must be implemented and where they can be implemented without certification. The information obtained from the interviews shows that a certified system means that external evaluators - auditors of the certification body - come every year to check the progress and set further targets, therefore the energy manager must strive to achieve the goals. In turn, in local governments, where the system is not certified, the evaluation of the system operation is left in the hands of the local government and some energy managers and local government leaders have no motivation to achieve the set goals.
- Lack of explanatory information and communication of the ME - if after the Energy Efficiency Law entered into force the requirements of the law would be interpreted through the prism of benefits the local government can achieve instead of a mandatory obligation, as well as if support to strengthen the capacity of energy managers would be introduced, implementation of this policy measure would be more successful. Solutions already exist and are being offered in various projects, such as the project "Use of new methods in the trainings about climate change adaptation and mitigation" (Ekodoma, 2019), and they should be adopted at the national level.
- Lack of obligatory targets - the law does not set mandatory energy efficiency targets to be achieved by municipalities each year, nor does it stipulate the consequences if these targets are not met. This is confirmed by the position of the ME: "The ME has sent reminder letters to those municipalities that have not submitted information on the implementation of energy management principles with a request to report on the progress of the development of the energy management system. At the same time, the ME added that no sanctions will be imposed on these municipalities. The implementation of an energy management system is not an end in itself, but a benefit for the municipalities themselves." (tvnet, 2017) It enables those municipalities that perceive the requirements of the law as a burden without seeing the benefits of implementing energy

management systems, to implement the systems formally, to set low energy efficiency targets, to set minimum system boundaries or not even try to achieve the targets. This in turn leads to the non-achievement of the country's overall binding energy efficiency targets (ME, Report on progress towards the national energy efficiency targets for 2020 in accordance with Article 24 (1) and requirements of the 1<sup>st</sup> part of the Annex XIV (1) of Directive 2012/27 / EU).

- The myth that the installation of monitoring technologies saves energy and that work with humans is no longer necessary - the interviews revealed that there is a common myth that the installation of energy monitoring systems will achieve the goal of energy savings, so there is no need to perform other activities (eg. communication with energy consumers, technology change, technology regulation, etc.). This shows a lack of knowledge and competence of energy managers, which can be addressed through education, training and exchange of experience.

## Efficiency

The annotation of the energy efficiency law (Cabinet of Ministers, "Energy Efficiency Law" initial impact assessment report (annotation), 2015) does not indicate that this policy measure will create additional expenditures for the state budget. The only position where the costs related to this measure appear is in the annotation of Cabinet of Ministers Regulation No. 668 project (Cabinet of Ministers, September 6, 2016). The annotation indicates the costs related to the transfer and entry of annual energy savings data into the energy efficiency monitoring system are the following:

- filling in the appendix (for a large company, large electricity consumer, state institution, local government, responsible party, state or local government fund) - 1044.00 EUR (8.70 x 40) x (3 x 1);
- filling in the appendix (for a state institution and local government) - 8.70 EUR (8.70 x 1) x (1 x 1);
- report of the state direct administration institution to the ME that states that as of January 1<sup>st</sup> of the current year there are buildings with a total heated area of 10,000 square meters or more: EUR 696.00 (8.70 x 40) x (2 x 1).

Estimates show that the actual costs could be lower, as some municipalities and public direct administrations have not reported about the implementation of a certified energy management system, some have not reported the progress, and the ME has not entered data, analyzed it or published data on energy efficiency monitoring system and on its home page, as it is required according to the Cabinet of Ministers Regulation No. 668.

In municipalities where energy management systems have been implemented within the framework of projects, funds have not been invested from the municipal budget. In turn, the total costs of implementing the energy management system are different, for example, in Jelgava it costed 16000 EUR (Zemgale, 10.04.2017).

The costs of the maintenance and improvement of the energy management system in accordance with the standard LVS EN ISO 50001: 2012 for the outsourcing of the energy manager in Jelgava is equal to 118308 EUR from 2018 to 2023, i.e., 23661 EUR / year (Jelgava, 2018). Assuming that the energy manager, who is an employee of the municipality, receives a full-time salary 20% higher than the national average, the municipality pays approximately EUR 19600 annually. Assuming an average energy tariff (for heat and electricity) of 80 EUR / MWh, the annual cost is equivalent to 245 MWh saved per year.

The Jelgava's energy manager shows that these costs can be recovered every year without investing at all or investing considerably low resources: "Berkolds points out that one of the first steps towards optimal energy consumption in a building is the smart management of existing resources. It is mainly the regulation of heating and ventilation system modes - in many municipal buildings this was technically possible, but was not done before. "Last year we found out that in Jelgava Primary School No. 2 it is necessary to balance the heat supply system, because the temperature in the premises was uneven - in the heating process it was colder on the first floor, but hot on the upper floor. As a result, more heating was needed, but the rooms upstairs were ventilated and heat loss was caused. Taking into account that the regulation option in the building was possible without additional investments, only by balancing the work of the system, the school achieved savings of 50 megawatt hours per year," says I. Berkolds. He admits: there are cases when the regime of the building was regulated, but the result was achieved only with time. For example, Jelgava Secondary School No. 4, working with the adjustment of the heating and ventilation system, has already reduced energy consumption by an average of 11 percent - it is about 76 megawatt hours every year. "In this search mode, the cooperation of the energy manager with the building technicians is especially important, because we can act immediately and provide feedback - they change the technical parameters, but we see a positive or negative result according to consumption data," explains I. Berkolds. Energy savings of more than 20 megawatt hours with regulation have also been achieved in the kindergartens "Kāpēcīši" and "Kamolītis". " (Jelgava, Jelgavas Vēstnesis, 2019)

### Relevance

The aim of the policy measure is to ensure the the rational use and management of energy resources in order to promote sustainable economic development and limit climate change (Saeima, 29.03.2016), i.e., the introduction of energy management in large local governments and state direct administration institutions will ensure the accumulated energy savings from 2016 to 2020 by 150 GWh (Cabinet of Ministers, 24 May 2017). Achieving this goal is very important, because Latvia has difficulties in achieving the planned total cumulative energy savings by 2020, i.e. measures implemented by local governments and submitted reports on savings: the new measures amount to 0.3 GWh in 2016 and 0.44 GWh in 2017, but the cumulative savings for 2020 are only 3.28 GWh instead of the planned 150 GWh (ME, 2019).

Municipalities and public direct administrations that implement the legislative requirements for the establishment and implementation of an energy management system as originally intended when drafting a directive and a law, ensure that the policy measure is adjusted to technological, scientific, environmental and social changes, as they follow the latest technological solutions in cooperation with technology manufacturers, analyzing changes in the interests of the target audience. On the other hand, other local governments and state direct administration institutions, which only formally fulfill or do not fulfill the requirements of the law, do not ensure that the policy measure is adapted to technological, scientific, environmental and social changes.

### Coherence

This policy measure is coordinated with the Cabinet of Ministers Order No. 257 (Cabinet of Ministers, 24.05.2017), where the energy savings obtained by this policy measure are included in the overall energy saving target of Latvia. The second regulatory enactment with which this policy instrument has been aligned is Cabinet of Ministers Regulation No. 668 (Cabinet of Ministers, 11.10.2016), which determines the procedure for how the involved parties report on the savings in the energy efficiency monitoring system and how the ME publishes the obtained

data on this policy measure. This policy measure works in conjunction with fiscal measures, such as the allocation of EU funds, EKII, energy efficiency funds. They significantly strengthen this measure, as they provide financial support for energy efficiency measures carried out by local governments and state institutions, however according to Cabinet of Ministers Regulation No. 668 savings can only be reported once and cannot be reported simultaneously for both policies.

### Added value

During the interviews with involved stakeholders it was mentioned that the added value of this policy measure is the pressure of the social (municipalities) groups as the social pressure of the group (municipalities) - the growing interest in the energy management system, energy plans and energy efficiency in general of other municipalities not concerned by the law that is based on the competition and desire to keep up or perform even better than other municipalities.

### Complementarity

This policy measure was introduced without explanatory information from the ME and has created a communication gap. If, after the entry into force of the Energy Efficiency Law, the requirements set out therein were interpreted through the prism of local government benefits instead of being presented as a mandatory obligation, as well as support was created to strengthen the capacity of energy managers, the implementation of this policy measure would have been more successful. All this was reinforced by the delayed “Methodological Guidelines for the Implementation of the Energy Management System” (EM, 2017) (the requirements of the law came into force on 29.03.2016, but the methodological guidelines were published on the ME website only on 20.09.2017).

In addition, the publicly stated position of the ME that local governments that do not implement the requirements of the law will not be sanctioned and that “the introduction of an energy management system is not an end in itself but a benefit to local governments themselves” (tvnet, 2017) has led to perception of the requirements of the law as a burden without seeing the benefits of implementing energy management systems, therefore systems are formally implemented, negligible energy efficiency targets are set, minimum system boundaries are set or no attempts are made to achieve the targets, as a result it does not contribute to the planned impact on the overall national energy efficiency target.

### Equality

Municipal energy management policies target different energy consumers, but the boundaries set by the system and defined by municipalities and the state can lead to the introduction of energy efficiency measures that do not ensure equality. For example, if a municipality includes only one building in the energy management system, the users of the other buildings are discriminated against because the municipality cannot receive equal treatment with regard to the possibilities offered by the energy management practice.

### Sustainability

Energy plans were developed by municipalities even before the implementation of this policy measure. This was mainly done through various international projects. The implementation of an energy management system is part of the energy plans.

## Compliance

Energy efficiency measures executed in previous years in various sectors have raised public awareness of energy efficiency and its importance. This facilitates the implementation of this policy measure, as the general public has knowledge of various energy efficiency measures. As a result of this policy measure, there are positive changes in the perception of the energy efficiency issues and understanding of energy savings importance among both – the employees of the involved parties and in society.

### 5.6. Energy efficiency monitoring system

The analysis is based on:

- data from the energy efficiency monitoring system provided by ME;
- information available on the ME website (ME, 2019);
- information provided in interviews between the involved parties;
- other publicly available information such as the National Control Report 'Is the existing energy efficiency policy targeted accordingly in order to achieve the projected energy savings?' (SC, 2018).

## Effectiveness

The aim of the Cabinet of Ministers Regulation No. 668 "Regulations Regarding the Energy Efficiency Monitoring and Applicable Energy Management System Standard" (Cabinet of Ministers, 11.10.2016) is to ensure the collection of information on energy efficiency improvement measures, as well as to list energy savings targeted at achieving national energy efficiency goals. (MK, 06.09.2016)

The responsible authority for the implementation of the regulation is the ME, and its main responsibilities are the following:

- to develop and maintain a catalog of energy savings;
- to develop methodological guidelines for calculating energy savings;
- to publish once a year on its website the energy savings achieved by the responsible party of the energy efficiency obligation scheme;
- each year by April 30 to publish on its website an overview of the implementation of the energy management system in state institutions and local governments on its website;
- each year by March 1, compile information on the energy savings achieved in the country for the year preceding the previous calendar year.

Already in 2018 in the report by State Audit Office (SC,2018) it is stated that "one of the objectives of this audit was to ascertain whether the specified measures will ensure the achievement of the planned final energy consumption savings. It should be noted that Latvia has relatively little time left to achieve the binding (mandatory) targets set for the period (2014-2020), thus it is the last moment for the Ministry of Economics to act proactively and responsibly to ensure the achievement of the targets". The ME responds to this that "the identified problems are based on the reasons related to the prioritization of public policy, as well as the chronic shortage of resources and capacity allocated for the development and implementation of energy efficiency policy. There are many different acute problems in the country, where the field of audit - energy efficiency - is not always a priority. The time and financial resources allocated to solving energy efficiency problems are most often insufficient, which results in various shortcomings and solutions that are not always fully in line with the requirements of EU regulations. As the field of

energy efficiency is horizontal and significantly overlaps with other sectors (finance, economy, transport, energy, construction, social field, environmental protection), the solution proposed by the Ministry of Economics has not always resulted in the initially planned form.”

The informative report by ME on July 16, 2019 (ME, 16.07.2019) states that “currently the Ministry of Economics monitors energy efficiency in the scope of its capacity:

- the registration of the reports information according to the Regulation No. 668 is performed by the Energy Policy Administration Department
- annual reporting is done by the Sustainable Energy Policy Department;
- however, the assessment of the progress made towards the achievement of the energy efficiency goals is performed by the outsourcing services, as the amount of work and methodological requirements required to evaluate the progress exceed the competencies and available capacity of the employees of the Ministry of Economics.

To perform these functions, the ME has 2 work-loads and two 0,4 work-loads, that is insufficient as to perform these functions adequately at least 4 work-loads are necessary.”

The ME also concludes that 2,8 work-loads are available for the performance of duties and tasks, but at least 6 work-loads are required, therefore the ME report envisages the establishment of a separate Energy Efficiency Monitoring Division (5 work-loads), including Head of Unit (1 work-load), Senior Expert (2 work-loads), Senior Legal Adviser and Legal Adviser (2 work-loads). The responsibilities of this unit would be to administer energy efficiency issues, including the performance of existing functions:

- administration of the energy efficiency obligation scheme;
- monitoring the fulfillment of energy management implementation obligations in state institutions and local governments;
- compiling a list of large energy consumers and large companies, monitoring the fulfillment of mandatory energy audits and energy management obligations, and compiling reports on the measures taken;
- monitoring of voluntary agreements;
- administration of the energy efficiency fee;
- monitoring the achievement of energy efficiency targets;
- performance of new functions (for the performance of these functions there are currently no official work-loads in the ME and at least two official work-loads would be required for their performance);
- maintaining a register of energy efficiency service providers;
- administration of reports submitted by energy auditors

The energy efficiency monitoring system did not have to be re-created, as already on September 30, 2010, Cabinet of Ministers Regulation No. 923 “Procedures by Which State Energy End-use Savings Shall Be Measured and the Operation of the Energy Efficiency Monitoring System Shall Be Ensured” (Cabinet of Ministers, 30.09.2010) was introduced and came in force. The regulation expired on October 1, 2016, when it has been replaced by Cabinet of Ministers Regulation No. 668. Regulation no. 923 required that:

- total energy savings are monitored and the operation of the energy efficiency monitoring system is ensured by the ME;
- energy savings are accounted for for each energy efficiency measure in each energy end-use sector (household, service, industry, transport, public and municipal);
- each year by July 1, the ME on its website publishes information on the results of energy efficiency monitoring achieved in the previous calendar year.

The information had to be reported by the responsible authorities that have granted direct payments to energy efficiency improvement project implementers from the state or municipal budget, state or municipal guarantee, loan interest rate subsidies from state or municipal funds or provided other financial assistance to energy efficiency improvement project implementers from state or municipal funds, as well as the responsible institutions that comply with the requirements of section 1, paragraph 1 of the European Union structural funds and Cohesion fund management law.

The necessary information specified in the Cabinet of Ministers Regulation No. 923 can be found on the ME website only for 2010–2012. (ME, 2019) and only a part of the information required by the requirements of the Cabinet of Ministers regulation is publicly available, for example, there is a lack of information on proposals for development of existing and new energy efficiency measures and energy services, as well as proposals for improving energy efficiency in each energy end-use sector.

According to the Cabinet of Ministers Regulation No. 668 the ME is obliged to collect information on the energy savings achieved in the country in the year preceding the previous calendar year by March 1 each year, and the first such information has to appear on the ME website already on March 1, 2017 for the results of the year 2015. There is no information available on 2015, nor on 2016 and 2017 on the ME website. In addition, the ME is obliged to publish on its website once a year the energy savings achieved by the responsible party of the energy efficiency obligation scheme, and to publish a report on the implementation of the energy management system in state institutions and municipalities by April 30 each year. This information is also not publicly available.

This is confirmed by the fact that within the scope of this project the access to the data of the energy efficiency monitoring system was requested and the ME provided only the following:

- anonymised raw and unverified data on large companies and large electricity consumers for the years 2016 and 2017;
- partial data on municipal energy management.

The ME argues on the unfulfilled obligation on the energy efficiency monitoring administration: “Currently, energy efficiency monitoring is performed by the Ministry of Economics (registration of information reported is performed by the Energy Policy Administration Department, the annual reporting is performed by the Sustainable energy policy department), however, the progress towards the achievement of the energy efficiency goals is assessed by purchasing the outsourcing services, as the amount of work and methodological requirements required to assess progress exceeds the competence and available capacity of the employees of the Ministry of Economics.” (EM, 16.07.2019)

When analyzing the ME argumentation in more detail, it can be observed that the reasons for the limited capacity of the ME.

- The ME has had an energy efficiency monitoring system since 2010, in which information provided by project financiers was recorded. In 2016, the monitoring system had to be supplemented with sections on energy efficiency obligation system, the implementation of energy management in state institutions and municipalities, list of large energy consumers and large companies, voluntary agreements with the participants and energy efficiency duty payers. The ME was able to prepare for it in time, as the requirements of the Energy Efficiency Directive (EU, 2012) were already known in 2012 and their implementation in Latvia was considered in the concept of Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (Cabinet of Ministers, 02.12.2013). Since the legislation came into force, documents have been submitted both electronically and on paper format and then

entered manually into an Excel file on a computer instead of online version, where the data is automatically entered into a database, therefore EM staff spent their time for mechanical data collection instead of data analysis. Such technical solutions are widely available, are not complex and do not require large investments, as there is no need to enter complex and large amounts of information, as well as no complex data analysis is required.

- ME has 2,8 wor-loads or about 5000 human-hours per year. This staff is responsible for the administration of energy efficiency obligation scheme, monitoring the implementation of energy management obligations in public authorities and municipalities, compiling a list of large energy consumers and large companies, monitoring and reporting on mandatory energy audits and management reports, monitoring voluntary agreements, administration of energy efficiency duties and setting energy efficiency targets. Most of the time is spent manually entering data into Excel files, and relatively little time is left for other activities. If approximately 1,350 companies have to be manually entered into the system each year, 3,7 hours per year can be devoted to each company. If the company has one object and it has carried out energy efficiency measures in all five areas, then in accordance with Cabinet of Ministers Regulation No. For 668 annexes, it submits the completed 22 boxes in a table that is on one page. However, data analysis shows that companies fill in an average of 12 boxes. These numbers must be entered by the EM staff in an Excel file. The rest of the time EM employees can spend on data analysis and communication with companies.
- The report does not explain what competencies ME employees lack in order to analyze progress towards energy efficiency targets. It would be in the interest of the ME to analyze the missing competencies and find a solution on how to acquire / increase these competencies for the existing ME employees. This would increase the knowledge and understanding of the ME employees about the processes of increasing energy efficiency and the necessary improvements of regulatory enactments.

On October 8, 2019, information was published on the website of the Ministry of Economics which stated that “The Ministry of Economics is currently working on further development of the electronic energy system functionality so that annual reports and other documents submitted to the Ministry of Economics under the Energy Efficiency Law can be submitted by all parties involved”.

On October 22, 2018, information was published on the website of the ME that said that the ME will enter into an agreement with SIA “Sunberry Systems” for the development of the energy efficiency monitoring and duty administration system, implementation of change requests and maintenance. The total amount of the contract is EUR 36905, but the contract expired on 31 January 2020. (ME, 2018)

According to the information found on the website of the Ministry of Economy on January 25, 2019, an agreement was concluded with SIA “Konsorts” on the development of methodology and calculation of annual and cumulative energy savings. (EM, 2019) The total amount of the contract was EUR 18176, and in the scope of the contract it was planned to:

- develop a methodology for calculating energy savings from changes in excise duty on fuel and changes in taxes of carbon dioxide emissions specified in regulatory enactments and for calculating annual and cumulative energy savings;
- develop a methodology for calculating energy savings from different types of energy efficiency improvement measures in transport and for calculating annual and cumulative energy savings;



- to develop a methodology for calculating energy savings from the introduction of changes in construction standards in the period from 2014 to 2018 and for calculating annual and cumulative energy savings.

The contractual obligations for this study had to be fulfilled within 70 days of the conclusion of the contract, i.e. in March 2019. The obtained result is not publicly available.

From January 1, 2020, the responsibilities of the ME in accordance with the Cabinet of Ministers Regulation No. 668 implementation is taken over by the State Construction Control Bureau.

ME in accordance with Cabinet of Ministers Regulation No. 668 developed an energy savings catalog, the first version of which included more measures than the current version. Several interviews mentioned that the range of measures proposed is very limited.

### Efficiency

In the annotation of the draft of Cabinet of Ministers Regulation No. 668 there is no included financing for the supplementation and maintenance of the energy efficiency monitoring system (MK, 06.09.2016).

In the project annotation of the Cabinet of Ministers Regulation No. 202 (Cabinet of Ministers, 13.02.2017) it is stated that in accordance with the Energy Efficiency Law, 10% of energy efficiency duty revenues will be provided to cover EM expenses related to monitoring the achievement of energy efficiency objectives, reporting, as well as maintaining the energy savings database, including the following:

- ensuring monitoring the achievement of energy efficiency targets - outsourcing of research based on energy savings calculations in areas where direct measurement of energy consumption is not available (tax measures, information measures, etc. measures related to the behaviour of energy consumers.) A total of 3 studies are planned for a total amount of EUR 30 000 in 2018.
- Reporting to the European Commission: reporting and planning obligations on the transposition of the requirements of Directive 2012/27/EU on energy efficiency into the regulatory framework and the assessment of the climate and energy policy frameworks for the period 2020-2030 (KEPS2030) include energy data processing, calculation and analysis, including, where appropriate, conducting a strategic environmental impact assessment such as: (1) Annual progress report on progress towards the national energy efficiency target in accordance with Annex XIV to Directive 2012/27/EU; (2) Comprehensive assessment of the potential for high-efficiency cogeneration and efficient district heating and cooling use (outsourced) to be carried out every 5 years; (3) Sustainable Energy and Climate Strategy and National Energy Efficiency Action Plan to be developed in accordance with the model approved by the European Commission to the Commission. In order to ensure the preparation of the mentioned documents, while ensuring the administration of the energy efficiency duty, which will be performed by the ME starting from 2018, funding is required to ensure the remuneration of ME employees without creating new positions, documentation related to implementation of energy efficiency measures, fees for control of payment, as well as for regular coordination of supervision (in 2018 - in the amount of 25,314 EUR; in 2019 - in the amount of 42,000 EUR; in 2020 - in the amount of 44,000 EUR);
- implementation and maintenance of energy saving information system:
  - development of the technical specification (outsourcing) in 2019 - EUR 20 000;

- preparation of the infrastructure needed for the Information System (computing capacity [server], data storage and processing equipment [array of disks, switching equipment, etc.] and software licenses required) in 2019 - EUR 40 000;
- the development of an information system, including an integration solution and guarantees for a period of 2 years in 2019 of EUR 120 000 and EUR 75 000 in 2020 (the calculation includes 375 human day and warranty services for developers, a daily rate of EUR 320);
- the maintenance of a software and requests for new updates for the next 2 years following its introduction in 2019 at EUR 30 000 and EUR 25 900 in 2020.

Lack of additional funding for the implementation of the Cabinet of Ministers Regulation No. 668 meant that the obligation to supplement and maintain the monitoring system is imposed on the existing EM employees as an additional obligation. This led to the ME being unable to fulfill its responsibilities. On October 22, 2018, the ME entered into an agreement with SIA “Sunberry Systems” for the development of additions to the energy efficiency monitoring and duty administration system, implementation of change requests and maintenance. The total amount of the contract is EUR 36905, but the contract expired on 31 January 2020.

The website of the Ministry of Economy provides information that on January 25, 2019, an agreement was concluded with SIA “Konsorts” on the development of the methodology and calculation of annual and cumulative energy savings. The total amount of the contract was equal to EUR 18176.

### Relevance

The aim of the policy measure is to ensure the collection of information on energy efficiency improvement measures, as well as to list the energy savings achieved that contribute to the overall achievement of the state energy efficiency objectives (Cabinet of Ministers, 06.09.2016). This policy measure remains in line with a goal that is relevant and very important to achieve. With the help of this measure, Latvia can prove that it counts all energy savings, they have been verified and the analysis of the obtained results allows to take actions that would help Latvia to fulfill its obligations, as Latvia has difficulties in achieving the planned total cumulative energy savings by 2020.

### Coherence

This policy measure is coordinated with the Cabinet of Ministers Order No. 257 (Cabinet of Ministers, 24.05.2017), where the energy savings maintained by this policy measure are included in Latvia's overall energy savings target and the quality of information is a very important precondition for achieving Latvia's targets.

This policy instrument is linked to a number of other positions of legislation, as it sets out the procedures for stakeholders to report savings in the energy efficiency monitoring system and for the ME to publish the findings on this policy measure (for details, see Figure 3.10 in Chapter 3). Feedback from stakeholders is very important in this process, but due to the lack of EM capacity currently it does not actually happen.

### Added value

The added value of this policy measure cannot be assessed at present, as it is only partially implemented.

### Complementarity

It is currently not possible to assess the validity of this policy measure, as it has only been partially implemented.

### Equality

It is currently not possible to assess the impact of this policy measure on equality, as it has only been partially implemented

### Sustainability

It is currently not possible to assess the sustainability of this policy measure, as it is only partially implemented.

### Compliance

It is currently not possible to assess the acceptability of this policy measure, as it has only been partially implemented.

## **5.7. Plan for alternative energy efficiency policy measures to achieve the energy end-use savings target for 2014-2020**

The plan is analyzed by looking at the impact of voluntary agreements of energy efficiency obligation scheme, and the impact of the energy management implementation of the large companies, large electricity consumers, municipalities and public direct management institutions on the achievement of the projected energy efficiency target, by comparing planned and actual energy savings and factors influencing their success or failure.

### Effectiveness

The plan entered into force 1.5 years after the beginning of the period considered by the plan. Figure 5.6 shows the contribution of all measures in the plan to the cumulative savings target. Slightly more than half of the savings are planned to be achieved through a voluntary agreement (52%), followed by measures already taken in 2014-2015. Other planned alternative measures (12%), measures still to be clarified (9%), energy audits in large companies (8%). Energy efficiency obligation scheme (2%), large electricity consumers (1%) and energy management in municipalities and public administration institutions have the lowest share.

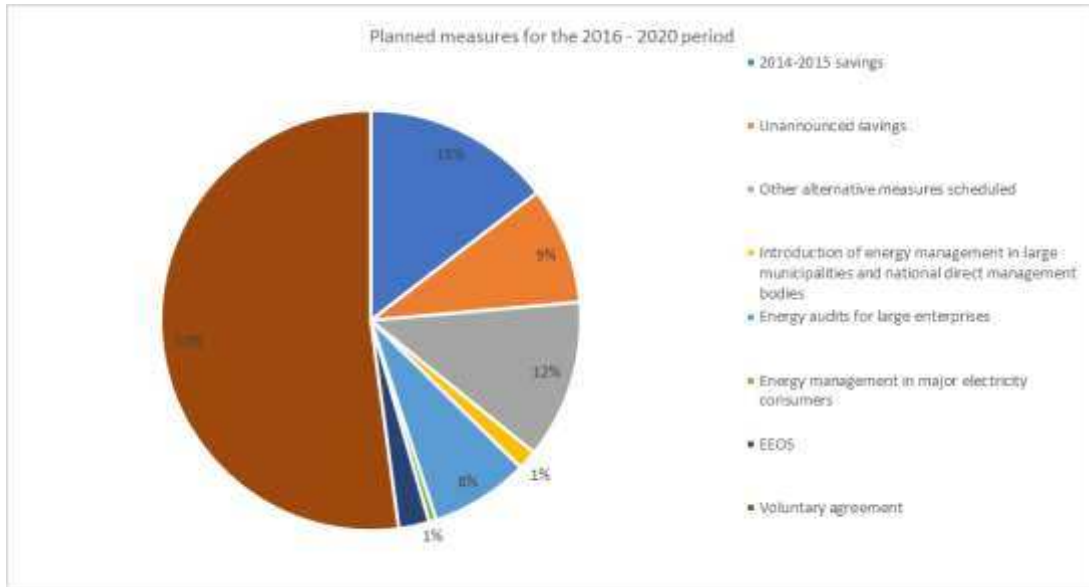


Fig. 5.6 Share of the contribution of all the measures projected in the plan to the cumulative savings target

If the plan separately analyzes the distribution of energy management of energy efficiency obligation scheme, voluntary agreements, large companies and large electricity consumers, municipalities and state direct management institutions only in the overall goal of these measures, then it can be seen that 81% of savings are planned through voluntary agreements, 17% from energy audits and energy management of large companies, 4% - of energy efficiency obligation scheme and the least - of large electricity consumers (1%) and energy management of local governments and state direct management institutions (2%) (see Figure 5.7).

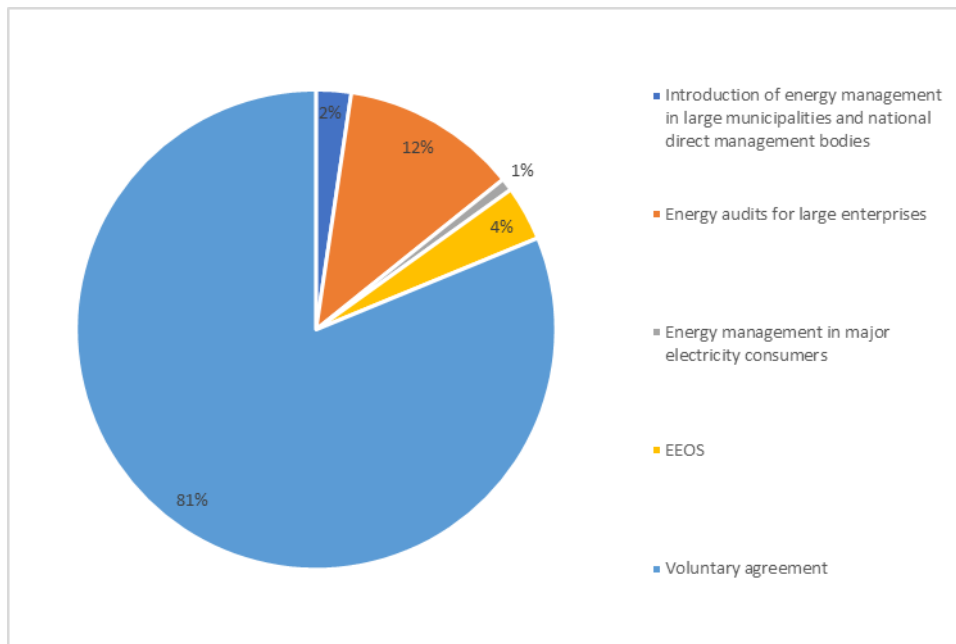


Fig. 5.7 Distribution of energy efficiency obligation scheme, voluntary agreements, large companies and large electricity consumers, municipalities and state direct management bodies contribution for the overall target of this measure

In 2018, the public part of the report of the State Audit Office (SC, 2018) states that “one of the objectives of this audit was to ascertain whether the specified measures will ensure the achievement of the planned final energy consumption savings. It should be noted that Latvia has relatively little time left to achieve the binding (mandatory) targets set for the period (2014 to 2020), thus it is the last moment for the Ministry of Economics to act proactively and responsibly in ensuring the achievement of the targets”. The State Audit Office also concludes that “achieving the goal is still a challenge for Latvia”. The ME writes on this statement that “the recommendations of the [State Audit Office] are balanced and will improve the work of the institution. At the same time, given the timing of the audit, the implementation of the recommendations has no direct impact on the achievement of final consumption savings, as the measures to achieve the target, the funding allocated to them and the conditions for accompanying measures up to 2020 are already in place. ” Thus, the ME points out that no changes in energy efficiency regulations are planned until 2020, although at the end of 2018 it was already clear that the goals would most likely not be achieved because the planned policy measures (Cabinet of Ministers, 24.05.2017) had not yielded the expected results.

This contradicts the statement of the ME in the plan (Cabinet of Ministers, 24.05.2017), which states that “in order to achieve the mandatory target depending on the amount of savings that will be provided by energy efficiency obligation scheme and voluntary agreements, additional alternative measures must be considered in time. Given the ability of energy supplier companies included in the energy efficiency obligation scheme to promote efficiency of the customers, as well as the flexibility provided to the parties through voluntary agreements, the energy savings achieved may not be sufficient to cover the mandatory energy savings target. In such case, additional alternative measures should be identified and implemented, and public budget resources should be provided to promote them. Possible additional measures that could contribute to the mandatory target for the period up to 2020 include the following:

- new programs for improving energy efficiency financed by the Emission Allowance Auction Instrument (hereinafter - EKII) (responsible institution - VARAM);
- changes in energy-related taxes, which will be assessed and proposed in the development of the Tax Policy Guidelines 2017-2021. (responsible institution – Ministry of Finance);
- voluntary agreements with organizations representing the interests of companies on the issues related to energy audits and energy management in small and medium-sized enterprises (responsible institution - ME);
- other new measures directly aimed at energy efficiency, the implementation of which would require additional funding from the national budget. ”

In response to the conclusions of the audit of the State Audit Office, the ME in accordance with the planned implementation activities of the recommendations:

- will carry out an assessment and evaluation of interim results of the progress towards the achievement of energy end-use savings target for 2014-2020 of the Alternative Measures Plan of the Energy Efficiency Policy, which will include an updated assessment of existing and planned energy savings and concrete proposals for possible additional measures;
- will develop regulations of the Cabinet of Ministers, which will enable the State Energy Efficiency Fund to provide support for the promotion of voluntary agreements on energy efficiency;
- prepare and send an information letter on the advantages and good practices of the energy planning and energy management system to the municipalities

for which the implementation of the energy management system is mandatory, as well as to the municipalities for which no energy efficiency plan has been developed or energy efficiency targets and measures have been set;

- assess the need to improve the energy efficiency monitoring system.

Actual and projected cumulative savings in 2020 from energy efficiency obligation scheme, voluntary agreements, energy management of large companies and large electricity consumers, municipalities and state direct management institutions, energy efficiency fund and energy efficiency duties are shown in Figure 5.8. It shows that both the overall amount and the impact of individual policy measures vary. The planned cumulative savings are 4.5 times higher than the actual ones. The biggest benefit was expected to come from the voluntary agreement, but this measure will actually reach 1.1% of the target. The actual savings of local governments and state direct administration institutions will amount to only 2.2% of the planned. In turn, both energy efficiency obligation scheme and large companies and large electricity consumers will meet and even exceed the target. The actual savings of energy efficiency obligation scheme will exceed the planned ones by 67%, but large companies and large electricity consumers - by 20%.

However, both measures represent a relatively small part of the overall savings target: 3.7% of energy efficiency obligation scheme and 12.7% of large companies and large electricity consumers.

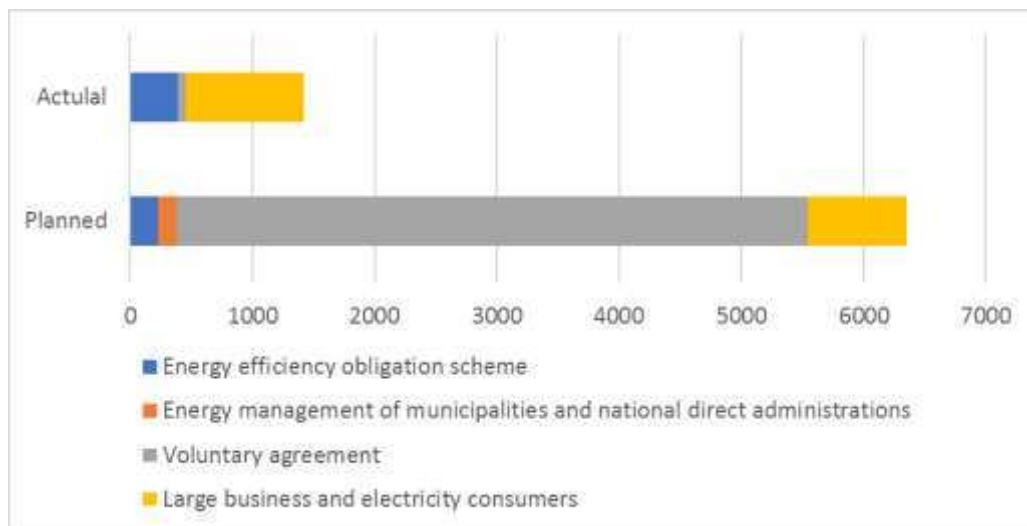


Fig. 5.8 Actual and planned cumulative savings in 2020 from energy efficiency obligation scheme, voluntary agreements, energy management of large companies and large electricity customers, municipalities and national direct management bodies

The more detailed actual and planned cumulative savings of policy measures in 2020 from efficiency obligation scheme, voluntary agreements, energy management of large companies and large electricity consumers, municipalities and state direct management bodies can be seen in Figure 5.9.

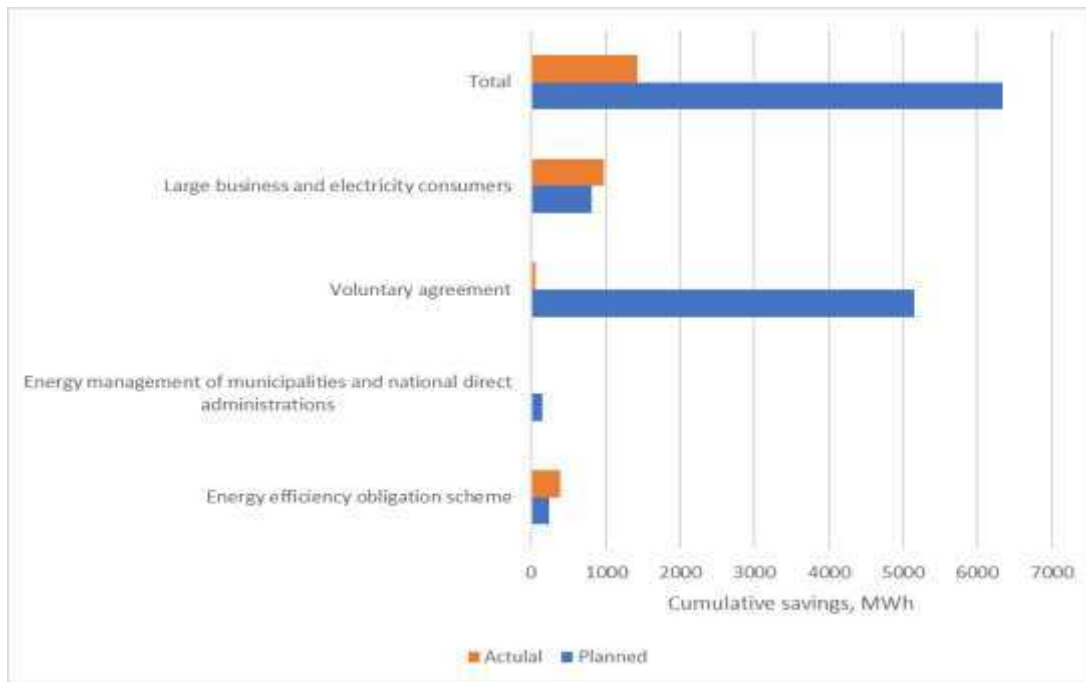


Fig. 5.9 Actual and planned cumulative savings of policy measures in 2020 from efficiency obligation scheme, voluntary agreements, energy management of large companies and large electricity consumers, municipalities and national direct management bodies

The consequences of non-fulfillment of the obligations are calculated in the informative report of the ME "On solutions for the abolition of the mandatory procurement component of electricity and the functions of implementing the energy policy" (ME, 16.07.2019). The European Commission will apply these penalties to the Republic of Latvia as soon as a failure to perform a function is established or when a state's obligation or target - RES share target, energy efficiency target, energy efficiency target for buildings, target for the share of renewable energy in transport - is not met. It is possible to estimate the fines imposed for non-achievement of each target set for the Republic of Latvia. In the case of the Republic of Latvia, the minimum penalty for each day until this goal is reached is 372.6 EUR per day, but the maximum - 22 356 EUR per day. The minimum basic amount of the lump sum penalty payment is 124.2 EUR per day, but the maximum - 2484 EUR per day. As the penalty payment can be applied at the same time as the fine, the maximum financial penalty, if added together, could be EUR 24 840 per day or EUR 9.067 million per year. At present, it is not possible to calculate the amount of the fine that the European Commission will impose on the Republic of Latvia for failure to perform the functions or obligations specified in the EU regulatory enactments, as they may vary depending on the impact and duration of the violation. (EM, 16.07.2019)

In the prepared Latvian report on "Report on progress towards meeting the national energy efficiency targets for 2020 for 2017 in line with the requirements of Article 24(1) of Directive 2012/27/EU and Annex XIV, Part 1" (ME, 2019), energy tax measures (nearly 60% of the energy savings achieved) have provided the largest cumulative energy savings. The report states that "the tax savings are calculated based on data on actual energy consumption, price flexibility and the difference between the energy tax rates determined by Latvia and the EU minimum tax rates. The report analyzes "energy taxes (above EU minimum rates) that lead to a reduction in direct energy consumption (excise duty, VAT, electricity tax)". Although no further information is provided on the chosen method of analysis, it is possible that the method described in more detail in the study "Development of the Energy Efficiency Fund's operating model and

methodology for determining the amount of contributions of parties included in the energy efficiency obligation scheme" was used. (PWC, 07.03.2016.) The analysis uses the price elasticity coefficient (depending on the demand for the product and the price of the product), the actual tax rate, energy end-use and minimum tax rates in accordance with EU Directive 2003/96 / EC.

The study "Evaluation of Fiscal Measures in the National Policies and Methodologies to Implement Article 7 of the Energy Efficiency Directive" (EuropeEconomics, 2016) explains that

- The impact of energy or CO<sub>2</sub> taxes on final energy consumption depends on a number of factors that influence supply and demand and the resulting price dynamics. If these factors are not taken into account, the energy savings from energy or CO<sub>2</sub> taxes reported by Member States under the Energy Efficiency Directive may not reflect the savings that could occur in practice;
- When analyzing any policy intervention, it is important to assess impacts that can be directly attributed to the policy and are not the result of the impact of other factors. It is particularly important to take into account all other factors that may reduce the impact that can be attributed to a particular policy when designing a sound 'baseline' to limit the impact of fiscal intervention;
- When using econometric equations, explanatory variables are often included to the right of the equation to control external factors that could affect energy demand. It is good practice to include constants, income parameters and climate effects, as well as sometimes a calendar effect. The constant reflects the value of basic consumption that market participants would purchase if the price of the product were zero. Income parameters depend on the sector, for example, government income is characterized by GDP, industrial income is characterized by the value of output, and for households - household income. The climate is characterized by the daily or average outdoor temperature of the heating or cooling degrees. The calendar effect is taken into account as a parameter with a value of 0 or 1 to denote a year, month, and so on. Households are usually characterized by household characteristics, demographics, types of electrical appliances, etc. Other important parameters such as the number of cars, the income of state-owned enterprises, the amount of foreign investment, etc. can also be included as explanatory variables.

Data from the report of Ministry of Finance of the Republic of Latvia "Tax Relief Report for 2017 (with legislative changes that came into force from 2018)" (FM, 2018) and State Revenue Service (SRS) data on fuel circulation (SRS, 2017) show that none of the mentioned taxes in the report (excise duty, VAT, electricity tax) in the period from 2014 to 2017 has increased or its changes have been insignificant:

- excise duty on diesel fuel will not increase in 2014 and 2015 and is equal to 332.95 EUR / 1000 l, but in 2016 it increased to 341.00 EUR per 1000 liters or by 0.0081 EUR per 1 liter. In 2017, the rate remains unchanged;
- excise duty on unleaded petrol remains unchanged and is 411.26 EUR per 1000 liters, but in 2016 it increased to 436 EUR per 1000 liters or by 0.02474 EUR / l. In 2017, the rate remains unchanged;
- excise duty on natural gas is unchanged - for natural gas used as fuel is 17.07 EUR / 1000 m<sup>3</sup>, but for that used for industrial production and processing of agricultural raw materials is 5.65 EUR / 1000 m<sup>3</sup>;
- VAT on fuel is constant;
- VAT at reduced rate (12%) for heat supplies to the population throughout the period;



- There are significant exemptions from the electricity tax during this period, which covered most of the electricity produced and consumed. In 2017, some exemptions were removed, but this did not significantly affect the final tariff;
- According to the information published on the Public Utilities Commission's (PUC) website about district heating tariffs, the share of excise duty in district heating tariffs forms a small part of the final energy tariff - from 1% to 5% of the final energy tariff.

In addition, the tax impact analysis does not take into account:

- explanatory variables - GDP, population, climate, number of cars, etc. This is especially important when analyzing data on the period of economic crisis, which was in Latvia from 2008 till about 2011;
- how flexible is the demand, for example, the demand of energy consumers connected to district heating is inelastic because they have limited opportunities to change energy source or reduce energy consumption. Energy consumption can be reduced either at the expense of comfort alone or through significant investment in energy efficiency measures. However, state support for such measures is very limited and not enough for everyone who wants to receive it;
- no analysis has been made of the impact of tax changes on different income groups, especially in cases where the state does not offer subsidies to cover the capital costs of energy efficient technologies;
- the impact of any policy is delayed, because the energy consumer receives the information with a delay, it takes time to process the information, the decision to implement a measure taken under the influence of the policy measure also takes time to implement.

### Efficiency

The effectiveness of the individual policy measures included in the plan varies significantly (see each measure separately).

### Relevance

The whole set of policy measures included in the plan would contribute much better to achieving the objective of the plan if a regular analysis of the measures already in place and policy adjustments were carried out. A number of key factors have been identified separately in each of the measures which hamper their qualitative implementation and achievement of the targets set (see each measure separately). For example, the energy efficiency monitoring system, which is the main tool for data collection and analysis of this plan, does not function for 8 years. On the other hand, the voluntary agreement, which existed in the same form since 2011 (CoM, 12.07.2011), was continued in the implementation of this plan and was expected to give nearly half of the target, although experience has shown that no member had signed it.

### Coherence

The plan involves a series of other legislative acts described in detail under each individual policy measure in other chapters of this study.

### Added value

The added value of the policy measures included in the plan is the development of public awareness of energy efficiency and other activities that reduce impact on the environment.

## Complementarity

Most of the policy measures of the plan were introduced without explanatory information from the Ministry of Economics and have created a communication gap. If, following the entry into force of the Energy Efficiency Law, the requirements set out therein were explained through the prism of benefits rather than being presented as a compulsory obligation, and larger support system would be provided for those who introduce energy efficiency measures, the implementation of that plan would be more successful.

## Equality

The impact of individual policy measures included in the plan on equality is different (see each measure separately).

## Sustainability

The sustainability of this policy framework is linked to Latvia's international commitments and EU requirements.

## Compliance

All policy measures introduced under the plan have raised public awareness of energy efficiency in different sectors. Whether this understanding is positive or negative depends on the industry or sector. Large companies and large electricity consumers have a negative attitude, it is both positive and less positive in municipalities, but it is more positive among energy efficiency obligation scheme customers.

## 6. CONCLUSIONS

This chapter contains conclusions on energy efficiency policies analysed in Chapter 4. The findings are based on a theory-based policy analysis combined with the “The Better Regulation Agenda” criteria and key factors described in the introduction to this study, as illustrated in Figure 1.1, and based on information derived from different sources of information:

- Information provided by the Ministry of Economics from the energy efficiency monitoring system, where unverified and unprocessed data from large companies and large electricity consumers and municipalities is available. By the date of submission of this study, we have not received any additional information requested by letter 04000-2.2.2-e/327 of October 16, 2019.
- Interviews of the stakeholders involved.
- Publicly available information.

### 6.1. General conclusions on the methodology

- During the study we encountered a problem with data availability. The information requested from the Ministry of Economics was also not received within 3 months. For this reason, the study is largely based on interviews from stakeholders and sources of publicly available information. The biggest part of the State Audit Office Audit Report, “Is a targeted energy efficiency policy in place to achieve the expected energy end-use savings?” (SAO, 2018), which is one of the main sources of information and which is publicly available, is confidential, although there are no clear reasons for this secrecy.
- For most legislative acts, annotations are available, which provide detailed enough information needed to elaborate theoretical basis for the chain of causalities.
- Information from both interviews and publicly available information was used to identify the success and error factors required for analysis of theory-based policy. During the study, it was observed that there was no great difference in opinion between respondents.
- In the course of the study, the Ministry of Economics made a number of significant legislative changes, but they are not covered by the study, as they took place during the last days of the study.

### 6.2. General conclusions on energy efficiency policy

- The most important prerequisite for the success of energy efficiency policies is the existence of clear objectives and the powers of the policymaker: an organisation or programme with clear mandate, a defined responsibility and adequate resources. In Latvia, the Energy Department of the Ministry of Economics is responsible for implementing energy efficiency policy, which has been dealing with this subject for many years. It has been and is still responsible for the implementation of EU energy efficiency policies in Latvian legislation and their implementation in practice. Although MoE has accumulated experience for three decades, its professional skills and capacity remain limited. This can be seen in Latvia’s limited capacity to implement the requirements of EU directives, including delayed transposition of the requirements of EU directives into Latvian legislation, delayed implementation of legislative requirements, lack of ex-ante analysis before the introduction of policy measures, ex-post analysis in the course of the implementation of policy measures, lack of communication with the stakeholders involved and lack of feedback. Therefore, most policy measures are introduced formally, with minimal

interest and understanding. Instead of performing activities to enhance the professional competence of its employees, a number of tasks are outsourced. In many interviews conducted in the framework of this study, this is mentioned as one of the main shortcomings for the successful implementation of energy efficiency policy. The study shows that Latvia has developed a paradoxical situation – while the body responsible for energy efficiency policy - the Ministry of Economics, explains problems with the achievement of Latvia's objectives with a lack of competence and capacity, "Altum" is doing an active job to boost the rate of energy efficiency growth. This financial institution has to take targeted action to increase market demand for energy efficiency, which would allow it to achieve its main objective of increasing its portfolio of loans for energy efficiency projects. Unlike MoE, "Altum" actively analyzes the market, trends, energy consumers, their behaviour and looks for opportunities to increase demand for energy efficiency services.

- The ability to balance and combine flexibility (ability to adapt to changing conditions and ability to reduce potential factors of failure in the implementation process) and continuity (stable and predictable conditions) – these two factors are also the responsibility of the Ministry of Economics, whose limited competence and capacity hinder the flexible response to changing conditions and timely prevention of failing factors, as well as ensuring stable and foreseeable conditions. This is further hampered by a lack of transparency in policy-making and implementation. Many interviews of stakeholders identified legislative unpredictability as one of the biggest barriers, leading to negative attitude towards the state, energy efficiency, environmental challenges, and an increasing legal nihilism, such as MoE requiring stakeholders to comply with their legislative obligations, while their responsibilities related to energy efficiency monitoring system are not being fulfilled for 8 years already.

- The involvement of stakeholders in the design and implementation of policy measures is an important success factor as it promotes flexibility. This measure has two objectives: to increase the adoption of policy measures and, at the same time, to improve efficiency by ensuring that the needs and expectations of stakeholders, including simple and clear rules, are taken into account throughout the process, and examining of documents takes place within a short time. In Latvia, it depends on the communication of MoE with stakeholders, and it is rather limited because it takes place in a formal way and in a narrow circle.

- The Ministry of Economics has limited capacity to adapt and merge different existing policies or to develop consistent sets of policy measures because it lacks professional competence. Outsourcing of policy analysis and development of plans is evidence to this.

- The responsible departments of the Ministry of Economics have to carry out both policy development and implementation as well as monitoring at the same time.

- Success and failure of implementing policy measures depends on the human factor: individuals at all levels (in different jobs in civil service and companies, also individuals), who are progress-oriented and interested in their work ensure that energy efficiency measures are implemented, but unmotivated and indifferent individuals act as an obstacle to energy efficiency measures.

- There is no consistency in the use of the award and penalty ("carrot and stick") principle. Some policy measures have binding objectives (EEOS and voluntary agreements), while others, for example, those related to municipal energy management, large companies and energy consumers, have none. Some policy measures foresee sanctions for not achieving targets or not implementing requirements (large companies and energy consumers), but others do not (voluntary agreement, municipal energy management). EEOS is the only scheme that incorporates both mechanisms that balance each other. However, the lack of feedback on the MoE side, as well as the unregulated ratio of information measures and energy efficiency measures introduced, have a significant impact on this scheme.

- All policy measures show a lack of feedback between MoE and stakeholders.

## 6.2. Energy Efficiency Obligation Scheme

### Effectiveness

- The starting period (2014-2017) reported cumulative energy savings of 215,6 GWh. The estimated cumulative savings target is 234 GWh from 2016 till 2020.
- When implementing this policy measure, MoE projected that 50% of the total EEOS savings is derived from information and education measures and 50% through contributions to the National Energy Efficiency Fund or through the most expensive possible measures, the costs of which are equivalent to the contribution to the Fund, but surveys of EEOS participants show that most of companies' savings in their energy efficiency plans are achieved through informative measures, a small part – through the introduction of energy efficiency measures on the consumer side, and that they do not contribute to the Energy Efficiency Fund. This is because the cost of informative measures is significantly lower than the costs of actually implementing energy efficiency measures or the amount of contributions to the Energy Efficiency Fund.
- Experience of many countries and scientific research shows that providing information is an essential measure of energy efficiency policy, however, it changes people's attitudes in short-term, but does not change their behaviour. Providing information and educating is a long-term measure and a person familiar with energy efficiency will not take any energy efficiency measure immediately after receiving the information. Therefore, MoE has to assess the share of various measures taken in total savings, and on the basis of the overall objectives of Latvia, an analysis should be carried out whether a ceiling should be set on the share of information measures in total savings.
- This policy measure has ensured that the attitude, capacity, knowledge and awareness of energy efficiency measures of the stakeholders responsible for the EEOS has improved significantly.
- MoE does not provide sufficient communication with EEOS responsible stakeholders, including feedback information defined by CoM regulations No 226. Initially MoE commented on a version of the original action plans that helped understand CoM regulations No 226 requirements and their use, but communication has not actually taken place after that. This hampers the understanding of whether all reported energy efficiency measures comply with MoE requirements.
- EEOS responsible stakeholders have difficulty receiving annual information from MoE on large companies and large consumers that are not included in the savings target according to Article 11 of the CoM regulation No 226 on a list of large companies and consumers approved by a sworn auditor.
- MoE has not provided information to be included on the MoE website according to CoM regulation No 668.
- The EEOS scheme works as planned on the part of the responsible stakeholders, as it includes essential components of a successful policy measure, including both the objectives to be achieved and the choice between introducing measures on their own or letting the state achieve the objectives. However, the lack of feedback from MoE causes side effects when companies on the EEOS are interpreting the very broad and ambiguous regulatory texts in different ways.
- The undefined distribution of the proportion of information measures and actual energy efficiency measures is a major threat in the future, since information measures alone alter the energy user's attitude to energy efficiency, but not behaviour, i.e. real energy savings are not achieved.

- The lowest cost of all measures that the EEOS responsible stakeholder can take is for informational activities (€0.5 - €5/MWh). The cost of information measures calculated on the basis of the information measure is calculated on the basis of the previous version of the MoE catalogue, is lower compared to the new guidelines, where evaluation is required for each publication to identify the affected audience.
- Energy efficiency measures, including technologies, are offered as a shared payment, and the EEOS's responsible stakeholders offer only those measures that are economically viable to them. The cost of measures is highly dependent on the measure, but it is more than EUR 5/MWh. Estimates by the stakeholders responsible for the EEOS show that many measures in the household and small and medium-sized enterprises sector can significantly exceed EUR 70/MWh, which in turn increases the payback time and the economic benefits.
- MoE has not performed its functions, so the actual costs appear to be smaller than planned.

### Relevance

The objectives of the policy measure are in line with society's current needs/challenges and the policy measure is tailored to technological, scientific, environmental and social changes.

### Coherence

If the EEOS members do not fulfil the amount of obligation and threaten the achievement of the energy savings goal of Latvia, and the amount of obligation is transferred to the energy efficiency fund, there is a risk that when you transfer the fee to the energy efficiency fund, the cost effectiveness may be lower than if the measures are taken by the EEOS member. The measures taken by "Altum" may not be aimed at increasing energy efficiency in the EEOS operating segment: household electricity consumers and small and medium-size enterprises.

### Added value

- The added value of this policy measure is that energy consumers who receive information on energy efficiency have changed their habits, such as green thinking as a concept, reducing waste, etc.
- Promoting energy efficiency increases loyalty of energy consumers to the to the companies involved in EEOS.
- Energy efficiency is like additional bonus to offer to customers and they appreciate it very much.

### Complementarity

The implementation process laid down in the EEOS legislation has so far been carried out in only one direction: the EEOS responsible parties carry out the obligation imposed on them by interpreting the requirements of the legislative measures according to their own understanding, since the feedback from MoE is not actually provided. This has led to confusion about the meaning and necessity of this policy measure, since the State, which is the one who needs results achieved through these policy measures and impersonated by MoE is not interested in cooperation and implementation process. This gives the impression that legislation has been introduced formally in order to meet EU requirements on the transposition of the Directive, thereby demonstrating to the European Commission that the requirement to introduce an EEOS has been met.

## Equality

The effects are distributed fairly among different groups of society since information measures are not targeted for specific audiences but for all electricity consumers.

## Sustainability

The resources invested in corporate human resources and accumulated knowledge would continue to be used if the EEOS obligation scheme did not continue.

## Compliance

- Policy measure is seen more and more positively as energy efficiency becomes an integral part of life.
- Perception changes can be seen both within the companies of the EEOSs, with increased interest and awareness among employees as well as in society.
- Even by fulfilling the amount of obligation before the deadline, the EEOS responsible stakeholders intend to continue their energy efficiency-enhancing activities.
- The EEOSs have observed that the interest in energy efficiency is increasing as energy prices climb and is declining as energy prices fall.

## 6.3. Voluntary agreement

### Effectiveness

- Voluntary agreement as a policy measure in Latvia has been in place since 2011, when CoM Regulation No 555 “Rules on the Procedures for concluding and monitoring agreements on energy efficiency improvements” was issued (CoM, 12.07.2011). Those rules expired in 2016, when replaced by CoM rules 669. Unfortunately, MoE has not drawn conclusions from previous experience with voluntary agreements, which was an example of failing energy efficiency policy measure and continued to implement it in the same way as before.
- According to the Energy Efficiency Policy Plan of Alternative Actions to achieve the energy end-use savings target for 2014-2020, this policy measure does not define the target, but the expected cumulative energy savings from this measure (59.6% of the target or 5898 GWh) are mentioned in the specification of CoM Regulation No 226. Information from interviews and publicly available data shows that by 2020, approximately 55 GWh or 0.9% of the expected cumulative savings will be saved and the target will not be reached because
  - Companies and municipalities have no motivation to conclude voluntary agreements and to commit themselves to achieving the savings target.
  - Companies and municipalities do not have the motivation and interest to voluntarily impose a bureaucratic burden on themselves with the collection of data and their annual reporting to MoE.
  - Although legislation provides for one motivating measure – financial support to those who conclude such agreements – it is not actually provided.
- The law does not include sanctions against those who fail to comply with the voluntary agreement obligations. This will create additional problems if MoE makes it possible to meet the regulatory requirements for providing financial support.
- Information activities carried out by voluntary agreement contractors are targeted and based on the needs and interests of energy consumers.

- The surveys of participants of voluntary agreement show that companies make key savings in their energy efficiency plans and in reality through informative measures, not least from the introduction of energy efficiency measures to consumers. This is because the cost of information measures is significantly lower than implementation of actual energy efficiency measures or the amount of contributions to the Energy Efficiency Fund.
- Experience of many countries and scientific research show that providing information is an essential measure of energy efficiency policy, but in the short term it changes people's attitudes but does not change behaviour. Providing information and educating is a long-term measure and a person familiar with energy efficiency will not take any energy efficiency measure immediately after receiving information. Therefore, MoE has to assess the share of the various measures taken in total savings, and on the basis of the overall objectives of Latvia, an analysis should be carried out or a ceiling on the share of information measures in total savings should be set.
- Following the conclusion of a voluntary agreement, its implementation is followed in order to achieve the objectives set. At this stage, the achievement of the objectives depends on a number of factors:
  - Energy Manager: This is the most important factor in setting or achieving the targets set. The competence, knowledge, motivation, personality and other factors of the energy manager influence his/her attitude towards duties and results to be achieved.
  - Interest of the management of the company / municipality: those companies / municipalities where their managers are not interested in achieving energy efficiency objectives energy efficiency measures are implemented slowly or are not implemented at all. On the other hand, where the manager provides active support, achieving the set objectives has no difficulty.
  - Certified energy management system - a certified system means that every year the external evaluators - auditors of the certifying body - arrive and examine if there is any progress and put forward future objectives, so the company / local government should aim at achieving the set objectives.
  - The lack of information and communication provided for by the MoE – if following the entry into force of the “Energy Efficiency Law” and the entry into force of CoM Regulation No 669 the requirements set out in it were explained through the prism of corporate / municipal benefits and not as a voluntary measure, and the development of assistance to energy managers to strengthen their capacity would be ensured, there would be more success in implementing this policy measure.
  - Myth that setting up monitoring technologies ensures energy savings and work with people is no longer needed – there is a common myth that setting up technical energy monitoring systems will enable energy savings to be achieved, so other actions (e.g. communication with energy consumers, technology change, regulation of technology, etc.) do not need to be taken. This shows the lack of knowledge and expertise of energy management, which can be addressed through training and sharing of experience.

On 16.12.2019. amendments were made to CoM regulation No 669 providing that if state aid is granted under a voluntary agreement on improving energy efficiency and a Participant fails to comply with the terms of the agreement, the aid granted will have to be repaid. This condition follows from the State Audit Office (SAO) recommendations, in line with the assessment by the SAO titled “Is a targeted energy efficiency policy in place to achieve the planned energy end-use savings?” (SAO, 2018) in order to assume the responsibility of the participants in the voluntary agreements for achieving the amount of energy savings envisaged by the agreement and to contribute to the achievement of the energy end-use savings targets.



## Efficiency

- Estimates show that until now the administrative costs of implementing this policy measure have not exceeded the planned costs, since the amount of work invested is lower than planned, including the publication of data on the MoE website and the monitoring system for energy efficiency, only 2 companies have concluded a voluntary agreement.
- In companies that have concluded voluntary agreements, there is a small additional cost of collecting data to be reported under the terms of CoM 668, since these companies have a system of energy management in place for collecting information.
- Costs associated with informative activities and the implementation of energy efficiency measures are added to the economic costs of undertakings.

## Relevance

While the objectives of this important energy efficiency policy measure are in line with society's current needs / challenges and the policy measure is adapted to technological, scientific, environmental and social changes, the problems associated with its wording, including the balance between incentives for energy-efficient activities and sanctions, reduce the pace of its implementation, which in turn prevents the achievement of the set national targets. Many companies already use different solutions to save energy every day, but they are not accountable about the savings they have achieved.

## Coherence

This policy measure is one of many policy measures provided for in CoM Order 257 on the "Energy Efficiency Policy Plan for Alternative Measures for the achievement of the energy end-use savings target for 2014-2020". Its success depends to a large extent on how the municipality / company manages to attract external sources of funding in addition to its own budget, and how the energy savings are then distributed to funders, since the CoM regulation 668 prohibits double accounting of energy savings.

## Added value

Energy efficiency measures taken in the framework of the voluntary agreement and information on the measures contribute to the increase in green thinking in society on different environmental issues. These activities also change the reputation of the company – from negative image of a monopoly it changes to a positive attitude as a partner.

## Complementarity

The lack of feedback from MoE as well as the failure to comply with the obligation to disseminate information under the legislation significantly reduces the possibility that another company / municipality would like to enter into a voluntary agreement.

## Equality

So far, this policy measure ensures equal treatment of all members of society.

## Sustainability

The effect of the policy measure is likely to continue beyond the end of the measure, since energy management systems and energy plans were already introduced on a voluntary basis before the policy measure was introduced.

## Compliance

This policy measure enhances public awareness of energy efficiency, its importance and benefits, even if individuals are only indirectly involved in its implementation.

## **6.4. Energy management of municipalities and State direct management bodies**

### Effectiveness

- In line with the Energy Efficiency Policy Plan for Alternative Measures to achieve the energy end-use savings target for 2014-2020 this policy measure should achieve the estimated cumulative energy savings of 150 GWh. The information obtained in interviews and the publicly available data shows that the cumulative savings likely to be expected will not be achieved because:
  - some municipalities have not developed or were late in developing the energy management system,
  - those, which have developed it are delaying their implementation,
  - the largest energy consumer and, consequently, the largest energy Economics contributor to the overall cumulative savings target – Riga municipality – has not developed an energy management system.
- The reported cumulative savings for 2020 are only 3,28 GWh in place of the planned 150 GWh, i.e. only 2.2% of the target has been reached.
- In most municipalities where energy management systems are in place, this has been done within different projects.
- In some municipalities energy management systems have been introduced under the pressure of certification authorities;
- the requirements of the law and energy management standard on the boundaries of the system are freely interpreted, for example, one municipality includes all energy consumers owned by the local government while another – just one building.
- The law does not include sanctions against those who do not comply with the law.
- Implementation follows the development of energy management system to achieve the set objectives. At this stage, the majority of municipalities are unable to ensure that the objectives are achieved, and this depends on a number of factors:
  - Energy manager – this is the most important factor in determining whether the implementation of energy management system is successful. The competence, knowledge, motivation, personality and other factors of the energy manager influence his attitude towards duties and results to be achieved.
- Interest of the management of municipality – in municipalities where their leaders are not interested in energy management system, its implementation is slow or does not happen at all, and implementation of energy management system is just a formality required by law. On the other hand, where active support is provided by the head of the municipality, the introduction of energy management does not present difficulties.

- A certified energy management system - a certified system means that every year external evaluators - auditors of a certifying body – examine progress and suggest future targets, so the energy manager should strive to achieve the objectives. However, in municipalities where the system has not been certified, the assessment of the operation of the system has been left at the hands of the local government and some energy management and municipal leaders have no motivation achieving the set objectives.
- Lack of explanatory information and communication by the MoE – if the requirements set out in the “Energy Efficiency Law” were to be interpreted through the prism of the benefits of municipalities rather than as a compulsory obligation, and it would be intended to provide support to strengthen energy management capacity, the implementation of this policy measure would be more successful.
- Lack of mandatory targets – law does not set minimum energy efficiency targets to be achieved annually by the parties concerned, nor does it deal with any consequences if these objectives are not achieved. This enables those municipalities that perceive the requirements of law as a burden without seeing the benefits of introducing energy management systems, to introduce systems formally, to set minor energy efficiency targets, to introduce minimum system limits or not even try to achieve the objectives. This subsequently leads to the failure to meet the country's overall binding energy efficiency targets.
- Myth that setting up monitoring technologies provides energy savings and working with people is no longer needed – there is a common myth that setting up energy monitoring systems will enable energy savings to be achieved, so other actions (e.g. communication with energy consumers, technology change, regulation of technology, etc.) need not be taken. This shows the lack of knowledge and expertise of energy management, which can be addressed through educating, training and sharing experience.

### Efficiency

- Estimates show that until now the administrative costs of implementing this policy measure have not exceeded the planned costs, since a number of requirements laid down in law and regulations of the CoM have not been introduced, including the publication of data on the MoE website and the monitoring system for energy efficiency, and a number of municipalities and institutions of direct state administration have not implemented energy management.
- Some of those, who have implemented energy management systems, have done this within the framework of international projects, thus raising funding for this policy measure.
- On the other hand, others have done so from budget resources. As the analysis of the example of the town of Jelgava shows, budget expenditure on the introduction and implementation of the energy management system can be recovered with energy savings provided by energy management activities.

### Relevance

Although the objectives of the policy measure are in line with society's current needs and challenges, and the policy measure is adapted to technological, scientific, environmental and social changes, the challenges associated with its implementation process reduce its implementation rate, which in turn hampers achieving of the set national targets.

## Coherence

This policy measure is one of many policy measures provided for in CoM Order 257 on the “Energy Efficiency Policy Plan for Alternative Measures for the achievement of the energy end-use savings target for 2014-2020”. The success of this policy measure depends to a large extent on the way a municipal / public authority manages to attract funding sources in addition to its own budget and how energy savings are then distributed to the funders, since CoM regulation 668 prohibits double accounting of energy savings.

## Added value

The added value of this policy measure is the social pressure of the group (municipalities): an increase in the interest of other municipalities not covered by the law on energy management systems, energy carriers and energy efficiency in general, which is based on the desire to keep up with others or even be better than others.

## Complementarity

The lack of a systemic approach on the part of the legislator and the Responsible Authority (MoE) leads to an entirely different effect than planned when designing this policy measure. On one hand, the legislator is obliged to introduce a mandatory energy management system, but on the other hand it does not provide for sanctions for non-compliance, nor does it set limits for the implementation of the system, does not engage in interpretative communication with the audience, delays with the creation of explanatory materials, does not foresee any measures to support audiences. As a result, only about 20% of the entire target group follow the policy measure as originally envisaged.

## Equality

There is a risk that the effects are not fairly distributed among different groups of society, since municipalities and national direct administration institutions are free to define the boundaries of the system without including different groups of energy consumers.

## Sustainability

The effect of the policy measure is likely to continue beyond the end of the measure, since the implementation of the energy management system was already carried out on a voluntary basis prior to the introduction of the policy measure as part of the energy insurers.

## Compliance

This policy measure enhances public awareness of energy efficiency, its importance and benefits, even if individuals are only indirectly linked to the introduction of energy management, such as working in buildings where energy management is introduced.

## 6.5. Energy audit and energy management in large companies and electricity consumers

### Effectiveness

- In order for Latvia to meet its obligations under the Energy Efficiency Directive on the cumulative energy efficiency target from 2016-2020, it was very important to begin implementing energy efficiency measures as soon as possible, i.e. from 1 January 2016. However, the “Energy Efficiency Law” provides that if companies delay the implementation of measures until the last moment (for large companies it is 1 April 2020 and for large electricity consumers 1 April 2022), this policy measure does not reach the intended target, since the action required by law – the reduction in energy consumption – is already being taken after the end of the period specified in the Energy Efficiency Directive.
- Latvia’s report on the implementation of the “Energy Efficiency Directive” (MoE, 2019) reports that the measures taken by 2017 in large companies and large electricity consumers, where energy audits have been carried out in 2020, will lead to cumulative savings of 668 GWh. Data processing carried out in this study for energy efficiency monitoring system data for all large companies and large electricity customers shows that 105 GWh were saved in 2016 and 171 GWh saved in 2017. If it is assumed that companies do not take any measures in 2018 and 2019, it would amount to 973,15 GWh in 2020, together with the savings achieved in 2015 (8,03 GWh). It is about 165,5 GWh more than the target (807.6 GWh).
- The majority of companies that have submitted reports on energy efficiency measures introduced are formally compliant with the legislative requirements, which require companies to introduce at least three energy efficiency measures with (1) the highest estimated energy savings or (2) the highest economic returns. This is reflected in the reports submitted – increasing the energy efficiency of lighting dominates and complies with the second criterion of the law for the highest economic return, but does not provide enough energy savings in absolute figures, which, in turn, reduces the cumulative savings needed to make Latvia meet its obligations.
- This policy measure has only one of the incentive components – mandatory requirements and penalties for non-compliance (“*a stick*”) but lacks the balancing component – aid or award (“*a carrot*”). It creates an additional negative impression of it.
- The Energy Efficiency Monitoring System only collects information on electricity consumption, but does not collect information on the consumption of other energy sources, which, according to the Central Statistical Bureau, accounts for approximately 80% of the total energy consumption of industrial companies and 40% of service companies. On the other hand, energy efficiency measures are planned and implemented to reduce use of other energy resources, so a detailed analysis of information is not possible.
- An analysis of the energy audits of 123 industrial companies submitted by MoE shows that the potential average technical energy savings is 6.6% of the company's total energy consumption. For example, in a company where electricity accounts for only 20% of total energy consumption, the savings would represent 33% of electricity consumption. This is significantly higher than the energy efficiency measures currently reported by companies.
- Energy efficiency monitoring system does not have the information required to calculate cumulative energy savings, which is essential to assess whether the policy measure has achieved the intended objectives.

- Businesses do not see opportunities in energy efficiency, i.e. measures that would significantly reduce their energy consumption and costs by increasing their competitiveness, but rather threats or burdens, thereby seeking solutions that are legally correct to circumvent the legislative requirements without incurring additional costs.
- Many companies are reporting lower forecasts of savings than realistically feasible or even planned measures, as they see risks associated with MoE changing requirements.
- A large part of the management of smaller companies, when deciding, which three energy efficiency measures to choose, base their decision on the absolute value of the investments needed instead of assessing relative costs.
- The production market situation has an impact on the decision to finance energy efficiency measures.
- Business management chooses to take the cheapest and smaller measures, such as the replacement of some luminaires in the lighting system, because the legislative requirements are thus formally met and there is relatively little risk that the company will fail to implement them, without penalty measures from the State for failing to comply with it. Defining the energy savings target as it is in the EEOS scheme, would change this approach.
- Businesses do not know about ESCO and the services they offer.
- Energy management in ISO 50001 companies is introduced by the largest electricity consumption companies, while medium-sized enterprises choose to introduce ISO 50001 and ISO 14000, while smaller energy companies choose to carry out energy audits.
- Big electricity consumers plan and actually save relatively little energy compared to small electricity consumers. This has a significant impact on the achievement of the country's overall goals, since the contribution of big energy consumers to increasing relative energy savings contributes to far greater absolute energy savings.
- Personality features, professionalism, including knowledge and capacity, of energy auditors are all essential factors influencing identification of energy efficiency measures and their impact assessment.
- The personality, capacity and knowledge of enterprises' energy managers have significant impact on the identification and impact assessment of energy efficiency measures. The fundamental differences between energy specialists of different generations: the older generation sees a failure with a lack of ambition as criticism, but the younger generation sees it as an opportunity.
- Personal character, interest, management style, priorities, etc. of business leaders have a significant impact on the implementation of energy efficiency measures.
- The interaction between energy auditor, the company's energy manager and the company's manager has significant impact on the identification, impact assessment and implementation of energy efficiency measures.
- Annex 5 "Communication on the implementation of energy management systems, environmental management systems with additions or performance of energy audits" to CoM Regulation No 668 provides that a copy of energy audit report (if applicable) may be attached to it. There are undertakings which do not add a copy of their energy audit report, arguing that it is not a mandatory requirement. This significantly impedes the analysis of the information submitted.
- Energy auditors freely interpret the requirements for the level of detail of the information to be included in the energy audit report of CoM regulation 487 (CoM, CoM regulation 487 "Rules for the energy audit of companies", 26.6.2016), which is subsequently

provided in the range from very detailed to very general information. This significantly impedes the analysis of the information submitted.

- According to legislation, undertakings that have chosen to implement energy management and environmental management system have to submit only copies of the MoE certificates, at least 3 energy efficiency measures planned, and have to report annually on the energy efficiency measures introduced. This information is not sufficient to allow proper analysis of information required for the analysis and future policy planning of the existing policy.
- The collection of information on the progress made so far is hampered by the fact that some of the reports have been submitted in paper format and others electronically.
- If MoE sets mandatory savings targets similar to the EEOS system a large part of the companies could agree to this if an individual calculation based on the benchmark method for the sector/sub-sector would be used as the basis for setting targets.
- MoE is only interested in the numeric values of the savings, not the process *per se* and the quality of the data.

### Efficiency

Estimates show that until now the administrative costs of implementing this policy measure have not exceeded the planned costs, since a number of requirements laid down in law and in CoM regulations have not been introduced, including the publication of data on the MoE website and the monitoring system for energy efficiency, 381 enterprise has not fulfilled legislative requirements.

### Relevance

Although the objectives of the policy measure are in line with society's current needs and challenges, and policy measure are adapted to technological, scientific, environmental and social changes, the challenges associated with its implementation process reduce its implementation rate, which in turn prevents the achievement of national targets.

### Coherence

This policy measure is one of many policy measures provided for in CoM Order 257 on the Energy Efficiency Policy Plan of Alternative Measures for the achievement of the energy end-use savings target for 2014-2020. The pace of its implementation is not high, but the progress made by 2017 ensures that the targets set will be achieved.

### Added value

The added value of this policy measure is information on energy efficiency, which compulsively goes to companies and remains in long-term memory, although often not used in the short term.

### Complementarity

The lack of a systemic approach on the part of the legislator and the Responsible Authority (MoE) leads to an entirely different effect than planned when designing this policy measure. On one hand, the legislator is obliged to introduce mandatory energy audits / energy management systems and measures and provides for penalties for non-compliance ("stick") and makes the implementation process chaotic by suddenly changing the rules, but on the other hand does not provide for supportive measures, including not publishing company-binding information that

would boost their motivation, does not make interpretative communication with the audience, delays in creating explanatory materials, no targeting measures, no feedback, etc. (“carrot”).

### Equality

No risk of inequality has been identified.

### Sustainability

There is a high risk that the effect of the policy measure will not continue beyond the end of the measure, since the measure was introduced by applying “sticks” and without any aid or “carrots” and has created negative attitudes on the subject.

### Compliance

This policy measure increases public awareness of energy efficiency, since the employees of companies who have confronted it, also disseminate this experience outside their workplaces. There are only a few companies that share their positive experiences in mass media and social media. This may be due to a lack of financial resources for these measures and could be supported more by the state.

## 6.6. Energy efficiency funds

### Effectiveness

- The legislation does not specify what the MoE decision-making process is, including the criteria for the measures for which funds are spent. So far, it has been done on the basis of undefined criteria.
- “Altum” is working actively to boost the rate of energy efficiency growth. This financial institution has to take targeted action to increase market demand for energy efficiency, which would allow it to achieve its main objective of increasing its portfolio of loans for energy efficiency projects. Unlike MoE, “Altum” actively analyzes the market, trends, energy consumers, their behaviour and looks for opportunities to increase demand for energy-efficiency services.

### Efficiency

The study does not provide data to assess whether the administrative costs of implementing this policy measure have exceeded the planned costs.

### Relevance

The objectives of the policy measure are in line with society's current needs and challenges and the policy measure is tailored to technological, scientific, environmental and social changes.

### Coherence

This policy measure is one of many policy measures provided for in CoM Order 257 on the Energy Efficiency Policy Plan of Alternative Measures for the achievement of the energy end-



use savings target for 2014-2020. By 2017, the progress made will ensure that the targets set will be achieved.

#### Added value

The added value of this policy measure is information on energy efficiency, which increases the circulation of information on the market. Information measures change attitudes in the short term, but not behaviour. “Altum” successfully uses the fund's resources to create demand for energy efficiency measures and can support them from its financial programmes.

#### Complementarity

This policy measure is valid for all market participants as it is used as a means of creating demand.

#### Equality

No risk of inequality has been identified.

#### Sustainability

This measure has a long-term effect, since “Altum” is investing the fund's resources in information and support measures.

#### Compliance

This policy measure enhances public awareness and interest in energy efficiency.

### **6.7. Energy efficiency monitoring system**

#### Effectiveness

- The energy efficiency monitoring system, which is an essential part of the implementation process of the Energy Efficiency Directive (EU, 2012), does not function as foreseen in the legislation: data is fully aggregated, not verified and verified, not available on the MoE website. By December 2019, the data is entered manually into the system and this process is very time-consuming. Instead of having MoE employees analyse the data they have obtained, communicate with companies on what they have done and the planned changes to policy measures based on analysis, they are taking actions with low added value – entering data into the system. This has led sequentially to the fact that 5000 human hours each year are not enough to operate the monitoring system qualitatively.
- In November 2018, MoE has concluded an agreement on the development of supplements to the energy efficiency monitoring and fee administration system, a change in claims and maintenance services, which was scheduled to be completed by 31 January 2020. Building up the system will significantly reduce the number of MoE employees' hours spent on entering data, as companies will be able to do so online. However, this improvement will only partially relate to the Energy Efficiency Action Plan for 2016-2020.
- MoE needs to take action to increase the competence of MoE employees needed to enable them to carry out analysis of progress towards energy efficiency targets. This obligation is currently outsourced. This would raise the knowledge and understanding of MoE employees about energy efficiency improvement processes and the necessary legislative corrections / improvements.

- MoE planned additional funding resulting from the energy efficiency levy, from 2018 (€25 314 in 2018; €42 000 in 2019; €44 000 in 2020) to compensate an employee at MoE without creating new jobs, one of this employee's three responsibilities being the annual progress report on progress made towards national energy efficiency. energy targets in accordance with Annex XIV to Directive 2012/27/EU.
- The Energy Efficiency Monitoring System does not have information required to calculate cumulative energy savings, which is essential to assess whether the policy measure has achieved the intended objectives.

### Efficiency

- MoE has been responsible for implementing and maintaining the energy efficiency monitoring system since 2010 having this obligation within the existing funding. In 2013, when planning to significantly increase the amount of work for the period 2016-2020, no additional funding was foreseen. As part of existing funding, EM did not have the capacity to fulfil its obligations.
- The funding resulting from the energy efficiency fee allowed the purchase of outsourcing for the establishment and maintenance of a computerised monitoring system from 31 January 2020, which will significantly improve the functioning of the system, but this will take place already outside the 2016-2020 reference period.
- The funding resulting from the energy efficiency fee allowed the procurement of methodological development and the calculation of annual and cumulative energy savings. The service had to be provided by March 2019. The methodology will allow MoE to improve the energy efficiency calculator, as well as Latvia's reporting on the measures taken under the Energy Efficiency Directive.

### Relevance

The objectives of the policy measure are in line with the needs and challenges of society at present, as it is one of the cornerstones of the implementation of the national energy efficiency plan, which allows to analyse the progress of the current policy implementation and to assess whether the planned objectives are being achieved. The failure to set up an operational system for 8 years has affected the use of this measure.

### Coherence

This policy measure is one of many policy measures provided for in CoM Order 257 on the Energy Efficiency Policy Plan of Alternative Measures for the achievement of the energy end-use savings target for 2014-2020. It interacts with other legislative acts defining actions that generate energy savings and are recorded in the monitoring system for energy efficiency. Interviews have repeatedly mentioned that the pace of other policy measures depends on the feedback with MoE, which communicates with market participants on the progress of introducing measures in the country and in each individual company. The absence of this link, as well as the shortcomings of the system weaken the effect of other policy measures.

### Added value

Although this policy measure has great potential to create added value that can be obtained through data analysis, this has not happened so far since the measure has not been implemented.

### Complementarity

This policy measure does not yet satisfy the needs of stakeholders and interested actors, as it does not work as planned.

### Equality

No risk of inequality has been identified.

### Sustainability

This measure has great potential for a long-term effect, but this has not happened so far since the measure has not been introduced.

### Compliance

This policy measure should raise public awareness and interest in energy efficiency, but it has not yet been implemented.

### Recommendations

- In view of the fact that, at the time of this study, MoE has taken action to significantly improve the functioning of the energy efficiency monitoring system, it is likely to eliminate most of the shortcomings identified in this study. Since we have not had the opportunity to familiarise ourselves with the new system, we cannot make recommendations on this for now.
- As from 1 January 2020, the functions of administering energy efficiency policies have been entrusted to the State Construction Control Bureau. According to the information at our disposal, these responsibilities will be carried out by former MoE Energy Department staff, whose competence in the MoE report entitled “On solutions for the removal of the electricity mandatory procurement component and the functions of implementing energy policy” (MoE) was described as insufficient, so the necessary steps should be taken to increase the competence of these employees so that they can carry out analysis on progress towards energy efficiency targets on their own and reduce dependency on external services. This would raise the knowledge and understanding of MoE employees about energy efficiency improvement processes and the necessary legislative corrections / improvements.

## **6.8. Plan for alternative energy efficiency policy measures to achieve the energy end-use savings target for 2014-2020**

### Effectiveness

- The plan foresees that “two mechanisms (EEOS and voluntary agreements) will be strengthened by 2020, which are already in use in EU countries to promote end-user energy efficiency on a large scale. In the event that the agreement does not show sufficient efficiency, the inclusion of other sectors such as district heating and gas supply in EEOS should be considered during the second commitment period”. Voluntary agreement in a form such as in the plan has been used in Latvia as a policy measure since 2011 and has been a measure that has not had an effect.
- Estimated cumulative savings from energy efficiency measures under consideration are 4.5 times higher than actual. The main benefits were expected to be derived from the voluntary agreement, but this measure would actually reach 1.1% of the target. The actual savings of municipalities and national direct administration institutions will represent only 2.2% of the

planned savings. Meanwhile, both EEOS and big businesses and big electricity consumers will meet and even overfulfil the targets. EEOS's actual savings will exceed the planned by 67%, while big companies and big electricity consumers – by 20%. But both of these measures represent a relatively small part of the overall savings target: EEOS is 3.7%, while big companies and big electricity consumers are 12.7%.

- The MoE progress report reports that Latvia has benefited from a reduction in energy consumption resulting from energy taxes. The analysis uses the price flexibility factor (depending on commodity demand and commodity price), the actual rate of the tax, the minimum rates of final energy consumption and tax in accordance with EU Directive 2003/96/EC. However, the calculation does not include essential explanatory variables: GDP, population, climate, number of cars, etc. This is particularly important when analysing data on the period of economic crisis that occurred in Latvia from 2008 till around 2011.
- All policy measures included in the plan are interrelated and either reinforce or weaken each other, for example, the non-implementation of the energy efficiency monitoring system has a negative effect on all other policy measures, as they do not receive feedback on overall progress in the country or sector, which is an important part of the motivation created by social pressure and the need to compare yourself with others. The negative message generated by the large electricity consumers, which delayed the deadlines and led to the urgent amendment of the Energy Efficiency Law by lifting the penalty, signalled to the target groups of other policy measures that the penalty is not inevitable and could be abolished, provided that there is enough fuss. The resources of the Energy Efficiency Fund used by Altum are targeted towards information activities that disseminate information not only to the direct audience but also to target groups of other policy measures.
- Professional competence of the sector is high enough in Latvia to achieve the stated objectives. This can be done through a correct use of existing policy measures to remove existing barriers.

### Efficiency

The usefulness of each of the individual policy measures included in the plan is different and information on each of them can be viewed in the conclusions about each measure.

### Coherence

The objectives of the plan are up to date and in line with the public interest in reducing the impact on climate. The whole set of policy measures included in the plan would contribute much better to achieving the objective of the plan if a regular analysis of the measures already in place and policy adjustments was carried out. A number of relevant factors have been identified separately in each of the measures, which hamper their implementation in high enough quality and achievement of the objectives set, and they all interact with each other.

### Coherence

The plan relates to a series of other legislative acts and the degree of success of their implementation, and its impact and interaction effect determine whether the objectives of the plan are achieved. Information on the implementation of each individual policy measure can be found in the description of each policy measure.

### Added value

The added value of the policy measures included in the plan is the development of a public understanding of energy efficiency and other measures that have environmental impact, where the overall effect of policy measures is positive.

### Complementarity

Most of the plan's policy measures were introduced as a “stick”, with no “carrot” coming along. In combination with the lack of interpretative information by the Ministry of Economics, it has created communication gap and negative attitude among target audiences of various policy measures. If, following the entry into force of the “Energy Efficiency Law”, the requirements set out therein were explained through the prism of benefits rather than being required as a compulsory obligation, and it would be envisaged to create a larger support system for those introducing energy efficiency measures, the implementation of that plan would be more successful.

### Equality

Impact of individual policy measures included in the plan on equality aspect is different (see each measure separately), but most of them are non-discriminatory.

### Sustainability

Sustainability of this policy package is related to Latvia's international commitments and EU requirements.

### Compliance

All policy measures introduced under the plan have raised public awareness of energy efficiency in different sectors. Whether this understanding is positive or negative depends on the industry or sector: large companies and large electricity consumers have negative attitude, it is both positive and not so positive in municipalities, but it is more positive among EEOS customers.

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## APPENDIX

### Annex 1. Required information and data for EEOS evaluation

Criterion	Sub-criteria	Indicator	Indicator unit of measure	Data source
Effectiveness – the success of a policy measure to achieve the objectives set	Overall purpose of the EEOS	Planned savings	GWh/per annum	MoE, EE plans for EEOS members
		Actual savings	GWh/per annum	MoE
	Purpose of each EEOS responsible party	Planned savings	GWh/per annum	MoE, EE plans for EEOS members
		Actual savings	GWh/per annum	MoE
	Forecast of measures selected by the EEOS responsible parties	Planned measures, their breakdown by group of measures: - information activities by type - EE measures by type - energy savings by measure - costs per measure	-number of measures -number of measures - GWh/per annum - EUR/per annum; -EUR/Member. MWh	MoE, EEOS EE Plans
		Planned contributions to EE funds	-EUR/per annum	MoE, EEOS EE Plans
		Actual measures, their breakdown by group of measures: - information activities by type - EE measures by type - energy savings by measure - costs per measure	-number of measures - number of measures - GWh/year -EUR/per annum; EUR/Member MWh	MoE
		Actual contributions to EE funds	EUR/per annum	MoE
	The expertise, understanding and implementation of EE measures and the feasibility of implementing them	- Who developed the EE plan? - Who is responsible for putting it in place? - How it was decided: + which measures to take, + how much they will pay, + what effect they will give, + how to introduce them, + how to measure the results achieved, + how much to contribute to the EE fund?		EEOS Participant Polls
	The capabilities and capabilities of EEOS members to persuade energy end-users to implement EE measures	- What techniques are used to convince the final consumer of the introduction of EE measures? - What is the effectiveness of each of these techniques? Please arrange them in order from the weakest to the strongest.		EEOS Participant Polls

Efficiency: the relationship between the resources consumed by a policy measure and the changes caused by a policy measure	Is a policy measure appropriate?	- cost-effectiveness for each group of measures (information measures, EE measures broken down separately)	EUR/MWh saved	From data analysis
	To what extent is a policy measure cost-effective?	- Administrative costs of MoE, Altum, EEOS members - Implementation costs - Financing costs of EE measures	-EUR/per annum -EUR/per annum -EUR	Interviews with EEOS members and Altum MoE data from EEOS
	How much is the cost proportional to the benefits? What factors affect differences? How are these factors related to a policy measure?	- cost of information measures to the effect achieved for each EEOS member - The cost of EE measures on the savings achieved for each EEOS member	-EUR/MWh -EUR/MWh	Analysis of data
	To what extent are the factors associated with the policy measure affecting the effectiveness of achieving the results achieved? What other factors affect benefits and costs?	- Free enumeration of factors and their importance - Competencies and knowledge of EE measures, their implementation and funding models		EEOS participant polls
	If there is a high distribution between costs and benefits for the various stakeholders, which leads to this distribution? How is it related to a policy measure?	- cost of information measures to the effect achieved for each EEOS member - The cost of EE measures on the savings achieved for each EEOS member	-EUR/MWh -EUR/MWh	Analysis of data
	How time-consuming and useful is the process of monitoring a policy measure?	-costs of administering the monitoring system -Required human hours	-EUR/per annum -h/per annum	MoE
Relevance – Assessing the relationship between societal needs/problems and the objectives of the policy measure	Does the policy measure meet the needs of this moment?	What are the audience needs: information, financial support for EE activities, etc.?	List of needs	Intervijas ar EEOS dalībniekiem
	How appropriate is the policy measure still in place?	Compare to target: - has it succeeded to create an EEOS system -the number of participants participating, -what their effectiveness is	- Number of participants - results achieved by participants/expected results	Analysis of data
	To what extent does the original objective of the policy measure correspond to the real policy measure?	- How much energy has been saved by information measures? - How much energy has been saved by EE measures? - How much are the contributions to the EE fund?		Analysis of data

	How well has the policy measure been adapted to technological, scientific, environmental, social changes?	- How do you take into account the latest technological solutions? - How are you following changes in audience interests?		Interviews with EEOS members
	How appropriate is the policy measure for the residents of Latvia?	- What is the audience interest in the EE measures proposed by EEOS? - What is the audience interested in informational events? - How to increase interest?		Interviews with EEOS members
Coherence: how a policy measure works together with other policy measures	Is the policy measure aligned with other legislative acts of Latvia with similar objectives?	Legislative and planning documents on energy and environmental matters	list of documents with harmonised legislative acts	Likumi.lv
	To what extent does the policy measure complement other Latvian or EU policies?	Legislative and planning documents on energy and environmental matters	List of complementary legislative acts	Analysis of legislative documents
	To what extent has the policy measure been coordinated with other policy measures in order to mobilise resources in a harmonised way?	Legislative and planning documents on energy and environmental matters	List of harmonised legislative acts	Analysis of legislative documents
Added value – what added value, in addition to its direct objectives, has been created by a policy measure	Has the policy measure generated additional added value?	- What additional added value do you create for your audience? - How can I assess that?		Interview with EEOS members
Utility	To what extent does the policy measure satisfy/dissatisfaction the needs of the stakeholders and stakeholders?	- Is the measure helping MoE achieve the goals?		MoE
		- Is the legislative process satisfactory? - If it isn't, what was/needs to be done differently?		EEOS participant polls
	How much is the difference between the satisfaction of the various stakeholders and stakeholders?			Analysis of survey results
Equality	How fair have the effects been distributed to different groups of society?	- target groups for information measures - target groups of the implemented EE measures - the opinion of target groups on the activities of EEOS members	- number of target groups for information measures - number of target groups for EE measures	MoE data from EEOS member reports
Sustainability	How much is the likelihood that the effect of the policy measure will continue beyond the end of the measure?	Would you continue to participate in the EEOS after its end?		EEOS member interviews

Admissibility	How much can it be seen as changing the perception of a policy measure in audiences and in general in society?	Are you witnessing changes in the audience and general community of EEOS and EE measures?		EEOS member interviews
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## Annex 2. Necessary information and data for assessment of voluntary agreements

Criterion	Sub-criteria	Indicator	Indicator unit of measure	Data source
Effectiveness – the success of a policy measure to achieve the objectives set	Overall objective of the Voluntary Arrangement (VA)	Planned savings	GWh/per annum	MoE
		Actual savings	GWh/per annum	MoE
		Number of voluntary agreements concluded	-quantity	MoE
		For what period does the VA Participant agree to achieve energy savings of at least 10%?		
	Purpose of each Member of the VA	Planned savings	GWh/per annum	MoE, EE plans of the members of VA
		Actual savings	GWh/per annum	MoE
		Planned measures, their breakdown by group of measures: - information activities by type - EE measures by type - energy savings by measure - costs per measure	-number of measures  -number of measures  - GWh/per annum -EUR/per annum; EUR/Member MWh	MoE, VA EE plans
		Actual measures, their breakdown by group of measures: - information activities by type - EE measures by type - energy savings by measure - costs per measure	-number of measures -number of measures - GWh/per annum  -EUR/per annum; EUR/Member MWh	MoE, VA EE plans
		Number of informed economic operators, their organisations and local governments	- quantity	MoE
		Resources and capacity available for publicity	EUR/per annum	MoE
		Financial support from the State budget or the State Energy Efficiency Fund	EUR/per annum	The surveys of the members of the VA
	The knowledge, understanding, implementation and	- Who developed the EE plan? - Who is responsible for putting it in place?		Surveys of the members of VA

	feasibility of the members of the VA	- How it was decided: + which measures to take, + how much they will pay, + what effect they will give, + how to introduce them, + how to measure the results achieved		
Efficiency: the relationship between the resources consumed by a policy measure and the changes caused by a policy measure	Is a policy measure appropriate?	- cost-effectiveness for each group of measures (information measures, EE measures broken down separately)	EUR/MWh saved	From data analysis
	To what extent is a policy measure cost-effective?	- EM, administrative costs of the members of VA -Implementation costs - financing costs of EE measures - EUR/per annum	-EURper annum -EUR/per annum -EUR	Interviews with the members of VA and MoE data from VA
	How much is the cost proportional to the benefits? What factors affect differences? How are these factors related to a policy measure?	-the cost of information measures for the effects achieved for each VA participant - the cost of EE measures on the savings achieved for each BV participant -	-EUR/MWh  -EUR/MWh	Data analysis
	To what extent are the factors associated with the policy action impacting on the effectiveness of achieving the results achieved? What other factors affect benefits and costs?	- Free enumeration of factors and their importance - Competencies and knowledge of EE measures, their implementation and finalisation models		Surveys of the members of VA
	If there is a high distribution between the costs and benefits of the various VA members, which causes this distribution? How is it related to a policy measure?	- the cost of information measures for the effects achieved for each VA participant - The cost of EE measures on the savings achieved for each BV participant	-EUR/MWh  -EUR/MWh	Data analysis
	How time-consuming and useful is the process of monitoring a policy measure?	-costs of administering the system of the register of agreements -Required human hours	-EUR/per annum  -h/per annum	MoE
Relevance – Assessing the relationship between societal needs/problems and the objectives of the policy measure	Does the policy measure meet the needs of this moment?	What are the audience needs: information, financial support for EE activities, etc.?	List of needs	Interviews with members of VA
	How appropriate is the policy measure still in place?	Compare to target: -the number of participants participating,	- Number of participants	Analysis of data

		-what savings they have achieved against planned	- results achieved by participants/expected results	
	To what extent does the original objective of the policy measure correspond to the real policy measure?	- How much energy has been saved by information measures? - How much energy has been saved by EE measures?		Analysis of data
	How well has the policy measure been adapted to technological, scientific, environmental, social changes?	- How do you take into account the latest technological solutions? - How are you following changes in audience interests?		Interviews with members of VA
	How appropriate is the policy measure for the residents of Latvia?	- What is the audience interest in the EE measures proposed by VA? - What is the audience interested in informational events? - How to increase interest?		Interviews with members of VA
Coherence - as a policy measure, together with other policy measures	Is the policy measure consistent with other legislative acts of Latvia with similar objectives?	Legislative and planning documents on energy and environmental matters	list of documents with harmonised legislative acts	Likumi.lv
	To what extent does the policy measure complement other Latvian or EU policies?	Legislative and planning documents on energy and environmental matters	List of complementary legislative acts	Analysis of legislative documents
	To what extent has the policy measure been coordinated with other policy measures in order to mobilise resources in a harmonised way?	Legislative and planning documents on energy and environmental matters	List of harmonised legislative acts	Analysis of legislative documents
Added value - what added value, in addition to its direct objectives, has been created by a policy measure	Has the policy measure generated additional added value?	- What additional added value do you create for your audience? - How can I assess that?		Interview with the members of VA
Utility	To what extent does the policy measure satisfy/dissatisfaction the needs of the stakeholders and stakeholders?	- Is the measure helping MoE achieve the goals?		MoE
		- Is the legislative process satisfactory? - If it isn't, what was/needs to be done differently?		Surveys of the members of VA
	How much is the difference between the satisfaction of the various stakeholders and stakeholders?			Analysis of survey results
Equality	How fair have the effects been distributed to different groups of society?	- target groups for information measures - target groups of the implemented EE measures	- number of target groups for information measures - number of target groups for EE measures	MoE data from the reports of the members of the VA



		- opinion of target groups on the activities of VA members		
Sustainability	How much is the likelihood that the effect of the policy measure will continue beyond the end of the measure?	Would you continue to participate in VA after its end?		Interviews of the Member States of VA
Acceptability	How much can it be seen as changing the perception of a policy measure in audiences and in general in society?	Are you witnessing changes in the targeting and general public of the measures of VA and EE?		Interviews of the Member States of VA

### **Annex 3. Necessary information and data for the assessment of the energy management of municipalities and national direct management authorities**

Criterion	Sub-criteria	Indicator	Indicator unit of measure	Data source
Effectiveness – the success of a policy measure to achieve the objectives set	Total objective of State ownership and local government energy management	Planned savings	GWh/per annum	MoE
		Actual savings	GWh/per annum	MoE
	Purpose of each responsible party	Planned savings	GWh/per annum	MoE, participant EE Plans
		Actual savings	GWh/per annum	MoE
	forecast of the measures selected by the responsible parties	Plānotie pasākumi, to sadalījums pa pasākumu grupām: -information activities by type - EE measures by type - energy savings by measure - costs per measure	- number of measures  -number of measures - GWh/year  -EUR/per annum; EUR/Member MWh	MoE, EE plans
		Actual measures, their breakdown by group of measures: -information activities by type - EE measures by type - energy savings by measure - costs per measure	-number of measures  -number of measures -GWh/per annum  --EUR/per annum; EUR/Member MWh	MoE
	expertise, awareness, implementation and feasibility of EE measures	- Who developed the EE plan? - Who is responsible for putting it in place? - How it was decided: + which measures to take, + how much they will pay,		participant Polls

		+ what effect they will give, + how to introduce them, + how to measure the results achieved,		
Efficiency: the relationship between the resources consumed by a policy measure and the changes caused by a policy measure	Is a policy measure appropriate?	-cost-effectiveness for each group of measures (information measures, EE measures broken down separately)	EUR/saved MWh	From data analysis
	To what extent is a policy measure cost-effective?	- MoE, administrative costs of members -Implementation costs - Financing costs of EE measures	-EUR/per annum  -EUR/per annum -EUR	Interviews with participants MoE data
	How much is the cost proportional to the benefits? What factors affect differences? How are these factors related to a policy measure?	-cost of information measures for the effects achieved for each participant - The cost of EE measures on the savings achieved per participant	-EUR/MWh  -EUR/MWh	Analysis of data
	To what extent are the factors associated with the policy measure affecting the effectiveness of achieving the results achieved? What other factors affect benefits and costs?	- Free enumeration of factors and their importance - Competencies and knowledge of EE measures, their implementation and funding models		participant polls
	If there is a high distribution between costs and benefits for the various stakeholders, which leads to this distribution? How is it related to a policy measure?	- cost of information measures for the effects achieved for each participant  - The cost of EE measures on the savings achieved per participant	-EUR/MWh  -EUR/MWh	Analysis of data
	How time-consuming and useful is the process of monitoring a policy measure?	- costs of administering the monitoring system - Required human hours	-EUR/per annum -h/per annum	MoE
Relevance – Assessing the relationship between societal needs/problems and the objectives of the policy measure	To what extent does the original objective of the policy measure correspond to the real policy measure?	- How much energy has been saved by information measures? - How much energy has been saved by EE measures?		Analysis of data
	How well has the policy measure been adapted to technological, scientific, environmental, social changes?	- How do you take into account the latest technological solutions?		Interviews with participants
Coherence: how a policy measure works together with other policy measures	Is the policy measure aligned with other legislative acts of Latvia with similar objectives?	Legislative and planning documents on energy and environmental matters	list of documents with harmonised legislative acts	Likumi.lv
	To what extent does the policy measure complement other Latvian or EU policies?	Legislative and planning documents on energy and environmental matters	List of additional legislative texts	Analysis of legislative documents

	To what extent has the policy measure been coordinated with other policy measures in order to mobilise resources in a harmonised way?	Legislative and planning documents on energy and environmental matters	List of harmonised legislative acts	Analysis of legislative documents
Added value – what added value, in addition to its direct objectives, has been created by a policy measure	Has the policy measure generated additional added value?	- What additional added value did you find? - How can I assess that?		Interview with participants
Utility	To what extent does the policy measure satisfy/dissatisfaction the needs of the stakeholders and stakeholders?	- Is the measure helping MoE achieve the goals?		MoE
		- Is the legislative process satisfactory? - If it isn't, what was/needs to be done differently?		participant polls
	How much is the difference between the satisfaction of the various stakeholders and stakeholders?			Analysis of survey results
Equality	How fair have the effects been distributed to different groups of society?	- target groups for information measures - target groups of the implemented EE measures	- number of target groups for information measures	MoE data from member reports
Sustainability	How much is the likelihood that the effect of the policy measure will continue beyond the end of the measure?	Would you continue to participate after its end?		participant interviews
Acceptability	How much can it be seen as changing the perception of a policy measure in audiences and in general in society?	Are you witnessing changes in the targeting and general public of EE measures?		participant interviews