

# Interreg Europe



European Union | European Regional Development Fund

## RESINDUSTRY



Interreg Europe



European Union  
European Regional  
Development Fund

## Action Plan draft

Operational Programme for Cohesion Policy Funds 2021-2027.  
policy objective 2, a greener, low-carbon transitioning towards a net  
zero carbon economy



Low-carbon  
economy

### General information of the action plan

<b>Project</b>	Policies for Renewable Energy Sources in industry
<b>Partner organisation</b>	Tartu Regional Energy Agency (TREA)
<b>Other partner organisations involved (if relevant)</b>	Ministry of Environment
<b>Country</b>	Estonia
<b>NUTS2 region</b>	Eesti
<b>Contact person</b>	Marten Saareoks, marten.saareoks@trea.ee

### Policy context of the action plan

#### Name of the policy instrument addressed

Operational Programme for Cohesion Policy Funds 2021-2027.  
policy objective 2, a greener, low-carbon transitioning towards a net zero carbon economy

<b>The Action Plan aims to impact:</b>	<input checked="" type="checkbox"/>	Investment for Growth and Jobs programme
	<input type="checkbox"/>	European Territorial Cooperation programme
	<input type="checkbox"/>	Other regional development policy instrument

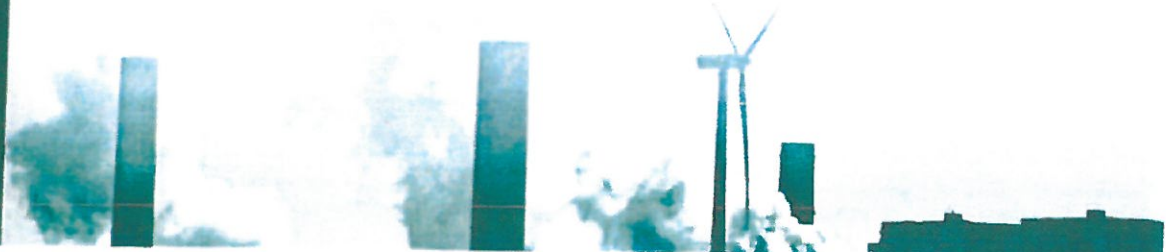
Name of the policy instrument addressed: Operational Programme for Cohesion Policy funds 2021-2027 is not yet finalized and agreed between Member State and European Commission. However, actions described in this document are aimed to develop and implemented by Operational Programme for Cohesion Policy funds 2021-2027. The support measure itself will be based on previous 2014-2020 period experience.





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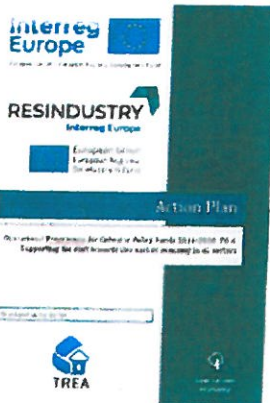
## I. INTRODUCTION

The overall objective of the Policies for Renewable Energy Sources in industry (RESINDUSTRY) project is to increase energy independency and competitiveness of industry sector by decreasing its energy intensity through higher integration of RES. To achieve these long-term strategic objectives, the short-term objectives are to booster RES investment in industry by improving policy instruments with new policies for RES promotion.

In general, European and European industries are highly dependent on imported fossil fuels that have volatile price and does not have high level security of supply with potential supply difficulties taking into account the recent years and especially the beginning of 2022 and supply chain changing events.

To achieve more energy- and resource-efficient industrial sector as well applying RES in industry sector, this is cause and effect to decouple economic growth from increasing resources use. In same time these helping to increase competitiveness and energy independence of industrial sector.

All studies, local and interregional events, introduced practices, exchange of experiences to action plan finalized in the project are serving objectives of the project as is has been seen that industries in EU are using many renewable technologies that are proven to be effective and how policy instruments can support implementing more and more these technologies.



Current action plan is produced in close cooperation between Tartu Regional Energy Agency and the Ministry of Environment, the present action plan is a document providing details on how the lessons learnt from the cooperation will be exploited in order to improve the policy instrument defined. There are only national level policies and measures in Estonia. The OP and its measures are also only on the national level, which means that there are no measures at the regional level.

The present Action Plan specifies the nature of each action to be implemented, the timeframe, the players involved, the costs (if any) and funding sources (if any).

A sample template for the action plan is provided in the programme manual, and has been considered for the definition of some chapters of this document, even if the final structure has been enlarged to explain the whole process followed by TREA to reach the present final document.

The structure of the Action Plan has been enlarged with the objective to give view of learning process and the activities where participants have been involved.

The Action plan has described the following blocks of information:

- The local energy background based on regional assessment and market analysis.
- The Policy Instrument content and expected improvements (by study of renewable energy sources use in industrial sector, stakeholder meetings)
- The learning actions of the project, including meetings and deliverables
- The proposed actions to create the policy change.

The content of this action plans has been submitted to the programme and published on the project websites.





**II. LOCAL BACKGROUND**

Estonia's energy supply is unique among EU member countries, with its strong reliance on domestically produced oil shale that can be either burned for heat and power generation or used for producing liquid fuels. In 2018, oil shale accounted for 72% of Estonia's total domestic energy production, 73% of total primary energy supply (TPES) and 76% of electricity generation.

Estonia also has large domestic biomass resources. Bioenergy and waste accounted for 27% of domestic energy production and 19% of TPES in 2018.

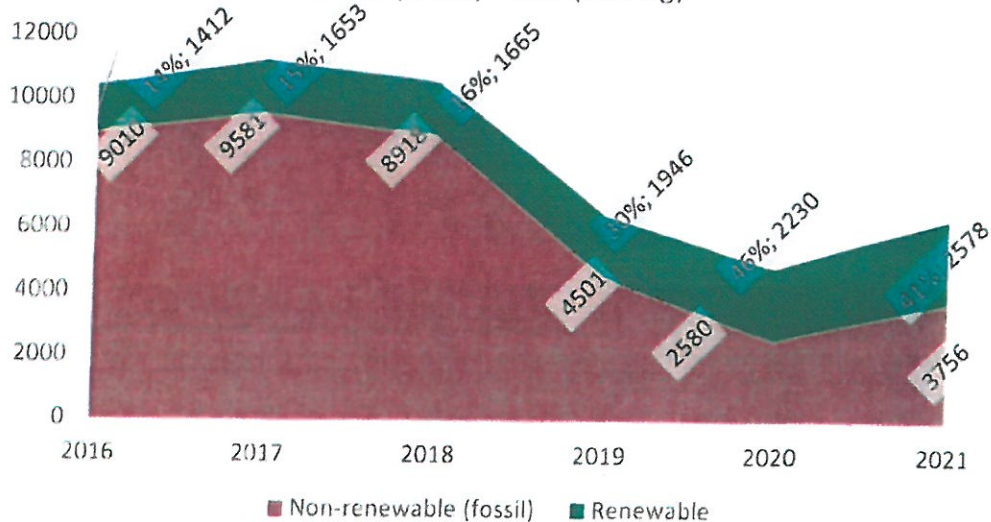
The large oil shale and bioenergy production gives Estonia a higher domestic energy production than its TPES (not including international bunkers). In 2018, the country was a net exporter of several energy sources, notably primary solid biofuels, electricity and shale oil produced from oil shale. However, oil-shale electricity production fell 50% in 2019 and the tendency is that future electricity consumption will not be covered. Moreover, the country fully relies on imports for liquid transport fuels, such as diesel and gasoline, and natural gas.

All together because of that product of Estonia economy are resource-intensive – energy and carbon intensity is one of the highest in the EU, in 2017 relative energy intensity was second behind Finland. Measures taken by enterprises need to be improved - economic growth is still accompanied by increasing use of energy resources. Oil shale industry, especially electricity production form oil shale has drawback of placing Estonia as one of the most carbon intensive country in Europe. Emission factors of consumed electric has been much higher than in other countries or for other energy sources (in some years 5-6 times higher than natural gas or 4-5 times higher than transport fuels).

Year	2016	2017	2018	2019	2020
Emission factor, kg CO <sub>2</sub> /MWh	863	1147	1042	721	492

Even in previous years trend has been to produce fewer electricity from shale oil due high carbon prices, the emissions have been continually higher than in most of EU countries. As well seen on next graph Estonia has just produced fewer electricity than before, from electricity exporting country moved to importing country.

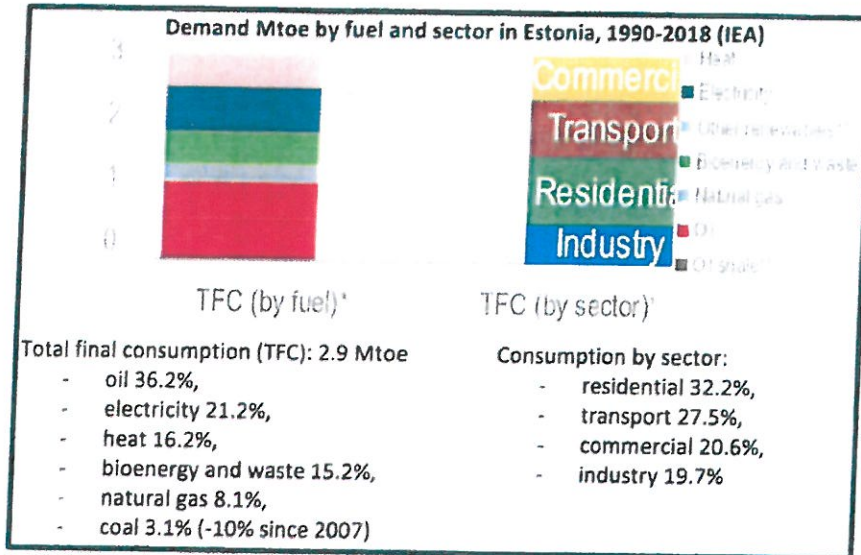
Production of electricity entering the grid in Estonia 2016-2021 (GWh) - TSO (Elering)





2019 and 2020 trend has already been tilted upwards in 2021 as electricity market prices went very high and even doe high carbon prices oil shale power was more competitive again. In next following years it is estimated that in 2021 trend stays same or even growing due to the disconnection of the eastern energy systems and the supply chain. In 2022 commissioned new nuclear reactor in Finland may mitigate it a bit.

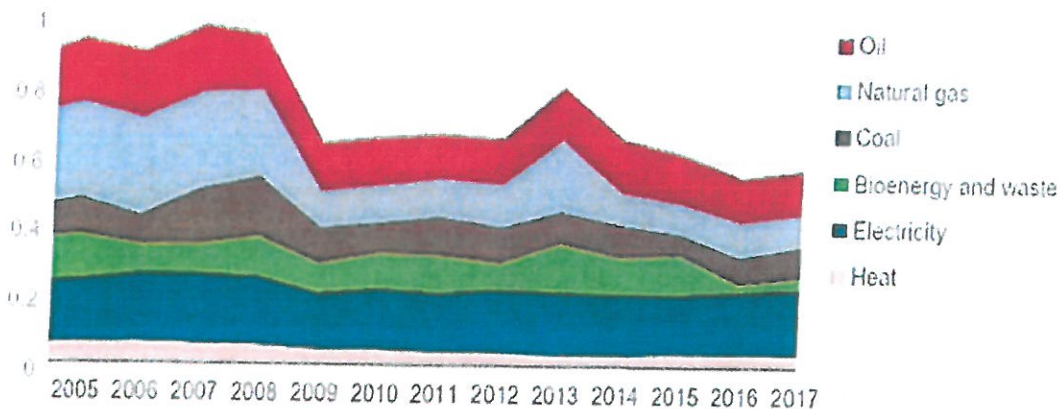
By sectors the residential sector has been the largest energy-consuming sector, accounting for 32% of total final consumption (TFC) in 2017, followed by the transport, commercial and industry sector. Oil and electricity are the main energy sources, with a total share of 58% of TFC. Oil dominates consumption in the transport sector, whereas electricity is the most important fuel in the industry and commercial sectors. Bioenergy accounts for the largest share of energy consumed in the residential sector.



Estonia's economy is becoming more oriented towards services, and energy consumption in the commercial sector has steadily increased over the last decades. In 2017, the commercial sector consumed 0.61 Mtoe, a 22% increase compared to 2007. Agriculture and forestry account for around 20% of total commercial energy demand, mostly diesel oil. The rest is consumed in public and commercial services, which mostly use electricity in appliances and district heating or natural gas for heating.

The **industry sector** is on the opposite trajectory, with a 42% decline in energy consumption in the last decade. Consumption fell by a third in one year after the financial crisis in 2008 and has not picked up since.

**Estonian industry mix demand evolution Mtoe 2017 (Eurostat)**





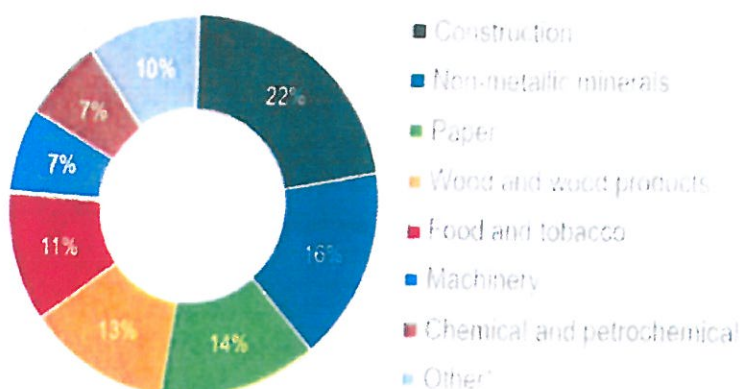
The share of industry in TFC is continuously declining; however, potential for energy savings exists, especially in the wood, paper and food sectors; in mining; and in the construction material sector. The government has identified a savings potential of 36 GWh annually in the manufacturing sector.

In 2017, energy consumption in industry was 0.58 Mtoe, which represented 20% of TFC in the country. Industrial energy consumption has not recovered from the large decline after the consumption peak (2007) before the financial crisis, and has fallen by 42% in the last decade.

Electricity accounts for one-third of total energy use in industry, and the share has increased as consumption of other energy sources has fallen. In particular, bioenergy consumption, mainly in wood industries, has declined significantly in recent years.

As seen in graph below, construction is the largest energy-consuming industry, with 22% of total industry consumption. This includes a large share of bitumen and lubricants used for non-energy purposes (mainly asphalt).

Estonia energy consumption share by industrial sector 2017 (IEA 2019)



After the construction, the largest industry sectors are non-metallic minerals, food and tobacco, paper and pulp, and wood product industries. If construction sector is not included, the results are similar to Odyssee - Mure analysis, where Estonia presents major energy consumptions in: Non-metallic (21,4%); paper (18,4%); wood (16,7%); food (14,5%) and machinery (9,4%) and chemical (9.1%).

Estonia has one of the lowest resource productivity rates in Europe, by Eurostat in 2019 only better than Bulgaria and Romania. By 0,9 euros per kilogram of natural resources Estonia is nearly 2,5 times lower than EU average that was 2,2 kg/€ in 2019 – both by purchasing power standard. Domestic material use per capita was also second highest in EU, just behind Finland in 2019. In Estonia roughly 30 tons per person, compared with EU average, that is around 14 tons, two times higher.





### III. POLICY CONTEXT

Operational Program for Cohesion Policy Funds 2014-2020, thematic objective (TO4) specific objective innovative solutions increase resource productivity of enterprises describes the importance increasing resource productivity of enterprises with main KPI, specific result indicator, of resource productivity. Resource efficiency will be the main indicator for policy measure in Operational Program for Cohesion Policy Funds 2021-2027 under policy objective 2, a greener, low-carbon transitioning towards a net zero carbon economy.

There are only national level policies and measures in Estonia. The OP and its measures are also only on the national level, which means that there are no measures at the regional level. Because of that, the Estonian national plan is also focusing on national level policy instruments and measures. OP's measure, only that kind of measure aimed for industry has been enterprises for energy and resource efficiency of undertakings.

This is regulated by Structural Assistance Act, the implementation of which is within the scope of the Estonian Ministry of Environment (the main managing authority) and The foundation Environmental Investment Centre founded by the ministry (the 2<sup>nd</sup> level intermedial body). These institutions coordinate the areas related to industry sector in Estonia.

Purpose of the the measure is to increase the achievement of energy and resource efficiency in undertakings and supported activites for industry sector have been as follows:

- performance of energy and resource audits;
- investments in the best available energy and resource efficient technology, support for resource management systems and supporting IT applications.

Energy and resource audits are carried out by external experts and not by company. Audit itself is precondition for applying for investment grant and by audit results and suggestions support cab be requested. Audits can be carry out by verified experts, who have completed a course and corresponding certificate.

Sustainable and efficient industries are very important for achieving overall energy and resource efficiency in Estonian. The measures taken by enterprises have been insufficient. The resource efficiency of the Estonian economy is low and economic development clearly results in increasing use of natural resources and negative environmental impact. The products of Estonian economy remain resource intensive, and their energy and carbon intensity is one of the highest in the EU. In 2010 Estonia ranked second in the EU in terms of this indicator, but the tendency is to decrease with a good 30% decrease from 2010, with 5% decrease in 2014 or 10% decrease in 2015. Economic growth is still accompanied by increasing use of energy resources.

RES applied to business and industry has proven to be effective in increasing the competitiveness of enterprises, stimulating eco-innovation and contributing to economic growth in the long-term. The objective of enhancing competitiveness will be pursued through reduction primary energy and increasing resource productivity by using innovative solutions.

Such as in both 'Europe 2020' and 'Estonia 2020' also Estonia 2035 seek to ensure sustainable and low-carbon economic growth, it is necessary to decouple growth from increasing resources use. Energy and resource efficiency in undertakings has been generally well recognized and necessary measure for industries, but its first priority regarding its OP's KPI is to increase resource productivity. As there has been and it is not foreseen coming no specific measures to improve RES use in industries, this has been the measure project has been focusing and measure already has possible RES component, as implemented projects (best practices) are showing. Meanwhile implementation of the project has been increased resource productivity, as well energy efficiency and decreased carbon intensity of enterprises.

Energy and resource efficiency undertakings in measure is planned for 2021-2027 financial period's operational program. It is foreseen that it will not continue before 2023 due discussions and agreement process between member state and European Commission. **Measure is planned under policy objective 2, a greener, low-carbon transitioning towards a net zero carbon economy.** In the project we have contributed into developing that policy instrument to have more RES integration.



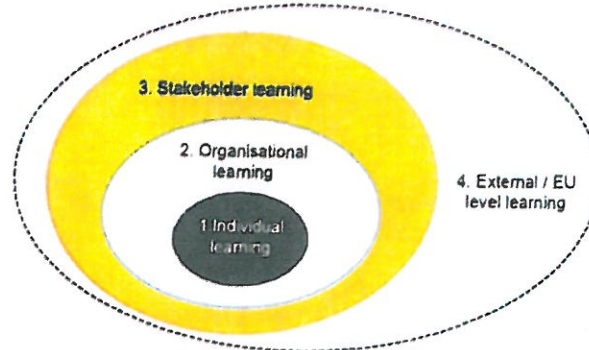


## IV. INTERREGIONAL LEARNING AND STAKEHOLDER INVOLVEMENT

## IV.1. LEARNING EVENTS

The development of the action plan for Estonia has been based on the principles of inter-regional cooperation between the RESINDUSTRY partners and participation of the key players of the region that are, directly or indirectly, involved with energy and resource efficiency in undertakings. Representatives of enterprises, energy auditors, ministries and executive agencies have been involved in discussions on how integrating RES into industry sector is addressed in different regions of Europe. On the other hand, various social housing support measures have been discussed, both national and regional.

Through the implementation of the project actions, and the delivery of project products, TREA has achieved to produce a process of policy learning covering each of the expected 4 levels of learning. In this section, some samples of the learning activities are displayed. Some of TREA activities cover one single level of learning, but most activities achieve to cover several levels at the same time, especially the individual learning which is always included. When designing RESINDUSTRY methodology to carry out the interregional exchange of experience, partners paid particular attention to the multidimensional aspect of the learning process, so the learning process covered the four different levels (see graph below)



The Phase 1 of TREA has followed the indications of the learning process and approach described in the application form, which was also a transcription of the minimum structure that a learning process should have based on the Program Manual. Focus has been on promoting exchange of experience with the rest of the partners through an interregional learning process. This learning process has been the main catalyst for generating the knowledge that TREA required for achieving the expected policy change in its Policy Instrument. Learning process has been based on the identification of necessities, analysis and exchange of knowledge with the rest of partners and selection of best policy practices of renewable energies applied in industries.

The best practice identification, analysis and selection, has been one of the main axes of work in RESINDUSTRY project. RESINDUSTRY partners have analysed the experiences and practices in each region, exchanged them within the projects and disseminated the most interesting findings.

RESINDUSTRY counted on partners that had participated in previous Interreg Europe projects and had provided specific knowledge to design the project approach. Their conclusions were:

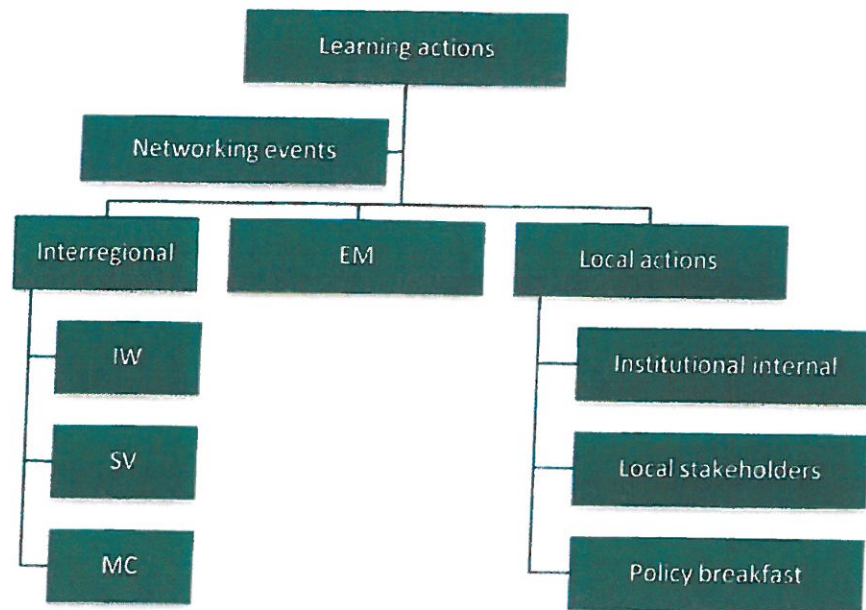
- Interregional workshops are more valuable when there is time enough for stakeholders face-to-face talks.
- Study visits requires prior information about study sites, with initial explanation of the visit, the content and the technical data the visit will show.
- There must be designed new specific tools to increase the capacity of large group of stakeholders from the same region.

As a result, RESINDUSTRY designed in the application form a series of already known and new activities to assure a proper learning process of the project participants:





- **INTERREGIONAL WORKSHOP (IW):** interregional technical meetings of stakeholders, consisting on half-day face-to-face work of staff and stakeholders, in small groups, for core technical activities and decision making of the project.
- **STUDY VISITS (SV):** interregional exchange of knowledge, consisting on half-day visits to identified best practices of interest for the consortium, including a previous explanatory session during IW.
- **MASTER CLASS (MC):** one-day of interactive tuition and training focusing on core project topics, developing capacities. The format of the classes includes lectures, workshop activity, case studies from experts and organisations relevant to RES project investments
- **EXPERT MISSIONS (EM):** as results of Study Visits partners will be able to require the mission of one expert from the institution which provided the best practice, to provide tailor-made training.
- **LOCAL STAKEHOLDER SEMINAR (LSS):** consists of partner staff and stakeholders participating in any consortium learning activities will meet at LSS at each semester to discuss progress, provide feedback.
- **POLICY BREAKFAST (PB):** partners will organize a meeting with high policy representatives to speak about one key outcome of the project, obtain feedback about products or present a policy recommendation.
- **INSTITUTION INTERNAL MEETING (IIM):** staff participating in any consortium and partner learning will gather with other colleagues at each semester to report the activities.



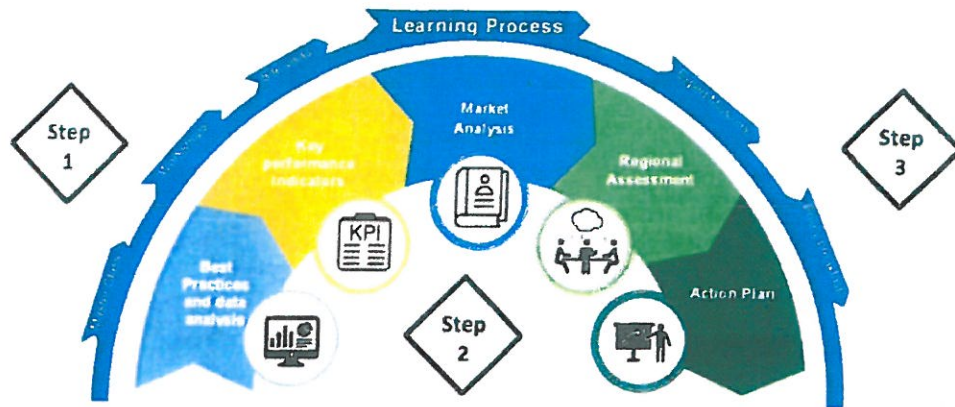
To ensure a successful learning process, even if each activity planned in RESINDUSTRY was defined in a robust quality manner, each partner defined an integrated approach where all activities are logically interlinked. Successful approaches usually follow a logical path.

TREA integrated approach to the learning process has followed 3 simple steps:

- **Step1: analysis of partner situations, identification of valuable experiences.**  
The standard approach is to start with the analysis of the different partners' situations and the identification of valuable experiences and practices.
- **Step2: experience further analysis through activities.**  
This valuable experience is then further investigated through activities such as study visits and thematic workshops.
- **Step3: preparation for the transfer of practices summarized in action plans.**  
Finally, the transfer of knowledge and practices is mainly prepared through the elaboration of the action plans (but can also occur during the exchange of experience phase of the project).







TREA has implemented the different steps through activities which resulted in tangible products and deliverables, which have also supported further activities with a final result of the present Action Plan.

The main products produced in the project have been:

- The Exchange Methodology.
- The Market Analysis.
- The best practices list and final selection.
- The Regional Assessment.
- The study of renewable energy sources use in industrial sector
- The current Action Plan.

#### IV.II. LEARNING EVENTS

##### INTERREGIONAL WORKSHOP (IW), STUDY VISIT (SV)

The main interregional face to face exchange was based on the workshops and study visits, where stakeholders and staff from every partner region met to work on technical documents, share views and opinions, and visit new practices from the hosting partner. Each visit consisted on (due to COVID crisis some of these activities had to change into virtual activities):

- Interregional technical meetings of stakeholders, consisting on half-day face-to-face work of staff and stakeholders, in small groups, for core technical activities and decision making of the project
- Interregional exchange of knowledge, consisting on half-day visits to identified best practices of interest for the consortium, including a previous explanatory session during IW.

Each interregional action has a dossier published in the website, where the information of the technical action is summarised.

The IW and SV has been technically developed as expected, with the exceptions of those face-to-face actions which had to be replaced for online activities due to COVID restrictions. The exchanges produced were:

##### **INTERREGIONAL WORKSHOP IW1 ON BEST PRACTICE (BP) AND STUDY VISIT SV1**

Hosted by Czech Technical University in Prague, University Centre for Energy Efficient Buildings at Prague, Czech Republic. Half day workshop where partners worked on the templates of the BPs to be produced, and another half-day seminar to introduce the local BP as well policy instruments which the project intended to improve, and posterior site-visits.

##### **INTERREGIONAL WORKSHOP IW2 AND STUDY VISIT SV2**

Hosted by Vorarlberg University of Applied Sciences at Dornbirn, Austria. Half-day workshop to present 5 draft practices per region, with a process of peer-review between partners and stakeholders, and a later half-day seminar to introduce and compare policy instruments in the project and to introduce the local BP, and posterior site-visits.





### INTERREGIONAL WORKSHOP IW3 AND STUDY VISIT SV3

Hosted by Ministry for Gozo at Gozo island, Malta. IW had to be online, workshop focused on best practices. A process of presentation, scoring and filtering produced a selection of top 10 good practices for the Policy Platform. This process was also the initiation of the selection of 1 practice per partner to receive the Expert Mission. Study visit at the end of April 2022.

### INTERREGIONAL WORKSHOP IW4 AND STUDY VISIT SV4

Hosted by Marshal Office of Świętokrzyskie Region, online event. One-day workshop for revision of draft RA. Working groups compared KPIs from different Analysis, and conclusions were debated about the KPIs divergences, with half-day seminar.

### INTERREGIONAL WORKSHOP IW5 AND STUDY VISIT SV5

Hosted by Extremadura Energy Agency, but led by Tartu Regional Energy Agency at Badajoz, Spain. Partners and stakeholders worked on groups reviewing the Draft AP. The results were presented and discussed with all participants, including half-day seminar and site-visits.

### EXPERT MISSION (EM)

Part of every interregional learning event has been study visit where partners and stakeholders visited few best practices of host region. One of the results of identifying best practices was that partner regions had list of practices from where select expert missions. Based on the selected BP, partners required the mission of one expert from the institution, company or region which provided the best practice.

The expert mission provided one-day specific learning to a large group of staff and stakeholders of the inviting region. Expert missions are different from Master Class because they are focused on the specific necessities of each partner, allowing a deep capacity building of a large group of stakeholders of a unique policy instrument. As a result, a group of local stakeholders and staff is able to cover specific necessities on a selected thematic, being the missing tool that previous cooperation's have found as lacking in the learning process.

Expert Missions were conceived as the final learning tools in the process prior to the definition of the Final Action Plan. On 10<sup>th</sup> of May 2022 Jaroslav Pavlica from Ministry of Industry and Trade of the Czech Republic visited Estonia to provide expert mission in seminar where participated key stakeholders from Estonia. The experience of the Czech Republic in implementing various measures to support energy efficiency and renewable energy in both the previous and the next financial period. There was a detailed discussion on the technical and evaluation criteria for the support programs.

### MASTER CLASS (MC)

Master Classes had been designed as a point of departure for development of important products or deliverables, so each MC was placed in advance to the starting of a desk work.

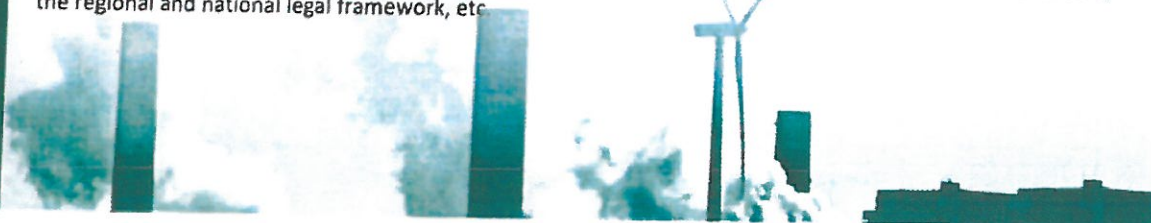
The general structure of the classes consisted on one or two days of interactive tuition and training, with focus on topics which were to be developed in the coming months, such as market assessment, RES project identification, financing solutions and other related topics. The format of the classes includes lectures, workshop activity, case studies and guest lectures from experts and organisations relevant to RES project investments.

#### MASTER CLASS 1 (MC1) ON EXCHANGE METHODOLOGY.

During 2 days consortium detailed each partner strategy for the learning process. 2 staff per partner, guided by an external expert attended the event, hosted by LP.

#### MASTER CLASS 2 (MC2) ON REGIONAL ASSESSMENT (RA).

Master Class on Regional Assessment definition, led by experts and consisting of 1,5 days of lectures, workshops and case studies on RA definition. Partners worked on a template of RA, including a "Strategic Analysis of RES Technologies for regional industry". The results will be environmental and socioeconomic Key Performance Indicators (KPIs) which vary from region to region depending of the natural resources available, the regional and national legal framework, etc.





**MASTER CLASS MC3 ON ACTION PLAN.**

Master Class on AP definition, consisting of 1,5 days work on activities definition. The class included training, workshop and case studies. Led by experts the staff defined the Draft AP using final RA and Policy Breakfast feedback.

**LOCAL LEARNING EVENTS**

Another important part of the project were local events where partners and local stakeholders meet to introduce process of the project, project outcomes and share interregional experiences, as well feedback of stakeholders has been valuable part for learning process. Local stakeholder seminars has been organized regularly among the local stakeholder group.

These seminars have been the second main tool of learning among the stakeholders, just after the study visits, because they assured that the information gathered on the project reached the local stakeholder group. Stakeholders have been in position to receive up to date information about the project, providing any comments and potential improvements of the project activities, assuring that both Regional Assessment and Action Plan were aligned with the Policy Instrument.

There has been five local stakeholder group meets during first phase of the project with around 130 participants.





**V. DETAILS OF THE ACTIONS ENVISAGED**
**V.1. SUMMARY OF OBJECTIVES AND ACTIONS**

Objective	Action	Sub-action (task)
Increase the energy independency and competitiveness of Estonian industry sector by decreasing its energy intensity through an increasing energy efficiency and higher integration of RES.	1. Adapting policy measure "resource efficiency of enterprises" to activities related to renewable energy and energy efficiency.	1.1. Clarifying interests and needs of industrial sector companies regarding implementing renewable energy sources in the context of improving resource efficiency.
		1.2. Extension of eligible costs of the enterprise resource efficiency measure with renewable energy solutions and energy efficiency measures.
	2. Supporting activities for the development of resource efficiency of enterprises.	2.1. Awareness raising of industrial sector companies and their representative organizations
		2.2. Developing the competencies of external experts





## V.II. DESCRIPTION OF THE ACTIONS

### ACTION 1:

**Adapting policy measure “resource efficiency of enterprises” to activities related to renewable energy and energy efficiency.**

#### The background:

The Estonian economy emits three times more greenhouse gases than the EU average per euro of GDP (2019). While large energy producers are reducing their emissions, industrial sector is still using fossil fuels and high emission factor electrical power. Energy intensity in Estonia is as well one of the highest in European Union.

EU average is to produce 2.2 euros per kilogram of natural resources, taking into account the purchasing power of the countries, Estonia's indicator is 0.9, which ranked 25th in the European Union. Therefore, greater emphasis must be placed on green technologies and business models, as well as greater and sustainable valuation of local resources and secondary raw materials. Regarding that the main strategic target of the state is to increase resource productivity, which includes the efficiency of energy use and, if necessary, the replacement of energy production solutions with renewable energy. Specific indicator of evaluating the progress is resource productivity (€/kg) that is an indicator of material efficiency, calculated as the ratio of GDP to domestic material consumption, showing how many euros of added value have been created by using one kilogram of material.

One of the key objectives of the RESINDUSTRY project, funded by the Interreg Europe program, is to learn policy instruments implemented in various European regions that are promoting use of renewable energy in the industrial sector. Most interesting policy instrument in terms of Estonian policy instrument was Czech Republic's Energy Saving Program developed by the Ministry of Industry and Trade, whose main purpose were effective energy management, development of the energy infrastructure and RES, support for introduction of new technologies in the area of using energy and secondary raw materials.

Representatives of the Czech partner and the Czech Republic Ministry of Industry and Trade presented this measure at the project kick-off meeting in Prague (23 Oct 2019), IW2 in Vorarlberg (Austria) on 3 March 2020 and IWS in Badajoz' (Spain) on 14<sup>th</sup> of September 2021.

The Market Analysis and Regional Assessment prepared within the framework of the RESINDUSTRY project identified that Estonian predominant sectors are forest and wood industry, a paper industry and a food industry. And most used renewables in industry sector are biomass and biogas.

During the discussions in local stakeholders seminars in framework of RESINDUSTRY project, where also participated representatives of the Ministry of the Environment and the corresponding implementing body Environmental Investment Centre a common understanding was reached that in a small country like Estonia, it is not practical to develop measure for narrow industry sectors, but rather for all sectors of the manufacturing industry, perhaps integrating measure to other sectors as well, namely for service and business sectors. Representatives of the project partners and stakeholders reached a similar conclusion on 14<sup>th</sup> of September 2021 in Badajoz (Spain), International Workshop 5 (IWS5), where the following topics were in two axis it was valuated should measures target more on specific RES or should have more integrated approach and should measures target specific industry sectors or rather wider target group. All regions preferred more integrated approach and wider target group.

The Good Practice gathered in the RESINDUSTRY project showed that PV panels with or without storage devices for electricity generation and solar panels for heat production have been successfully used in the industrial sector in various partner countries. Good practices were introduced in local stakeholder seminars where representatives of the Ministry of the Environment and the corresponding implementing body (Estonian Environmental Investment Centre), which is mainly responsible for the policy instrument, in order to promote renewable electricity generation, battery solutions, as well the use of solar collectors in heat supply for Estonian industry sector enterprises.





**Action**

In cooperation with the Ministry of Environment and Environmental Investments Centre recommendations for improving the policy instrument (and therefore the support measures) for industrial sector will be elaborated.

**Need:** Improving the conditions of the measure to integrate more RES usage in industry accounting needs of enterprises.

**Tasks (sub-actions):**

► Clarifying interests and needs of industrial sector companies regarding implementing renewable energy sources in the context of improving resource efficiency.

Success factor: The study of renewable energy sources use in industrial sector finalized, analysed and proposals introduced (02.2023), 1-2 stakeholder group workshop on validating interest and needs of industrial sector (04.2023)

► Extension of supporting activities and eligible costs of the enterprise resource efficiency measure with renewable energy solutions and energy efficiency measures

Success factor: Revised version of the measure (06.2023)

**Players involve**

- Ministry of Environment – developing the measure, counselling and supervision of developing the measure.
- Tartu Regional Energy Agency – performing the analysis, drafting the proposals, initiates workshops, monitor success factors
- Environmental Investments Centre – developing the measure, counselling of developing the measures

**Timeframe**

08.2022-06.2023

**Costs and funding**

~6000 € study of renewable energy sources use in industrial sector finalized, analysed and proposals introduced (Tartu Regional Energy Agency)

~ 1000 € - stakeholder group workshop on validating interest and needs of industrial sector (Tartu Regional Energy Agency, ministry of Environment, Environmental Investment Centre)

~human resources – developing the measure (Ministry of Environment, Environmental Investment Centre), revising the measure (Tartu Regional Energy Agency)





**ACTION 2:****Supporting activities for the development of resource efficiency of enterprises.****The background**

Estonia small county with relatively few enterprises in field of manufacturing with less than 8000 enterprises in field and less than 1400 enterprises whose annual sales revenue exceeds million euros. Therefore, the base of examples is also small, especially by different sectors. Related to that knowledge about specific technologies is low with lack of specified experts. There is interest on already proven practices – practices that some company has implemented and its results. It has been seen that interest in practices that are better known and proven, at leads to that some of possible that may have similar or better outcome, not sufficiently known and as well not implemented. Considering the Estonian market also experts, auditors, knowledge is mostly more general and sustainability topics are overshadowed by production process technologies, as first priority of enterprises for decades have been to focus on increasing production.

It is vital to knowledge and to introduce more different and possible practices for enterprises as well raise awareness of sustainability, including energy efficiency, GHG emissions and implementation of renewable energy. Renewable energy solutions in industry are proven to be effective in increasing the competitiveness of enterprises, stimulating eco-innovation and contributing to economic growth in the long-term.

Best practices collected and introduced in local and international level in RESINDUSTRY project are highlighting proven examples of working solutions that should be distributed as much as possible as they are indicating variety of different implemented and proven solutions. Electricity produced by photovoltaic panels are among most popular cases because of reduced price of technology as well already many proven examples. PV panels would have high impact on decarbonization of enterprises in Estonia due very high carbon content in Estonian power grid electricity mix. But other technologies used in best practices should be also introduced as to raise awareness of them to be ready to evaluate the potential of implementing them as they may be in some cases with better outcome. Even PV panels projects need additional evaluation as optimization energy use, increasing of on-site usage that company can benefit more through battery installation or optimization or load shifting. More integrated approach should be considered with every project. More integrated approach can give better overall outcome for company that was strongly supported by all partners at Interregional Workshop on 14<sup>th</sup> of September 2021 in Badajoz (Spain).

Due rapidly raised energy prices starting from 2021 and Ukraine war crisis the interest and motivation to increase security of supply, energy independency and cut down energy prices with increasing energy efficiency and implementing renewable energy technologies is very high. Motivation to be more sustainable comes also from other direction as increased consumers awareness of sustainability and climate goals provide additional impetus. At Interregional Workshop on 14<sup>th</sup> of September 2021 in Badajoz (Spain) group work and later discussion many partners indicated that fewer bureaucracy and awareness rising are one of the most needed activities to support RES implementation in industries.

It is very well seen that supporting activities for the implementing and expanding measure result are needed. There should be information days and workshops for enterprises and auditors to introduce proven practices, support measure, as well conditions and applying process that first of all just rises awareness among them, but also guiding application process should help enterprises to be more prepared and mitigates so called bureaucracy that may partly be just low awareness. The development of unit prices for technological solutions can also simplify and speed up the application process, this should be considered in meetings with the parties. Other support action should be to train more external experts who should have wider knowledge of technology and sustainability.





**Action**

Developing supporting activities to raise awareness, improve knowledge and motivation of the enterprises.

**Need:** By the nature of the measure that includes resource auditing prior implementation grant external experts for auditing the enterprises is needed as well raising awareness and benefits to aim company to start thinking about RES potential and benefits.

**Tasks (sub-actions):**

► Awareness raising of industrial sector companies and their representative organizations

**Success factor:** 2-3 information days/workshops meetings to introduce support measure and its options and implemented practices (01.2023-07.2023)

► Developing the training plan and the competencies of external experts

**Success factor:** 35 trained experts (01.2023-07.2023)

**Players involve**

- Ministry of Environment – organizing and coordinating the flow of events, initializing the dialogue between auditors, enterprises and representative organizations.

- Environmental Investments Centre – co-organizing the events, initializing the dialogue between auditors, enterprises and representative organizations.

- Tartu Regional Energy Agency – distribution of information, proposing the topics, monitor success factors

**Timeframe**

01.2023-07.2023

**Costs and funding**

~ 2000 € - information days (Tartu Regional Energy Agency, Ministry of Environment, Environmental Investment Centre)

~15000 € - training course for resource and circular economy experts (Ministry of Environment, Environmental Investment Centre)

~human resources – monitoring success factors, co-organizing the events (Tartu Regional Energy Agency)

*Marten* 28.07.2022

Marten Saarekivi  
RESINDUSTRY project manager  
Tartu Regional Energy Agency

Date: 21.07.2022

Name: Mihkel Krusberg

Position: Acting as Head of Unit, Environmental Management Department, Estonian Ministry of the Environment

Signature: 

Stamp of the organisation (if available): \_\_\_\_\_

**Disclaimer:**

We support the actions described in the action plan and are planning to implement them, while considering that the operational plan has not been approved, which may or may not lead to changes in the action plan.

