

Regional energy visions for sustainable energy future

South Bohemian Region (CZ)
Borsod-Abaúj-Zemplén and Heves counties (HU)
Ignalina Nuclear Power Plant region (LT)
Vidzemes Planning Region (LV)
North-East Planning Region (MK)
Mazovian Voivodeship (PL)
Bucharest-Ilfov region (RO)
Podravje Region (SI)
North Bulgaria (BG)
Estonia (EE)

Deliverable D3.3
English version

PANEL 2050 – Partnership for New Energy Leadership 2050

Date: May 2018

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Compiled by:

Jan Jareš, AgEnDa z.s.,
jares@os-agenda.cz

Astrid Buchmayr, ConPlusUltra GmbH
Astrid.Buchmayr@conplusultra.com



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Introduction

About PANEL 2050 project

The PANEL 2050 project has the aim to create durable and replicable sustainable energy networks at local (municipality/community) level, where relevant local stakeholders collaborate for the creation of a local energy visions, strategies and action plans. The aim of these networks is to contribute to and actively work for the transition towards low carbon communities in 2050. The PANEL 2050 partnership will provide support for the creation of first successful local energy networks in the CEE countries. In the course of the project, organisations from 10 CEE countries will collaborate on creating regional energy strategies and action plans. For more information visit ceesen.org/panel2050.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 696173.

The PANEL model

PANEL model is a comprehensive approach for implementing local long-term energy management, supported by the community. PANEL model consists of seven main elements: Stakeholder Engagement, Training Program, Guidebook, Long-term Energy Visions/Roadmaps/Action Plans and Central and Eastern European Sustainable Energy Network CEESEN. These elements are developed by PANEL 2050 project to support the CEE communities on achieving their sustainability goals.

Energy Visions, Roadmaps and Action Plans are the outputs of the long-term energy planning process with the aim of plotting the regional transition towards a low-carbon community. These components of a regional energy strategy are developed with the organized support of stakeholders and forerunners that will take the initiative of implementing the plans in the future.

In the beginning of the work, local stakeholders of sustainable energy and transport sector were identified, their role was evaluated, and they were invited to participate in the long-term energy planning, while bringing their knowledge and validation into the process. Stakeholders have been supported by engagement experts and capacity building activities. These forerunners have organized into Roadmapping Teams and they were participating in the setup of the visions. This cooperation will continue throughout the next steps on setting up the Roadmaps and Action Plans.

After initial implementation, PANEL model can be used by the forerunners in other regions inside and outside of EU. For more information visit ceesen.org.

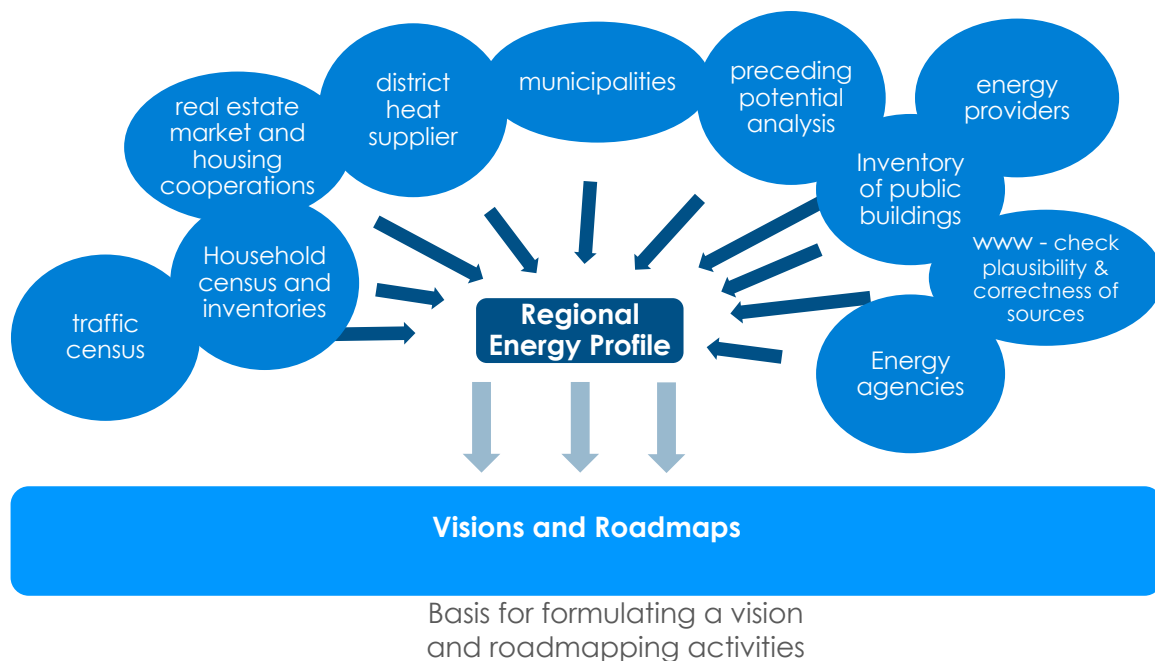
PANEL2050 model for Central and Eastern Europe Sustainable Energy Network CEESEN



Regional Energy Profiles

The Vision builds upon the knowledge collected and processed during the baseline analysis in stage 1. Based on this solid assessment of the status quo projections can be made.

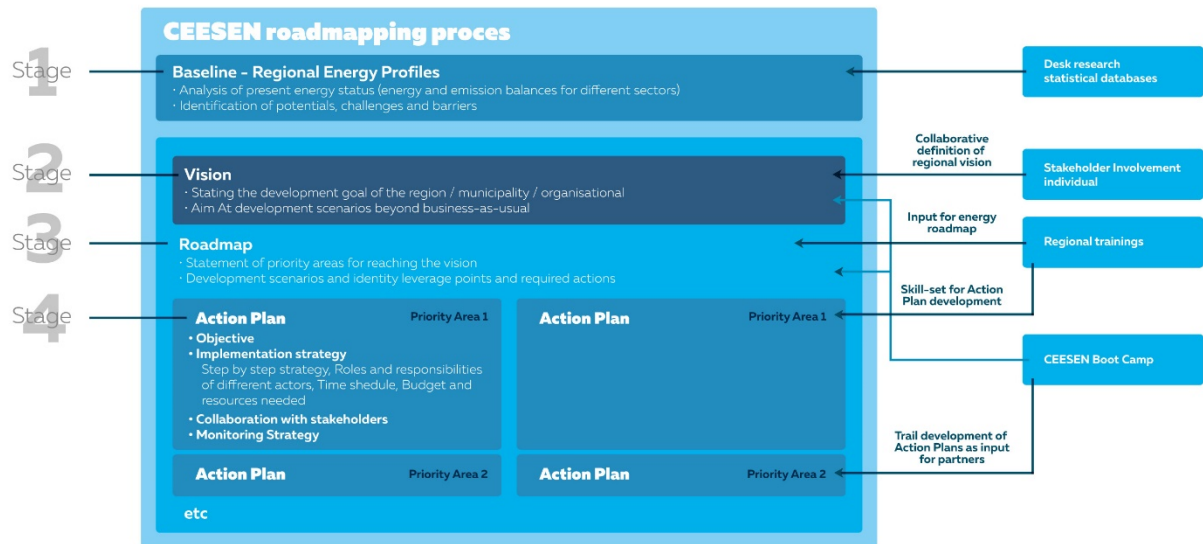
The baseline in the CEESEN model was compiled on regional level using the format of so-called Regional Energy Profiles. These profiles presented not only energy statistics but also identified potentials, challenges and barriers regarding changes in the energy sector. The collection of energy data was done using mostly primary data as basis for region-specific estimates as energy data on the required regional level was in most partner countries not available.



Energy Visions

Creating a Vision is the first formal step towards energy transition. Vision helps to describe the desired outcome and spell out the desire to change. Visioning process, if done right, will help to build acceptance and support among the community for a change to happen. Vision will help to mobilize the people and investments to push the community to the right direction. Local Energy Vision is the first milestone of Roadmapping process in PANEL 2050 project.

The roadmapping part of the PANEL model is presented in more detail showing the 4 steps essential for the regional roadmapping.



Visioning, after the baseline study, is stage 2 of the roadmapping model. It is directly following the capacity building activities for the stakeholders participating in Roadmapping Teams. Visioning process is gaining from this increased capacity and new skills of the forerunners to promote and advocate their individual visions for the community. With the development of a common vision the roadmap gets a clear headline. It should answer the question for the regions, municipalities or societies of the direction in which development should be heading.

The vision constitutes the headline and guiding principal of the Roadmap. This ultimate goal should be ambitious and go well beyond a pure projection of business-as-usual development. The vision has to be concrete, stating quantified goals and a time frame.

This clear vision is essential for planning future steps. In roadmapping a **backcasting approach** is recommended in contrast to simple forecasting.

Forecasting is a predictive tool but mostly it doesn't provide you with a connection to your vision and delivers no new perspective for points of leverage.

Backcasting on the contrary starts from a vision statement and then looks back to assess what would be required to get there. This method leaves space for

innovative ideas and radical actions opening up the dialogue what different actors (policy-makers, industry, NGOs, consumers) can or have to contribute.

CEESEN Energy Visions

This document presents Local Energy Visions from 10 Central and Eastern European regions translated into English and compiled into one document: South Bohemian Region (CZ), Borsod-Abaúj-Zemplén and Heves counties (HU), Ignalina Nuclear Power Plant region (LT), Vidzemes Planning Region (LV), North-East Planning Region (MK), Mazovian Voivodeship (PL), Bucharest-Ilfov region (RO), Podravje Region (SI), North Bulgaria (BG) and Estonia (EE). Visions in local languages are available in ceesen.org. The presented visions all refer to a development paths with a time horizon until 2050. The visions take into consideration already existing targets (national or EU-wide), e.g. for 2020 and 2030 – if possible broken down to regional level). All visions contribute to the national and EU-wide climate change mitigation strategies and targets. In the formulation coherency of the vision with other policy documents was observed, e.g. economic and regional development, employment strategy, agriculture policy, etc. Consistent with the project objective the vision described the regional interpretation and contribution towards a low-carbon economy.

The visions were developed with strong supervision of the PANEL partnership but with the involvement of diverse stakeholders and a selected roadmapping team.

The type of stakeholder involvement differed between the PANEL partners ranging from repeated consultation with key actors and policy makers, vision workshops with diverse group of stakeholders, to larger surveys covering impacted policy makers.

An analysis of the vision documents showed that the focus regions approach the path towards a low-carbon economy in different ways. The chosen development targets and paths strongly depended on the regional characteristics. Both institutional framework conditions as well as geographical/resource-wise characteristics influenced the direction of the stated targets.

The 9 visions presented here focus each on specific region, one of them (EE) targets national level.

Most visions (8 out of 10) directly mentioned the needed increase of the renewable energy share as essential component to reach the low-carbon economy. 6 of these regions also claimed increased energy efficiency as complementary condition. The role of innovative technologies and in particular the use and development support for smart energy production and consumption technologies was emphasized.

A couple of regions pledged to become forerunners in their countries and EU-wide, e.g. the region of South Bohemia (CZ) through setting the cornerstones for establishing off-grid buildings as building standard in South Bohemia,

Bucharest-Ilfov region aiming to become the first energy efficient region of Romania, or the Podravje region (SI) becoming a forerunner in terms of smart energy systems.

Specific barriers were identified which are at the moment hindering the development towards a low-carbon economy and need to be addressed in order to reach the vision. A significant barrier for the realisation of the vision is the low availability of domestic expertise and consultancy services both for public and private sector. PANEL2050 already started to address this barrier through focused regional training during the project duration. Trainings and knowledge transfer will also play an important role in the future to realise the vision.

Moreover, there is a lack of awareness in the general population about climate change mitigation and the influence of the energy sector or individual energy consumption on GHG emissions.

Partners from the focus regions together with their stakeholders identified a certain lack of political will to support and implement a transition to a low carbon economy through legislation changes or strict and binding policy targets. At least 5 of the focus regions are encountering this problem. This includes also bureaucracy for approval of RES facilities, inconsistencies between policy strategies (e.g. environmental and economic development) and a strong commitment to conventional and centralised energy systems.

The visions were developed with strong involvement of different stakeholder groups. In almost all cases local municipalities were involved in the determination and formulation of the vision statement. In some cases, e.g. MK, also regional government representatives were included to ensure the endorsement of the vision. Strong partners in the development process were experts from the energy sector as well as representatives of interest groups and NGOs. Where the private sector plays an important role for the implementation of the vision, e.g. in South Bohemia (CZ), Vidzemes region (LV) and Mazovian Voivodeship (PL), representatives of local businesses, including technology providers were included as well.

In conclusion, most of the vision documents already give a good indication, where the following Roadmap and Action Plans will lead. A few documents are still undetermined about the development scenario, which will lead to reaching the vision. There will be a special focus on that aspect during the preparation of the Roadmap and where needed too ambitious statements might need to be adapted. In general, the realisation of the set vision until 2050 is assessed as doable, provided the continuous support and commitment of policy makers and CEESEN members alike. For this reason, the endorsement of the following Roadmaps and Action Plans by implementing parties is key for the roadmapping teams. Following energy visions have been elaborated using above mentioned approach and principles.

ENERGY VISION

Region: South Bohemia, Czech Republic
English version

prepared by
AgEnDa z.s.

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**CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK**

Vision Statement

By 2050 South Bohemia will exploit its natural and economical preconditions to become a centre for technology and knowledge in the sector of **self-sufficient buildings, biogas utilization and advanced knowledge base for financial instruments** focused on Energy Efficiency and Renewable Energy Sources investments.

Vision Description

Within building up the stakeholder network and roadmapping process initiated by AgEnDa z.s. (Czech partner of PANEL 2050 project in South Bohemia) the group of extraordinary forerunners formed under the initiative called Český ostrovní dům (Czech Off-Grid House, hereinafter "COD") has been approached. In 2015 this fast-growing platform was awarded the UN Prize for Social Benefits as well as the Energy Globe Award for Energy Innovation. After number of talks, continuous activity monitoring and evaluation AgEnDa offered to support COD within PANEL 2050 activities starting with participation at CEE Energy Transition conference (Prague 2017), followed by the Boot Camp (Budapest 2018) and finally but not least taking over the main role in roadmapping process.

AgEnDa proposed following steps for the development of national technology platform focusing on self-sufficient buildings:

1. Evaluation of COD progress sofar with verification of basic challenges and current market potential / focus (September – November 2017)
2. Institutionalization – forming an appropriate legal entity with clear mission and concrete focus => National Technology Platform (December 2017)
3. Building up the platform – members (December 2017 – ongoing)
4. Elaboration of Vision and Strategical Research Agenda = Roadmap and Action Plans (September 2018)
5. Full deployment of National Technology Platform – financing, management, international linkages (2019 and beyond)

Building on the self-sufficiency of buildings using modern methods of natural resource management and architecture is a clear direction of the future and a rapidly growing segment. The Technology Platform will be studying the linking of fully functional, progressive and sophisticated solutions at different levels of self-sufficiency in eco-friendly buildings, building blocks, and wider areas of settlements. The main mission is to accelerate the take-up of modern technologies ensuring complete or partial self-sufficiency in different building environments.

At the same time AgEnDa has been facilitating two other initiatives brought up by other group of regional forerunners (Czech Biogas Association, South Bohemian Agency for Support to Innovative Entreprising) and therefore Regional Energy Roadmap and related Action plans will also be focused on biogas utilization and financing of energy efficiency and RES investments.

Addressed barriers

Worldwide electricity consumption is growing and, with it, the interdependence of states, sub-areas, firms and households on external entities or supplies. In the past, thermal and nuclear power plants have been installed, which is the production of limited, exploitable energy, which has only limited quantities on the ground. An expected solution to the problem of the gradual decline of non-renewable resources and the increasing demand for energy self-sufficiency are photovoltaic (solar), water, wind and other types of power plants that together form a group of so-called renewable energy sources (RES).

In the context of this issue, one of the possible future solutions for the storage of electricity in various forms and usage scales. Types of these accumulation systems are many with power ranging from kWh to GWh for the largest ones. Accumulation of electricity is an opportunity for accelerating Czech and international modern energy and a key factor in energy self-sufficiency. Developing affordable energy storage is also crucial for the development of renewable energy use or electromobility. However, the emergence of batteries can not be achieved without a clear legislative framework that appropriately regulates their use by various entities, to individual households or buildings.

The main drivers within biogas utilization are those that determine demand and supply, respectively the extent of biogas production and its use, primarily in the energy sector. There are three factors: i) operating subsidies, ii) price of power electricity sold by biogas station, iii) demand for biomethane and its price.

Following barriers are to be addressed:

- 1) bureaucracy and legislative barriers
- 2) technology
- 3) awareness
- 4) financing

Required data for scenario development

In order to develop quality roadmap and concrete measures following types of data will be required mostly:

- **overview of available technologies and their foresight** – e.g. decentralized energy systems, energy storage systems, waste and water management, intelligent building management, measurement and regulation, etc.
- **business models / socio-economic overlaps** – financing, communal and shared economy approaches
- **R&D and application infrastructure** – analysis and coordination of R&D environment, capacities and application, market research

Involvement of stakeholders

See Annex

Contact person: Jan Jareš, jares@os-agenda.cz



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REGIONAL VISIONS

Stakeholders involvement

Annex to D3.3 – Czech Republic



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

1. Stakeholders involvement in energy visioning

Since the beginning of the project we have been developing stakeholders network following the effort of establishment potential core group that would be involved more intensively in regional roadmapping process.

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In course of the project we have got in touch with almost 30 of them which we found the most important and influential based on our previous knowledge. We have been cooperating with some of them before (especially closely with national technology platforms, R&D institutions, regional associations and NGO's), some of them were introduced to us via existing relations (university centres, clusters and municipalities) and finally some of them were newly established contacts (especially those active in building sector).

In July 2017 we have conducted the workshop at Ministry of Environment that implied later cooperation with two forerunners (*L. Gál from National technology platform for biofuels and J. Matějka pro Czech Biogas Association / ECO Research Centre*).

The main goal of this event was to discuss integrated initiative focused on energy transition and self-sufficiency. Mr. Gál presented his view on future concept of multisectoral approach focused on R&D, innovations, pilot investments as well as infrastructure development. With regard to intersector character of this initiative all related Ministries were invited (Ministry of Trade and Business, Ministry of Spatial Development, Ministry of Environment and Ministry of Agriculture).

From the energy point of view the focusing point is to foster the regional energy self-sufficiency, job creation and development of regional business. Environmental aspect is dealing with increasing water retention in landscape by improving forestry management and provision of local biomass for local heating systems. From the agricultural point of view application of procedures in order to provide sustainable biomass resources. Spatial development part of the project is based on regional actors synergies through different types of collaborative models.

After introduction of PANEL / CEESSEN mission and activities individual topics for each resort were presented and the potential overall integrated approach to all of them was discussed.

1. Identification of regional priorities for biomass and its local use
2. Potential and possibilities of forestry soil fund
3. Potential and possibilities of agricultural soil fund
4. Regional management and business active region
5. Benefits and engagement of local population (regional gasification)

Feedback from each resort:

Ministry of spatial development (MMR)

- marginal topic, however the contribution to the regional development (rural areas) should be highlighted
- how regional identity could be developed (engagement, use of forest, well-being aspect, social impacts, etc.)
- not compliant with integrational approach according to EC regulations
- impact study needed first

Ministry of Environment (MŽP)

- interested in local potential of biomass (local heat plants)
- efficiency of gasification systems vs other technology?
- eco-friendly forestry including biomass utilization
- possible funding from Theta (national research programme), application guarantee could be municipality or association, MPO as well if needed

Ministry of trade (MPO)

- MPO is more focused on national level rather than regional however interested in outputs
- it's required to fit into other frameworks (NREAP)
- quantification of biomass or potential of gasification
- pattern system, multiplication
- pilot solution is interesting for MPO

With respect to the conclusions and feedback we received from this workshop we have decided to extend our effort to other sectors so we were able to identify more advanced initiatives that could have potential to really make the difference in the energy transition.

At that time (August – September 2017) we were entrusted with the arrangement of CEE Energy Transition conference in Prague (19 – 20.10. 2017) and thanks to intensive communication to potential speakers and guest from the Czech Republic we have established closed contact with pioneering platform “Český ostrovní dům” (Czech Off-Grid House) and his author Pavel Podruh who gave very motivating presentation of their success story. From this point close cooperation between CEESSEN and Czech Off-Grid House started and led to number of joint meetings.

Along with other forerunners and stakeholders (namely Ekoport, JAIP, ECO trend, etc.) we have put a plan how to help this initiative (having been collecting prestigious awards in the meantime) move forward and support them in establishment of national technology platform for self-sufficient housing.

As a result of several meetings and along with the knowledge gained from Boot Camp where two involved forerunners (Mr. Gál and Mr. Brýda from Czech Off-Grid House) the regional vision was defined in May 2018.

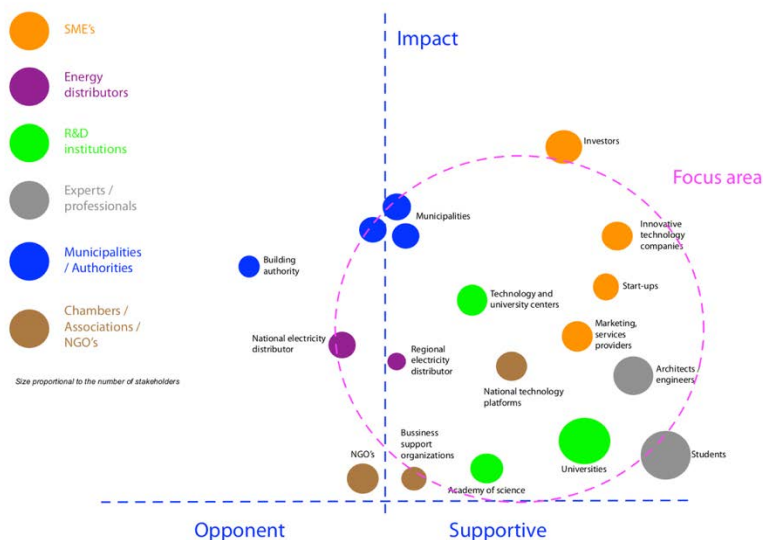
2. Regional stakeholders and forerunners network

Name	Operation	Type
Ministry of Trade and Business (MPO), Department of Energy	National	Public body
Ministry of Agriculture (MZe), Department of RES	National	Public body
Ministry of Spatial Development, Regional policy department	National	Public body
Ministry of Environment, Energy and Climate protection department	National	Public body
The Silva Tarouca Research Institute for Landscape and Ornamental Gardening	National	Research institution
Ministry of Environment, Nature Preservation department	National	Public body
Ministry of Trade and Business, Gas and Liquid Fuels Dep.	National	Public body
National Technology Platform for Biofuels	National	National technology platform
Czech Biogas Association	National	National technology platform
Czech Off-Grid House	South Bohemia	SME
Czech Off-Grid House	South Bohemia	SME
Czech Off-Grid House	South Bohemia	SME
Ekoport z.s.	South Bohemia	NGO
Asociace NGV z.s.	National / South Bohemia	National technology platform
Středisko pro efektivní využívání energie, o.p.s.	National / South Bohemia	NGO
Jihočeská univerzita v Českých Budějovicích	South Bohemia	University
European Biogas Association	International	European Association
Jihočeská Silva Nortica	South Bohemia	Association
Univerzitní centrum energeticky efektivních budov ČVUT	National	University
Komora obnovitelných zdrojů energie	National	NGO
Technologická agentura České republiky	National	Public body
KLASTER Bioplyn, z.s.p.o.	National	Cluster
Jihočeská agentura pro podporu inovačního podnikání, o.p.s.	South Bohemia	Support business organization
MAS Rozkvět	South Bohemia	Microregion
Radošovice (municipality)	South Bohemia	Municipality
Prachatice (municipality)	South Bohemia	Municipality
E.ON Česká republika, s.r.o.	National / South Bohemia	Energy provider
Jihočeská hospodářská komora	South Bohemia	Public body
Svaz měst a obcí Jihočeského kraje	South Bohemia	Public body
OTE, a.s.	National	Market regulator
Energy Centre České Budějovice	South Bohemia	NGO
EkoWatt	National	NGO
Enviros, s.r.o.	National	NGO
Ústav výzkumu globální změny AV ČR, v.v.i.	National	Research institution

Česká společnost pro větrnou energii	National	Association
Česká geotermální asociace	National	Association
CZ Biom – České sdružení pro biomasu, z.s.	National	Association
Aliance pro energetickou	National	Association
Solární asociace	National	Association
Česká fotovoltaická asociace	National	Association
Výzkumný ústav rostlinné výroby, v.v.i.	National	Research institution
Faculty of Agriculture, SB University	National	PhD, scientist
Research Institute of Fish Culture and Hydrobiology	National	Technical Assistant
Faculty of Health and Social Sciences	National	PhD, scientist
Algatech	South Bohemia	project manager
Institute of Hydrobiology	National	PhD, scientist
Technical University of Brno	National	associate professor
Faculty of Science, SB university	National	PhD, scientist
ProAgro Radešínská Svratka, a.s.	National	biogas plant operator
RES Development s.r.o.	National	project manager
Solmilk a.s.	National	consultant
ZD Vícov	National	biogas plant operator
Agro CS a.s.	National	biogas plant operator
Potápěčská stanice, a.s.	National	specialist, diver
EnviTec Biogas Service s.r.o.	National	engineer
Energoservis DSJ, s.r.o.	National	project manager, engineer
Vítkovice ENVI a.s.	National	engineer, consultant
Energy produkt plus s.r.o.	National	project manager
Agro Energo a.s.	National	biogas plant operator
Meryden a.s.	National	sales rep
Zemědělská a.s. Horní Bradlo	National	biogas plant operator
Energy financial group a.s.	National	financial advisor
agriKomp Bohemia s.r.o.	National	technology supplier
Čepro a.s.	National	project manager
Farmtec a.s.	National	consultant
VSK profi, s.r.o.	National	technology supplier
Weltec Biopower ME s.r.o.	National	technology supplier
Potápěčská stanice a.s.	National	specialist, diver
Rolnická a.s. Králíky	National	biogas plant operator
Vítkovice Envi a.s.	National	biogas plant operator
Úslava Bioenergie a.s.	National	biogas plant operator
DZV Nova a.s.	National	biogas plant operator

DZV Nova a.s.	National	biogas plant operator
NRG Flex s.r.o.	National	technology supplier
ČEZ Esco a.s.	National	project manager
Agrikomp Bohemia	National	technology supplier
NRG Flex s.r.o.	National	technology supplier
ČEZ a.s.	National	project manager

Visualization of stakeholders group's positions



3. Overview of related communication / events

Date, place	Participants	Content / Results / conclusions
20.7. 2017, Prague	<ul style="list-style-type: none"> Vlastimil Šantín, Ministry of Trade and Business (MPO), Department of Energy Jaroslav Hudáček, Ministry of Agriculture (MZe), Department of RES Richard Nikischev, Ministry of Spatial Development (MMR), Regional policy department Lukáš Minařík, Ministry of Environment (MŽP), Energy and Climate protection department Jan Weger, The Silva Tarouca Research Institute for Landscape and Ornamental Gardening Pavel Chotěboř, Ministry of Environment (MŽP), Nature Preservation department Jan Zaplatílek, Ministry of Trade and Business (MPO), Gas and Liquid Fuels department Leoš Gál (National Technology Platform for Biofuels) Jan Matějka (Czech Biogas Association / ECO trend) 	<p>The main goal of this event was to discuss integrated initiative focused on energy transition and self-sufficiency.</p> <p>Main results:</p> <ul style="list-style-type: none"> received feedback from related ministries on potential approach towards regional visions introduction of CEESEN at the highest level decision to extend to other sectors (transport, building)

21.7. 2017, České Budějovice	<ul style="list-style-type: none"> - Pavel Podruh (Czech Off-Grid House) - Jan Jareš (AgEnDa) 	First introduction of CEESEN and goals + invitation to the conference CEE Energy Transition as speaker
5.2. 2018, České Budějovice	<ul style="list-style-type: none"> - Pavel Podruh (Czech Off-Grid House) - Jakub Hořický (Czech Off-Grid House) - Jan Jareš (AgEnDa) - Jan Matějka (ECO trend) 	Formulation of initial steps towards foundation of national technology platform
14.3. 2018, Prague	<ul style="list-style-type: none"> - Jan Matějka (ECO trend s.r.o.) - Jan Štambaský (European Biogas Association) - Miroslav Kajan (Czech Biogas Association) - Jan Jareš (AgEnDa) 	After training session – discussion on formulation of regional vision for biomethane utilization based on technology and policy foresight elaborated by CzBA.
23. - 27.4. 2018, Budapest	<ul style="list-style-type: none"> - Daniel Brýda (Czech Off-Grid House) - Leoš Gál (National Technology Platform for Biofuels) - Jan Jareš (AgEnDa) 	Capacity building and re-drafting the regional vision concept
24.5. 2018, České Budějovice	<ul style="list-style-type: none"> - Pavel Podruh (Czech Off-Grid House) - Jakub Hořický (Czech Off-Grid House) - Jan Jareš (AgEnDa) - Jan Matějka (ECO trend) - Luboš Nobilis (AgEnDa) 	Finalization of the regional vision for 2050 and drafting next steps in roadmapping process + discussion on action plans

To be filled by WP leader

Attendance sheet(s) was/were collected	X
Excel list 'Stakeholder Engaged in PANEL 2050' was updated and sent to WP leader	X



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ENERGY VISION

**Region: Borsod-Abaúj-Zemplén and Heves
counties**
English version

prepared by
WWF Hungary

PANEL 2050 – Partnership for New Energy Leadership 2050
Deliverable 3.3

Date: May 2018



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

Vision Statement

In 2050, the population of Borsod-Abaúj-Zemplén and Heves counties will be healthy and climate aware, consume energy in an efficient way from locally available renewable energy sources, emit 70% less CO₂ than in 1990, and its economy will be based on innovative, green technologies.

Vision Description

The two counties published their 2030 climate strategy (with outlook to 2050) in 2017-2018. The calculated current GHG emission is 5 614 thousand CO₂ equivalent. Contrary to the Regional Energy Profile (REP), the calculation also includes the GHG emissions from waste management, however, this value is 5% lower than the amount calculated in the REP, which is 5 898 thousand CO₂ equivalent. The applied methodology of the county-specific climate strategies is not known, however, this 5% difference between the two GHG inventories is not an influencing factor regarding long-term GHG emission reduction efforts and targets.

Mainly due to the collapse of the heavy industry by the end of the Soviet era, the current GHG emission is 40% less than it was in 1990. The level of emission from 1992 until 2008 has stagnated (at around 60 million t CO₂ equivalent/year), after which it has decreased significantly due to the economic crisis. However, in the last years it increased again to the current level of 54,2 million t CO₂ equivalent/year (data from 2015). Because of this hectic trend, it is difficult to set up a BAU scenario on local level. Also, the energy consumption is closely linked to CO₂ therefore not suitable to be the basis of a BAU scenario. According to the [EU Reference Scenario](#), the CO₂ emission can be reduced by 60% from the current level (by around 50% compared to the 1990 level), only by assuming that the legally binding GHG and RES targets for 2020 will be achieved, and that the policies agreed at the EU and Member State level until December 2014 will be implemented.

During the development of the energy vision, a 70% GHG emission reduction target compared to 1990 levels was defined. The revised National Climate Strategy (which was not approved by the parliament yet) sets a 52-77% GHG reduction target by 2050 compared to the 1990 level (Hungary already reached -40% reduction), the two county-level climate strategy (only available in Hungarian) sets a 60% goal, respectively. Comparing to those, the 70% reduction goal set by the stakeholders is ambitious, however, the current EU target is 80-95%.

Since there is no long term regional or national renewable energy or energy efficiency/saving target, the vision specific target was determined in GHG saving, which is comparable with the regional and national goals.

CEE region is lagging behind in the energy transition compared to Western Europe: the national 2020 targets are among the lowest, and in the ongoing Clean Energy Package triologue negotiation, usually it is the CEE countries that are against the reforms which are essentials to meet the aim of the Paris Agreement. Also, as the REP pointed out, the CO₂ emission per capita (6.15 t/cap/year) is significantly higher than the country average (5,52 t/cap/year). Therefore even to reach the reduction trend of the EU-level BAU scenario, huge efforts are needed from local stakeholders. Fortunately REP showed that the unused renewable energy potential is significant in the region, and also the higher CO₂ emission per capita can be reduced with the enhancement of the ongoing energy efficiency measures.

Addressed barriers

The energy transition cannot happen overnight, and to reach the energy vision, ideal supportive and consistent circumstances are needed on the long term. To create this supportive environment, the first step is to identify what are the factors which endanger the energy vision. The most significant local level barrier raised by most local stakeholders was the **economic backwardness and its consequences: lack of public awareness, bad energy consumption behaviours and the lack of professionals**. The most frequently mentioned barrier on the national level was the **government's excessive commitment to the traditional centralized energy system** and its consequences: insufficient financial support scheme for the renewable energy, corruption and the insufficient regulatory environment. Interestingly, the high price of the renewable energy technology was only mentioned by one stakeholder.

Required data for scenario development

Renewable energy technologies and the other elements of the future smart grid (smart meters, energy storage, etc.) are among the fastest growing technologies. The steep learning curves of these technologies support the reach of the energy vision. However, because of the fast development, it is extremely difficult to make an educated assumption regarding the learning curve of these technologies.

Support scheme could provide stable support environment, however, it is only true in a limited extent in Hungary¹.

Involvement of stakeholders

The involvement of the stakeholders into the development of the energy vision was ensured in two ways. In one hand, meetings were held with municipalities where the main objective was the outreach to additional CEESEN members, and the energy vision perspectives were also discussed. On the other hand, questionnaire regarding the vision statement, the GHG reduction target, and the barriers were circulated among the current 62 Hungarian CEESEN members. This applied method could successfully replace the physical workshop which would have been difficult for the most active stakeholders to attend due to the relatively large geographical area and the difficulties with finding suitable time.

For more details please see the Annex.

Contact person: Adam Harmat, WWF Hungary, adam.harmat@wwf.hu



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¹For instance the Hungarian government, through the government decree No 81/2018 (IV.20) has unexpectedly terminates the feed in tariff for PV projects ranging from 50 to 500 kW.

REGIONAL VISIONS

Stakeholders involvement

Annex to D3.3 – Hungary



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

Introduction

As it was explained in the energy vision document, the stakeholder involvement to the energy vision development was ensured in two ways. In one hand, bilateral meetings were held with municipalities. On the other hand, questionnaire regarding the main elements of the visioning process was circulated among the current Hungarian CEESEN members.

The project region covers relatively big area (12 080 km²), and the existing members are from different places. During the preparation consultations, it revealed that existing CEESEN members would prefer to have online visioning process rather than physical meeting which require time-consuming and carbon intensive travels. Since the vision development is not as complex as other part of the energy roadmapping process and the background information can be shared effectively online as well, WWF Hungary decided to involve the existing stakeholders via online method.

Online survey

It was decided that the most efficient online method for the stakeholders to express their opinion would be an online survey. For this, the SurveyMonkey interface was used. The introduction part explained the vision methodology and summarized the energy profile of the region – and also included a link to the whole Regional Energy Profile. This helped the participants to gain a good overview regarding the visioning process. The following questions/tasks were asked:

- As for the vision statement, they were asked for phrase their own vision. As an alternative way, different adjectives were listed. The participants had the opportunity to prioritise them, and add/remove adjectives. This task could be used also to identify their ideal energy vision types.
- They were asked to define a target number regarding the 2050 GHG saving aim. For this question the current official EU and national GHG reduction target were presented, and also the regional target from the official climate strategy of the two counties, which was completed in spring 2018. In this way, the participants could compare their opinion to the official targets.
- They were also asked to identify barriers that can hinder to reach the vision and also knowledge gaps which can have impact on the vision.

Some participants who gave significantly different answer than the average were contacted via phone call, and were asked about their broader opinion, motivation. As a result, consensuses were reached in all cases.

The survey was circulated among all the 62 CEESEN members. Until the deadline, the following 13 participants filled the questionnaire:

- Municipalities: Kazincbarcika, Teresztenye, Parád
- Local Action Groups (Leader Organizations): MIKROVIRKA (Bükk-Leader Association); Borsod-Torna-Gömör Leader Association; Zemplén County Development Association; Tisza-Tarna- Rima-Mente Association
- Utilities: Miskolc Holding Zrt.
- NGOs: Environmental Planning and Education Network; Tree of Life Organization
- non-profit organization: Zemplén Regional Enterprise Agency

Bilateral meetings

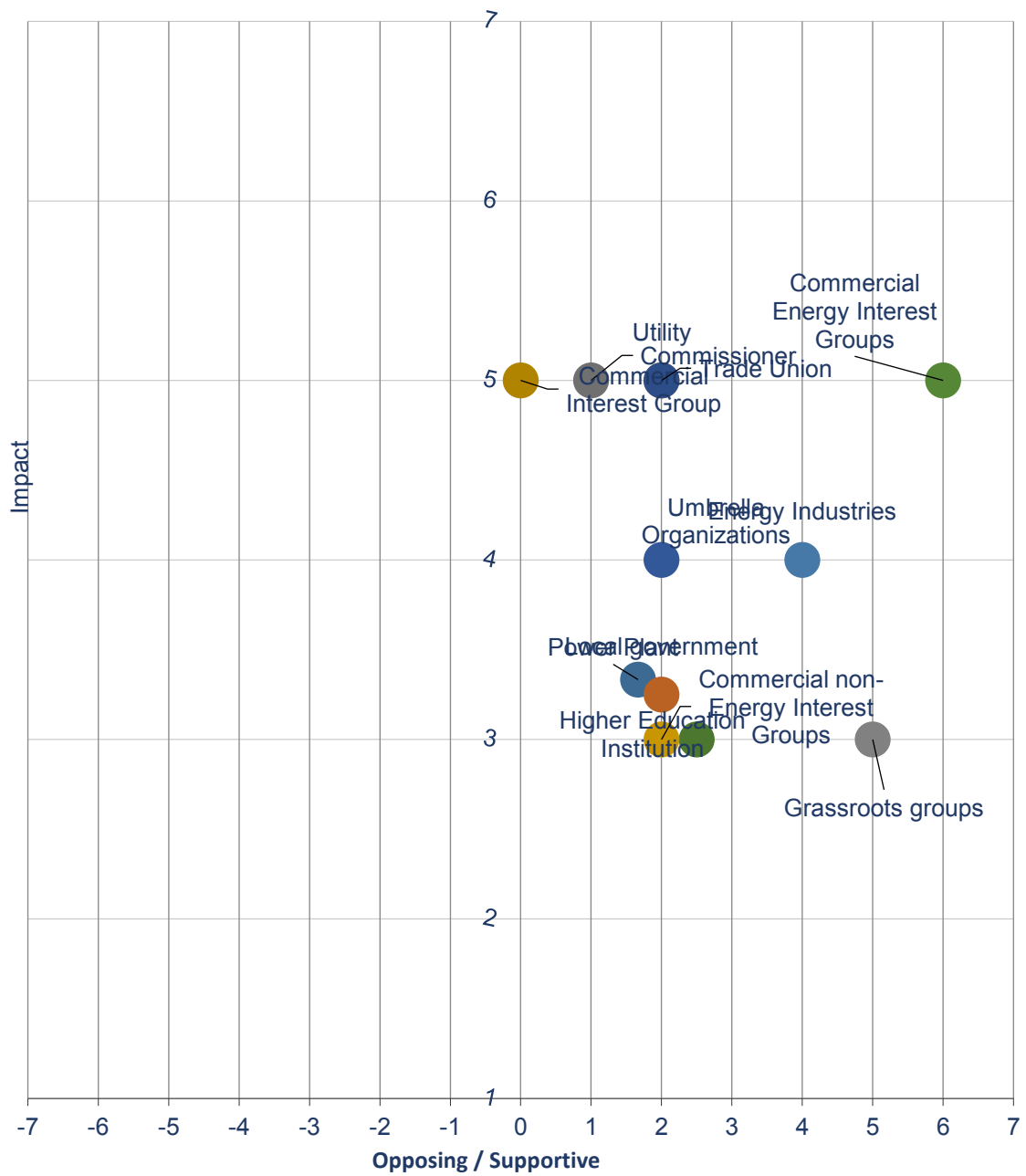
Since the outreach process of additional CEESEN members is still ongoing, we combined this process with the vision development. Bilateral meetings were organized with mayors of the following settlements: Arló, Mezőcsát, Mezőnyárád, Gelej, Hejőpapi, Tiszakeszi. In this meeting, apart from the presentation of the whole PANEL concept, they were also asked about the same topics as the participants in the online survey. Their inputs were also included to the regional vision.

Visioning in the roadmapping workshop

These two methods provided sufficient input for the visioning development, however, to ensure and deepen the involvement of stakeholders, the visioning process will be also a topic in the upcoming roadmapping workshop.

More details in log spreadsheet.

Stakeholders map



To be filled by WP leader

Attendance sheet(s) was/were collected	x
Excel list 'Stakeholder Engaged in PANEL 2050' was updated and sent to WP leader	x

ENERGY VISION

Region: Ignalina Nuclear Power Plant region
English version

**Prepared by
Ignalina Nuclear Power Plant Regional
Development Agency**

**PANEL 2050 – Partnership for New Energy Leadership 2050
Deliverable 3.3**

Date: 25.05.2018



**CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK**

Vision Statement

Ignalina NPP region is located in East Aukštaitija (Lithuania), in which energy-efficient innovative businesses, as well as sustainable tourism and organic farming are being developed.

The main challenges of the energy economy based on the National Energy Independence Strategy until 2050:

- In the total final energy consumption renewable energy resources shall increase up to 30 % till 2020, up to 40 % till 2030, and up to 80 % till 2050;
- By 2030 the primary and final energy intensity shall be 1.5 times lower than in 2017, and by 2050 shall be about 2.4 times lower than in 2017.

Consistently implemented in municipalities:

- The renovation of public and residential apartment buildings in order to reduce energy consumption;
- The automation of public lighting networks and the replacement of energy-saving light bulbs;
- Continuously modernizing and refurbishing the heat sector, switching to low temperature transmission into centralized heating systems;
- Consumers are encouraged to reduce waste consumption and use the established waste sorting system;
- Private operators are encouraged to reduce energy consumption by adopting environmentally friendly and energy efficient heating, electricity and hot water systems for residential and business buildings.

Vision Description

Ignalina NPP region is created by the initiative of three municipalities (Ignalina and Zarasai districts and Visaginas) and Resolution of the Government of the Republic of Lithuania on February 26, 2002, in order to mitigate the socio-economic consequences of the decommissioning of the Ignalina NPP.

This vision was created in accordance to THE NATIONAL ENERGY INDEPENDENCE STRATEGY, which was approved on June 26, 2012 by the Seimas of the Republic of Lithuania Resolution No. XI-2133 and updated on August 28, 2017 (registered draft amendment). The updated version forms energy goals and directions for their implementation by 2030 and provides energy development guidelines up to 2050. This document presents the main strategic directions of Lithuanian energy policy which are energy security, competitiveness, development of green energy and innovations.

The vision of the Lithuanian energy sector is smart energy, which creates added value for the state and the consumer and provides reliable environment-friendly energy at competitive prices.

State territory under the administrative structure is divided into 10 districts, consisting of 60 municipalities. The municipalities of Ignalina NPP region - Ignalina and Zarasai districts and Visaginas - are a part of the Utena region. Other district municipalities included in the Utena region are: Anykščiai, Molėtai, Utena and Zarasai.

The following strategic development documents are important for municipal activities:

- Strategic Development Plan of Utena region for 2014-2020 (in 2019 preparations will start for development plan of 2021-2028);
- Strategic Action Plan of the Ignalina District Municipality for 2018-2020;
- Strategic Development Plan of the Zarasai District Municipality for 2015-2021;
- Strategic Development Plan of the Visaginas Municipality for 2016-2022.

Measures, which must be included in regional and municipal planning documents:

1. Reorganization of centralised heating supply of Ignalina city by introducing measures allowing the transition to low-temperature supply in the heat network;
2. Development of solar collectors park and its compatibility with the heat supply in central boiler houses;

3. Development of smart residential lighting networks and energy saving systems.
4. Increasing the energy efficiency of public and apartment buildings;
5. The introduction of compensatory mechanisms to stimulate the development of renewable energy in the private sector (installation of heat pumps, solar, wind, waste recycling, etc. in individual or apartment buildings and business objects);
6. Development of electric vehicle charging network;
7. Provision of qualified consultations for private and public sector, as well as for all residents on renewable energy sources and resource saving;
8. Implementation of support measures for business (construction or installation of industrial buildings with communications).

Climate change

The areas covered by this vision and the insights on errors in the planning of existing periods lead to assumptions that the planning of both regional and local strategic documents and visions will focus more on climate change issues.

Involvement of Stakeholders

The process of creating the vision involved local government directors and specialists who work directly with the environment and the energy sector: ecologists, local economy and strategic planning specialists.

Preparation of this vision was done using the following methods: analysis of existing documents, interviews, telephone conversations, and group work.

The following institutions are also included in the process of developing the vision:

Public body *Euroregion "Country of Lakes" directorate office in Lithuania*;
Budgetary institution *Visaginas Municipality Administration*;
Budgetary institution *Zarasai District Municipality Administration*;
Budgetary institution *Ignalina District Municipality Administration*;
State enterprise *Visaginas energy*;
Budgetary institution *Visaginas Technology and Business Vocational Education and Training Centre*;
Budgetary institution *Aukštaitija National Park and Labanoras Regional Park administration*;
Association of *Ilgiai community*;
Public body *Future Society Institute*.

Representatives of stakeholders' institutions participated in training activities of the following topics: "Fundraising: from idea to realization" (12.02.2018., 4 h), "Marketing: how to reach your target audience" (12.02.2018., 4 h), "Project preparation: how to prepare a project application" (12.01.2018., 4 h), "Stakeholder engagement: how to communicate with stakeholders" (12.01.2018., 4 h).

For more detail see Annex

Contact person: Inga Sidlauskiene, IAERPA, inga.sidlauskiene@ignalina.lt



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REGIONAL VISIONS

Stakeholders involvement

Annex to D3.3 – Lithuania



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

1. Introduction

This Annex aims at giving an overview of the stakeholder involvement during the process of developing a regional energy vision in Lithuania, Ignalina nuclear power plant region.

Stakeholder Engagement is an integral part of the PANEL Model. The model consists of interrelated components of capacity building, stakeholder engagement and activation, and long-term energy planning.

PANEL2050 model for Central and Eastern Europe Sustainable Energy Network CEESEN



PANEL Stakeholder Engagement is taking a strategic approach for engaging the community to the local energy management. During project implementation period, we have been in contact with more than 50 organization that we believe are most important and influential in the energy field in INPP region.

Stakeholders are invited to participate in the long-term energy planning, bringing their knowledge and validation into the process.

2. Stakeholders involvement in energy visioning

The Ignalina Nuclear Power plant region historically connected to Ignalina Nuclear power plant that is right now in decommissioning stage. For more than 20 years habitants of INPP region were getting very cheap energy and were not interested in low-carbon economy at all. Right now, as an INPP is not operating anymore, more and more companies, organizations and just people are looking for better energy solutions for their needs and are implementing different measures.

We identified the main actors in the energy field in INPP region:

1. public sector's companies, which provides electricity and heating to the region,
2. private sector's companies, which produce bio fuel and construction companies, which works with building renovation,
3. Block of flats' habitants' communities and its associations, which mostly focus on reducing energy costs in block of flats' buildings and administration of buildings.
4. Region village communities that is interested in innovation in energy field.
5. Youth NGO that is focused on promotion of green lifestyle.
6. National park and sport associations.

7. Schools, kindergardens, vocational training center that promote green lifestyle, energy saving concept via educational activities.
8. Municipalities administration that is responsible for energy policies in each municipality of the region.

During the project implementation we contacted more than 60 potential interested parties from the named groups to narrow the group of the stakeholder that can actively participate in roadmapping process. Most of the potentially interested parties were contacted by phone or email, with some of them we have been cooperating previously and had good personal contacts.

PANEL / CEESEN mission and activities were presented to each organization and common problems and approaches were identified. We decided to include all types of key actors as stakeholders and at least one from each group to be forerunner in PANEL activities. We believed that in this case we could reach broader audience and have better effect.

As planned in the project, in June 2017, we identified 8 stakeholders-forerunners:

1. Public company "Visagino energija" which is provides electricity and heating to Visaginas municipality and is implementing measure for reduction of gas usage in favour of biofuel recourses.
2. Aukštaitija National park that is already implemented a lot of projects in energy field and has a goal to use only green energy in park by the 2030.
3. Ilgių community (Ignalina village) is the first community in the region that built A++ building (youth center), now community planning to implement measures for more active usage of solar energy in their houses and community buildings, also they actively promote green energy concept among other communities.
4. Youth organization "Point" is NGO organizations that actively work in promotion of green lifestyle in Visaginas and all region.
5. Visaginas technology and business vocational education and training center (includes Energy sectorial center) is education institution that provide training programme in energy field and educate youth and adults about different type of energy recourses.
6. "Taikos 6 association" is block of flats building's inhabitant's association that is actively working with building renovation strategies and looking for a new solution in this field.
7. Public organization "Ateities visuomenės institutas" is Lithuanian organization that work with energy projects and promote new solution in energy fields.
8. Baltic environmental forum is non-governmental organization dedicated to protection of healthy and clean environment, resource and biodiversity conservation for future generations.

The group of the forerunners actively participated in preparation of Energy vision of INPP region, worked closely with PANEL project team.

The Energy vision of INPP region identified the most important aspects for energy transition:

1. Low potential of geothermal, waste, wind or hydro energy;
2. Favorable conditions for solar energy,
3. High potential of production of biomass,
4. Low thermal resistance of old buildings,
5. Limited financial resources for implementation of energy related projects,
6. Lack of long-term energy vision in the region and on national level.

All stakeholders agreed that the most important problem is the lack of funds for implementation of energy related projects, so the attraction of the funds was named as a main topic for regional trainings that took place in the beginning of 2018 in Ignalina.

After Energy vision of INPP region was presented to stakeholders, we decided that the roadmapping process will be more effective if we attract region municipality administration as

the forerunners. So in October, 2017 8 forerunners' representatives attended CESEEN Conference in Prague where they had an excellent opportunity to meet other stakeholders and do networking.

After the conference, the initial plan for road mapping and regional action plan development were discussed with forerunners.

As a result of several individual meetings, consultations and along with the knowledge gained from Boot Camp that took place in April, 2018 where two involved forerunners participated (Ms. V. Abaravičienė from "Visaginas energija" and Ms. Jūratė Tamonienė from „Ilgiai community") the INPP regional vision was defined in May 2018.

3. Regional stakeholder and forerunners network

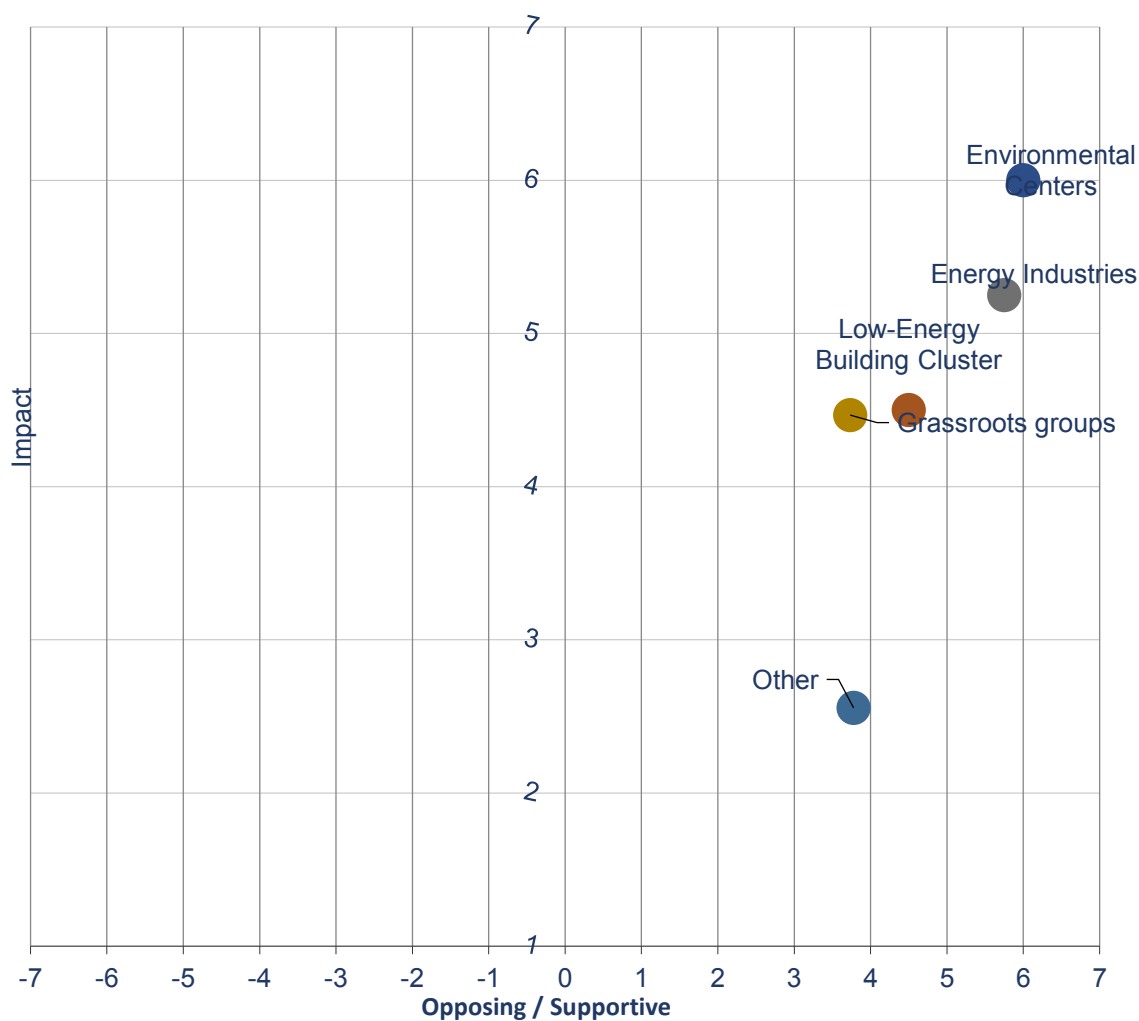
The list of project Lithuanian stakeholders could be found as an annex. The stakeholder are being informed about PANEL activities via email, facebook account and CESEEN platform news.

The list of forerunners:

1. Public body Euroregion "Country of Lakes" directorate office in Lithuania;
2. Budgetary institution Visaginas Municipality Administration;
3. Budgetary institution Zarasai District Municipality Administration;
4. Budgetary institution Ignalina District Municipality Administration;
5. State enterprise Visaginas energy;
6. Budgetary institution Visaginas Technology and Business Vocational Education and Training Centre;
7. Budgetary institution Aukštaitija National Park and Labanoras Regional Park administration;
8. Association of Ilgiai community;
9. Public body Future Society Institute.

For more details see Excel list "SH_engagement_overview_LT".

4. Stakeholder Map



To be filled by WP leader	
Attendance sheet(s) was/were collected	x
Excel list 'Stakeholder Engaged in PANEL 2050' was updated and sent to WP leader	x



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ENERGY VISION

Region: Vidzemes planning Region
English version

prepared by
Vidzeme Planning Region

PANEL 2050 – Partnership for New Energy Leadership 2050
Deliverable 3.3

Date: 18/05/2018



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

Vision Statement

In 2050, Vidzeme planning Region is the region of smart solutions and climate aware population. Based on ICT and smart technologies & networks the Region effectively utilizes all kinds of available renewable energy resources (RES) and widely implement energy efficiency (EE) measures. The economy of the region is based on circular economy principles and ensures competitive development and increased well-being alongside with minimal CO₂ emissions. The region in 2050 emit around 70% less CO₂ than in 2015, the emissions reduction is reached in all sectors of region economy. Regional and local governments implement highly competent governance aimed at sustainable use of natural capital and responding/adapting to climate change.

Vision Description

In 2015, the main energy end-use sectors of Vidzeme planning region were households (29%) and transport (26%) followed by industry (18%), services (16%), agriculture (11%). For heat supply, district heating (DH) systems are widely used. In 2015 ~56% of supplied heat had been produced by utilizing local biomass (wood) fuel. In its turn, the RES utilizing power plants, placed in the region, supplied only ~23% of electricity consumed in the region. The largest share (45%) of region's total CO₂ emissions had been created due to road transport; the rest of them divided roughly proportionally among other sectors (services, industry and agriculture).

Based on macro-economic development indices of the region, in the BAU scenario in 2050 the implemented EE and RES measures will result in CO₂ emissions decrease per about 30% compared to 2015. Thus, to meet Vision's GHG emissions reduction target in 2050 (i) energy consumption shall be reduced by 25% compared to BAU scenario, (ii) heat and power production shall be almost entirely based on RES utilization. The priority areas, in which the planning region and local governments can provide high impact, is energy efficiency in both public and residential buildings, and bioenergy production from available in the region biomass resources. On top of it, to provide the adequate governance in these areas and promote stakeholders' co-operation, establishment at regional level comprehensive and qualitative energy information system and cross-sectorial cooperation networks devoted to noted energy issues are necessary.

The key features of the Vidzeme planning region in 2050 in these areas are: (i) considerable amount of new nearly zero energy buildings is on place, the dominating part of existing buildings are renovated to increase their energy efficiency, (ii) efficient DH supply in combination with effective decentralized technologies is used for urban heating systems, including the integrated feedback which enables consumers' flexible energy consumption and production; (iii) the demand-driven energy management systems are implemented in both public and residential buildings; smart, real time monitoring tools promote energy efficient life-style and supportive flexible infrastructure regarding energy consumption and decentralized production, (iv) public buildings serve as an guiding example, (v) well-considered spatial planning and by-laws on building promotes energy efficiency raising and local/regional RES utilisation.

Addressed barriers and challenges

The principal need to reach the vision is the establishment of supportive and consistent overall framework. To reach it, the barriers and challenges of different type - policy/planning, legislative, institutional, infrastructural, socio-economical, communicative ones - are addressed in the roadmap.

Contribution to national and regional energy sector targets

National targets in energy sector (energy efficiency and RES targets) are approved for 2020 only. National Energy Policy Strategy 2014-2020 states to reach 40% RES share in gross Final energy consumption in 2020. Related to 2030, "Latvia 2030 Sustainable Development Strategy", adopted June 2010, states to reach RES share at least 50% indicatively.

National 2050 targets at the present are not yet adopted. At the same time, it can be said with certainty that national 2050 targets to be adopted in the future, will ensure required Latvia contribution for meeting EU-wide 2050 GHG emissions reduction target.

Regional targets. The developed energy scenario for Vidzeme planning region takes into account the regional targets and development directions, adopted by "Vidzeme planning region Sustainable Development Strategy – 2030" and tasks stated by "Vidzeme planning region Development Programme 2015-2020" and contributes in meeting of them.

Contribution to climate change mitigation

Latvia's participation in global climate policy efforts and actions is key priority of national climate policy. Latvia's national position clearly supports the EU strategic goals related to long-term, 2050, GHG emission reduction by at least 80% compared to 1990.

Involvement of Stakeholders

The involvement of stakeholders was done by such methods as meeting, interview and survey questionnaire for inhabitants. The main stakeholders involved in the visioning and public discussion were: representatives of local municipalities, inhabitants of the region, business sector, representatives of district heating utilities as well as other parties interested in the development of the region.

Meetings, devoted to vision development, had been participated mainly by representatives of municipalities and experts. The focus of the meetings were presentation of the developed alternative scenarios of region energy sector development and discussion on the challenges brought by the vision and principal pathway to meet the vision. In its turn, by interview and questionnaire the attitude of different stakeholders regarding the defined vision statement, GHG emissions reduction target, implementation of RES and energy efficiency measures as well as how to actively involve the stakeholders in this process had been identified. These applied methods successfully replaced the face-to-face workshop for the stakeholders, which are not represented by non-governmental organisations or other institutions and for which it had been difficult attend the meetings due to the relatively large geographical area of the region.

The following entities participated in the process of creating the vision: **Alūksne Municipality**, Amata Municipality, **Ape Municipality**, Beverīna Municipality, Burtnieki Municipality, Cēsis Municipality, **Cesvaine Municipality**, Ērgļi Municipality, **Gulbene Municipality**, **Jaunpiebalga Municipality**, Kocēni Municipality, Līgatne Municipality, **Lubāna Municipality**, Madona Municipality, Mazsalaca Municipality, Naukšēni Municipality, **Pārgauja Municipality**, **Priekule Municipality**, **Rauna Municipality**, Rūjiena Municipality, **Smiltene Municipality**, Strenči Municipality, Valka Municipality, Valmiera, Varakļāni Municipality, Vecpiebalga Municipality, **Vidzeme Hospital**.

See Annex for more details.

Contact person: Aija Rūse, Vidzeme Planning Region, aija.ruse@vidzeme.lv



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REGIONAL VISIONS

Stakeholders involvement

Annex to D3.3 – Vidzeme Planning Region, Latvia



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

1. Stakeholders involvement in energy visioning

Since the beginning of the project we have been developing stakeholders network following the effort of establishment potential core group that would be involved more intensively in regional roadmapping process.

PANEL2050 model for Central and Eastern Europe Sustainable Energy Network CEESEN



In course of the project we share our invitation to be the part of the Energy Transition process in Vidzeme Planning Region and finally reach almost 30 important and influential stakeholders in municipalities, schools, hospitals, government, non-government institutions. We have been cooperating with some of them before (especially municipalities), some of them were introduced to us via existing relations and finally some of them were newly established contacts.

When relevant stakeholders from different sectors of society were identified in the first part of the project we worked on development of right tactics how to reach right person with right message. Although our organisation has large experience on engagement of stakeholders this was the first attempt to develop sustainable network for energy transition. After development of internal strategy for reaching out to stakeholders we established good personal communication with identified stakeholders and started networking as soon as possible.

The first phase contained development the local sustainable energy network from the regional stakeholders – mostly municipalities, who have sustainable energy issues on their agenda. For establishment of the project working group on the region level on 3rd of October 2016 the first stakeholder meeting was held in Gulbene district council. Project manager Aija Rūse presented project idea and representative of the Project Advisory board Mr. Jurijs Spiridonovs explained the energy visioning process on EU, country and regional level. After the meeting press release was published. After this some new stakeholders expressed their interest into participation in the PANEL2050.

Throughout all the project the main stakeholders and forerunners are municipalities. For the “Regional Energy Group” VPR asked to nominate energy managers. “Regional Energy Group” has been established containing the representatives of municipalities in Vidzeme region. All the municipalities are coming from the Vidzeme region. The idea behind this action was to establish local networks of forerunners and to keep stakeholders engaged in the process. We sent out invitations and invited them to support the development of the energy policy in Vidzeme region. “Regional Energy Group” as an informal network is open for external potential stakeholders. Mostly those were members of “Regional Energy Group” who participated in regional trainings, Prague stakeholders conference, development of the energy action plans.

Forerunners were selected after all municipalities have been met during meetings with officials, roundtables and talks. They took part in working groups for development of Roadmap and Vision.

Once the project team from several municipalities and Vidzeme Hospital has been set up and there have already been several training sessions, together with PANEL2050 participants we had experience exchange trip to Jelgava and Liepāja. During this study trip they met director of Zemgale Regional Energy Agency, who presented the association's efforts to increase energy efficiency in their region. In Liepāja they get acquainted with the experience of Liepāja city municipality in implementing the energy management system ISO 50001. These stakeholders are outside the Vidzeme Planning Region territory, so it was a good way to engage and start a successful co-operation with other cities and regions in Latvia.

Various methods had been used for dissemination of our message, via print/electronic media. Since most municipalities do not have a specific person whose responsibilities include energy efficiency issues, the so-called Energy manager, in the beginning of the project we interviewed Smiltene municipality Energy Manager. This interview was a good start to emphasize the need for such a specialist in each municipality. Besides this with the aim to show that ordinary average individuals might be part of discussion about energy efficiency, we interviewed one household representative, mother of two children, whose family daily analyses their electricity consumption in their home.

Press releases have been issued to point out the working group meetings while making first emphasis on the main targets of PANEL2050 and highlighting some basic problems in local region towards energy efficient actions in public sector. The second press release dedicated for the PANEL2050 was following in a week time to reflect main issues discussed in the stakeholders meeting saying action plans should be intensively used not put in the shelves. The message paid a great attention in mass media, including national level, it was published in several national internet websites and feedback was received willing to join the project from several governmental institutions and organizations. It also let picking up the discussion between stakeholders themselves as it was a bit provocative way to heat up the local society. After the press release Ventspils Municipality expressed their interest to PANEL2050. They are located in the region which is not set for this project. However, they were interested in results and idea of the project and we keep the promise to inform them about project outputs.

To raise interest of wider audience about energy efficiency, before the Earth Hour 2018 we invited through our Facebook and Twitter accounts our followers to share ideas what to do during the Earth Hour. For example, eat dinner in candlelight or take a dog for a walk. With this post, we invited wider public to turn off the light. The Facebook statistic shows that with this post we reached 2460 people.

Furthermore, during the EU Sustainable Energy Week 2017, we organized a Facebook quiz where our Facebook followers had to answer correctly on issues related to energy efficiency. But in the EU Sustainable Energy Days 2018, Vidzeme Planning Region invited the public in Facebook questionnaire to express their opinion about sustainable energy development in Vidzeme. Those ideas were considered in development of Energy Vision and Roadmap.

To acquire more voices in development of locally adopted energy policy we also participated in Vidzeme Business Days 2018 and interviewed entrepreneurs on their energy efficiency measures at their production facilities.

In addition, during the project, the Vidzeme Planning Region as an institution created International Newsletter (http://jauna.vidzeme.lv/upload/en/VPR_newsletter_6_2017.pdf), a flyer with all of our energy efficiency projects, as well as prepared an publication on Energy Management in Vidzeme, including also interesting information about PANEL2050 activities

and the achievements of our stakeholders. Both materials will be distributed to all main players in energy transition in Latvia started from September 2018. And finally, thanks to the PANEL 2050 project, we have created an initiative called “Energy



Management in Vidzeme”. To make this initiative recognizable the new brand for this initiative have been developed recently.

2. Regional stakeholders and forerunners network

Name	Type
Ministry of Economics	Government
Ekodoma Ltd.	SME
Valka county	Municipality
Baltic Environmental Forum	Non-profit sector
Riga Technical University	University
Lubana county	Municipality
Vidzemes Hospital Ltd.	Regional Hospital
Burtnieki county	Municipality
Alūksne county	Municipality
Valmiera city	Municipality
Gulbene county	Municipality
Beverīna county	Municipality
Cēsis county	Municipality
Jaunpiebalga county	Municipality
Kocēnu Communal services	Municipal Enterprise
Kocēni county	Municipality
Pārgauja county	Municipality
Ape county	Municipality
Rūjiena county	Municipality
Rauna county	Municipality
Amata county	Municipality
AS Simone (district heating)	Municipal Enterprise
Alūksne county	Municipality
Cesvaine county	Municipality
Strenči county	Municipality
Zemgale Energy Agency	Non-profit sector
Liepāja county	Municipality
Cēsu Pastariņa sākumskola	Primary School

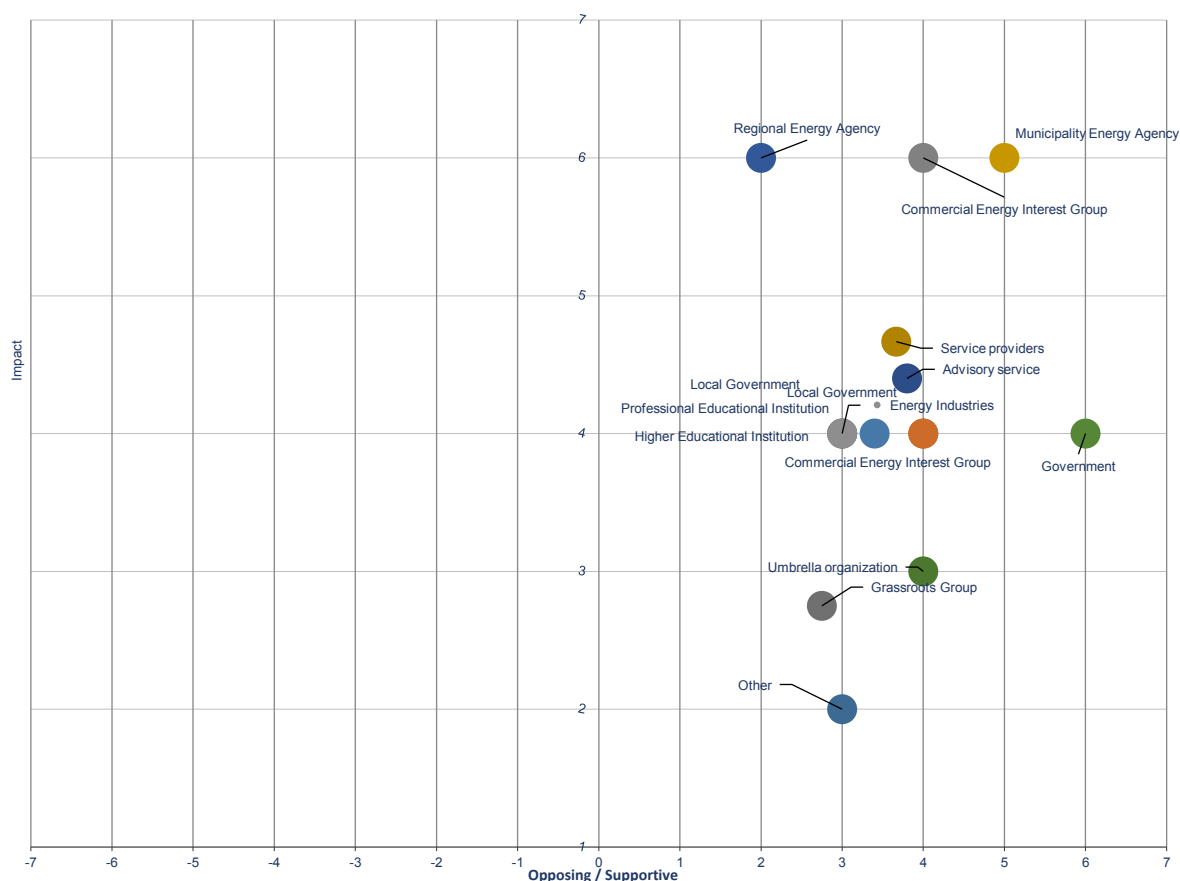
Lizuma vidusskola	Secondary School
Smiltene county	Municipality

3. Overview of related communication / events

Date, place	Participants	Content / Results / conclusions
02.10. 2016, Gulbene	<ul style="list-style-type: none"> - Municipalities of Vidzeme Planning Region - <i>Representative of Advisory Board, Mr. Jurijs Spiridonovs,</i> 	<p>The main goal of this event was introduction of the PANEL2050 activities and to discuss ongoing initiatives focused on energy transition and self-sufficiency.</p> <p>Main results:</p> <ul style="list-style-type: none"> - received from stakeholders about existing situation and trainings needed - introduction of CEESEN - decision to develop Regional Energy Group
10.01.2017, Smiltene	<ul style="list-style-type: none"> - Smiltene Municipality Energy Manager Andris Jaunpetrovičs 	<p>The main task was to have an interview with Energy Manager and through this interview tell others, what are the main duties of the Energy Manager and why such a specialist is needed in the municipality.</p>
03.04.2017.	<ul style="list-style-type: none"> - Ministry of Economics: Ieva Kārklīņa, Inguna Ozoliņa 	<p>The meeting with organisers of communication campaign "Lets Live Warmer!". The main goal of the meeting was to introduce MoE with PANEL2050 and to ask for the support of project idea.</p> <p>Main result: It was agreed during the meeting that representative from MoE will participate in the upcoming stakeholder meeting in Smiltene municipality 20 April 2017.</p>
22.06.2017.- 04.07.2017.	<ul style="list-style-type: none"> - Facebook quiz 	<p>The main goal was to address the public and let them think about how much they know about renewable energy sources, energy-efficient technologies (lighting, solar panels etc.) and what public know about the ways how to reduce energy consumption.</p>
29.06.2017.	<ul style="list-style-type: none"> - Liepāja Municipality 	<p>The experience exchange with Liepāja city in implementing the energy management system ISO 50001</p>
30.06.2017.	<ul style="list-style-type: none"> - Zemgale Regional Energy Agency 	<p>Experience exchange how to increase awareness about energy efficiency in the region.</p>
18.01.2018.	<ul style="list-style-type: none"> - Linda Fibiga 	<p>An interview with a simple citizen, a mother of two children, made it possible to understand what simple family understands with the word energy efficiency. As it turned out, this family was even very knowledgeable about the energy consumption of their home.</p>
9.03.2018.	<ul style="list-style-type: none"> - Ministry of Economics (Kristaps Zvaigznītis, Līva Immermane) 	<p>First introduction of CEESEN and goals, discussion about further cooperation on sustainable energy activities.</p>
22.03.2018.	<ul style="list-style-type: none"> - Followers of Vidzeme Planning Region Facebook and Twitter accounts 	<p>The main goal was to invite the citizens and our Facebook and Twitter followers together with us join the Earth Hour 2018. The Facebook statistic shows that with this post we reached 2460 people.</p>
25.04.2018.	<ul style="list-style-type: none"> - Forerunners of municipalities 	<p>Drafting of the regional vision for 2050</p>
18.05.2018, Valmiera	<ul style="list-style-type: none"> - Entrepreneurs of Vidzeme region 	<p>The main goal was to interview entrepreneurs of Vidzeme region to get more information about their needs and obstacles to implement more energy efficiency measures in their production facilities.</p>
14.06.2018, Valmiera	<ul style="list-style-type: none"> - Municipalities of Vidzeme Planning Region 	<p>Presentation of Sustainable Energy Development Strategy in Europe and in Vidzeme Planning Region, Discussion on developed Action plans.</p>

25.06.2018.	– Followers of Vidzeme Planning Region Facebook account	The main goal of this survey was to find out what needs to be done in the near future and in the long term in order to ensure sustainable energy development in the region. We received 10 completed questionnaires with deep insight, what priorities are currently most significant in Vidzeme region.
10.09.2018.	– Municipalities of Vidzeme Planning Region	Discussion on roadmapping process and next steps in energy transition and stakeholder engagement.

4. Stakeholder Map



To be filled by WP leader

Attendance sheet(s) was/were collected	X
Excel list 'Stakeholder Engaged in PANEL 2050' was updated and sent to WP leader	X

ENERGY VISION

Region: North East Planning Region (Republic
of Macedonia) English version

Prepared by
Balkan Development Solutions Ltd

PANEL 2050 – Partnership for New Energy Leadership 2050
Deliverable 3.3

Date: 14.06.2018



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

Vision Statement

In the 2050 the NorthEast Planning Region is recognised as a Green Region, with energy-efficient innovative businesses and households, and developed sustainable tourism and organic farming.

The main challenges of the energy economy of the Region **until 2050**:

- In the total final energy consumption renewable energy resources shall increase up to 20 % till 2030, up to 30 % till 2040, and up to 40 % **till 2050**;
- **By 2050** to decrease greenhouses gases emission by 30% in comparison with 2016.

Consistently to be implemented in the municipalities:

- The renovation of public and residential apartment buildings in order to reduce energy consumption;
- The automation of public lighting networks and the replacement of energy-saving light bulbs;
- Private operators are encouraged to reduce energy consumption by adopting environmentally friendly and energy efficient heating, electricity and hot water systems for residential and business buildings.
- Continuously modernizing and refurbishing the heat sector;
- The policy makers are encouraged to establish regional integrated waste management system and the consumers are encouraged to reduce waste production;

Vision Description

The most important problems the energy sector faces in Macedonia are an unfavourable energy mix with a high prevalence of lignite, a strong dependence on energy import, poor condition of the energy system and inefficiency in energy production and use.

Currently on the National level, the Energy Development Strategy until 2030, the Strategy for utilization of RES until 2020 and the Energy Efficiency Strategy until 2020 have been adopted.

Greater utilization of renewable energy sources (RES) is one of the major strategic objectives in the energy sector for the Government of Macedonia. The national energy development strategy has the primary goal to enable energy independence, reduce conventional fossil fuel utilisation and sustainable energy development.

The Northeast Planning Region (NEPR) consists of the municipalities in the far Northeastern part of the Republic of Macedonia and spreads along the rivers Pchinja and Kriva Reka and the borders with Kosovo, Serbia and Bulgaria. This planning region consists of 6 municipalities: Kratovo, Kriva Palanka, Kumanovo, Lipkovo, Rankovce and Staro Nagorichane with 192 settlements (189 are rural). In summary, the Northeast region is:

- A mainly rural area in South Eastern Europe with 180,000 inhabitants
- Economically the most underdeveloped planning region in the country. Its share in the national GDP is only 5.5%.
- The Region where most of the local businesses (91%) are practically micro enterprises with a low accumulation of power and the main purpose to ensure the economic existence of its founders and employees. The whole region has only 86 larger enterprises.
- The region with almost no own electricity production capacity installed.

The current strategic planning document for the region is the Programme for Development of the Northeast Planning Region 2015-2020. It is likely that in 2019 a development plan for 2021-2026 will be started.

The energy sector, both in the vision and in the development plan, is mentioned very narrowly, mainly in the priority for development of the competitive agriculture related to potentials for using alternative energy sources.

Addressed barriers

Taking reviewed the strategic plans of the state, the region and individual municipalities, the following limitations, which do not stimulate the development of a sustainable energy sector and do not create conditions for a significant breakthrough in the energy sector in the Northeast Planning Region, are:

The low level of the Awareness:

- Limited institutional knowledge in the region for facilitating and implementing a transition to a low carbon economy;
- Low utilisation of the RES. Residents are not encouraged to produce local energy;
- There are no planned measures for the education and habits of the population to promote consumption reduction, waste sorting and energy saving;

Limited knowledge for Business Models:

- Availability of relevant energy data;
- Limited number of good practices
- There are no concrete financial resources planned for most of the measures.

Required data for scenario development

In order to develop 2050 energy roadmap, as well as priorities and concrete measures for the Action plans, the following types of data will be required:

- **R&D** – relevant energy data and analysis and coordination of R&D environment, capacities and application, market research
- **Overview of available technologies** – e.g. decentralized energy systems, energy storage systems, waste and water management, intelligent building management, measurement and regulation, etc.
- **Financing & Business models** – financing, communal and shared economy approaches

The main sources of data for the indicators are the data from the National Statistical Office and secondary data from municipalities and communal public enterprises.

Involvement of Stakeholders

The process of creating the vision involved Centre for Regional development of the Northeast Planning Region, Regional council, Local government representatives from the 6 municipalities, NGOs, and specialists who work directly with the environment and the energy sector: ecologists, local economy and strategic planning specialists.

Preparation of this vision was done using the following methods: analysis of existing documents, interviews, telephone and e-mail conversations, and group work (see the Annex).

Contact person: Jane Vrteski, Balkan Development Solutions, jane.vrteski@bds.com.mk



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 696173. Disclaimer: The sole responsibility for the content of this material lies with the authors. It does not necessarily represent the views of the European Union, and neither EASME nor the European Commission are responsible for any use of this material.

REGIONAL VISIONS

Stakeholders involvement

Annex to D3.3 – Republic of Macedonia



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

1. Stakeholders involvement in energy visioning

BDS, since the beginning of the project, started with development of the stakeholders network, at the beginning in the North East Planning Region (NEPR) and later on Nationally. The main effort was the establishment of the core group that would be involved more intensively in regional roadmapping process through the PANEL 2050 (see the Figure 1 below).

PANEL2050 model for Central and Eastern Europe Sustainable Energy Network CEESEN



Based on our previous knowledge we got in touch with about 20 potential stakeholders, which we found the most important and influential in the NEPR. We have been cooperating with some of them before (especially closely with the Centre for development of NEPR (CD of NEPR), municipalities, business associations and NGOs), some of them were introduced to us via existing relations (individuals) and finally some of them were newly established contacts (especially those active in businesses and education).

During September of 2017 we had several meetings with the CD of NEPR in Kumanovo, to identify and mobilize the stakeholders for the Regional Energy Visioning process.

In October 2017 we have conducted the workshop in Kumanovo at the Municipal City Council Hall with the goal to mobilize stakeholders, to motivate them to engage in the project through training, active participation and networking (Figure 2)

The main goals of this event were: to map stakeholders; to introduce Stakeholder analysis; to identify Forerunners; to discuss the need of the developing strategies for securing and maintaining the interest and motivation of stakeholders in a sustainable manner; to introduce the process of mapping of the directions of the energy transition; and to introduce the CESEEN-Central and Eastern Europe Sustainable Energy Network.

We participated along with selected representatives from the identified forerunners (at CEE Energy Transition conference in Prague (19–20.10.2017) and thanks to intensive communication with the speakers and participants, the stakeholders had an opportunity to extend their knowledge for the energy transition, including visioning process.

As a result of several meetings and along with the knowledge gained from Boot Camp in Budapest, 22-28 April, 2018, where two involved forerunners Blagica Gavrilovska Cvetkovikj (Company "ADUT GVN") and Boban Bojkovski (Chief of Environment Department/Unit, Municipality of Kumanovo) participated in June 2018, on the training for Process of

development of Regional Energy Map 2050 and Policy Analysis on 13th of June, 2018 in the Meeting Room of the Council, Kumanovo (Center of NorthEast Planning region). The training was led by Andreas Karner, CONPLUSULTRA, Austria, during which the Energy Vision 2050 of the NorthEast Planning Region was defined.

2. Regional stakeholders and forerunners network

Name	Operation	Type
Centar for development of NEPR	Regional	Public body
Municipality of Kumanovo	Local/Regional	Public body
Municipality of Kratovo	National	Public body
Municipality of Rankovce	National	Public body
Municipality of Lipkovo	National	Public body
Municipality of Staro Nagoricane	National	Public body
Municipality of Kriva Palanka	National	Public body
Foundation for development of small and medium enterprises	Regional	Foundation
Council of the Municipality of Kumanovo	Local	Public Body
Ministry of Local Self-government	National	Public Body
ADUT GVN	National	SME
Association of agricultural producers - Kumanovo	Regional	Association
DPTU MKM Dooel Association of farmers "Agrokultura" - Lipkovo	Local	SME
Individual Craftsmen "DAKO-CO"	Local	Entrepreneur
MIA	Local	Media
"ENERGO-CENTAR"	Regional	SME
Civil organization "ELIPSA"	Local	NGO
ORHIDEA	Local	NGO
Association "INCLUZIVA" -Kumanovo	Local	NGO
LAG ABER 2015	Regional	NGO
Public Enterprise "VODOVOD"	Local	Communal Enterprise
NGO "PERCIPIO"	Local	NGO
NGO "Krstev Misirkov" - Kumanovo	Local	NGO
Centar for intercultural dialogue	Regional	NGO
Council of the Municipality of Kumanovo	Local	Public Body
Ministry of Local Self-government	National	Public Body

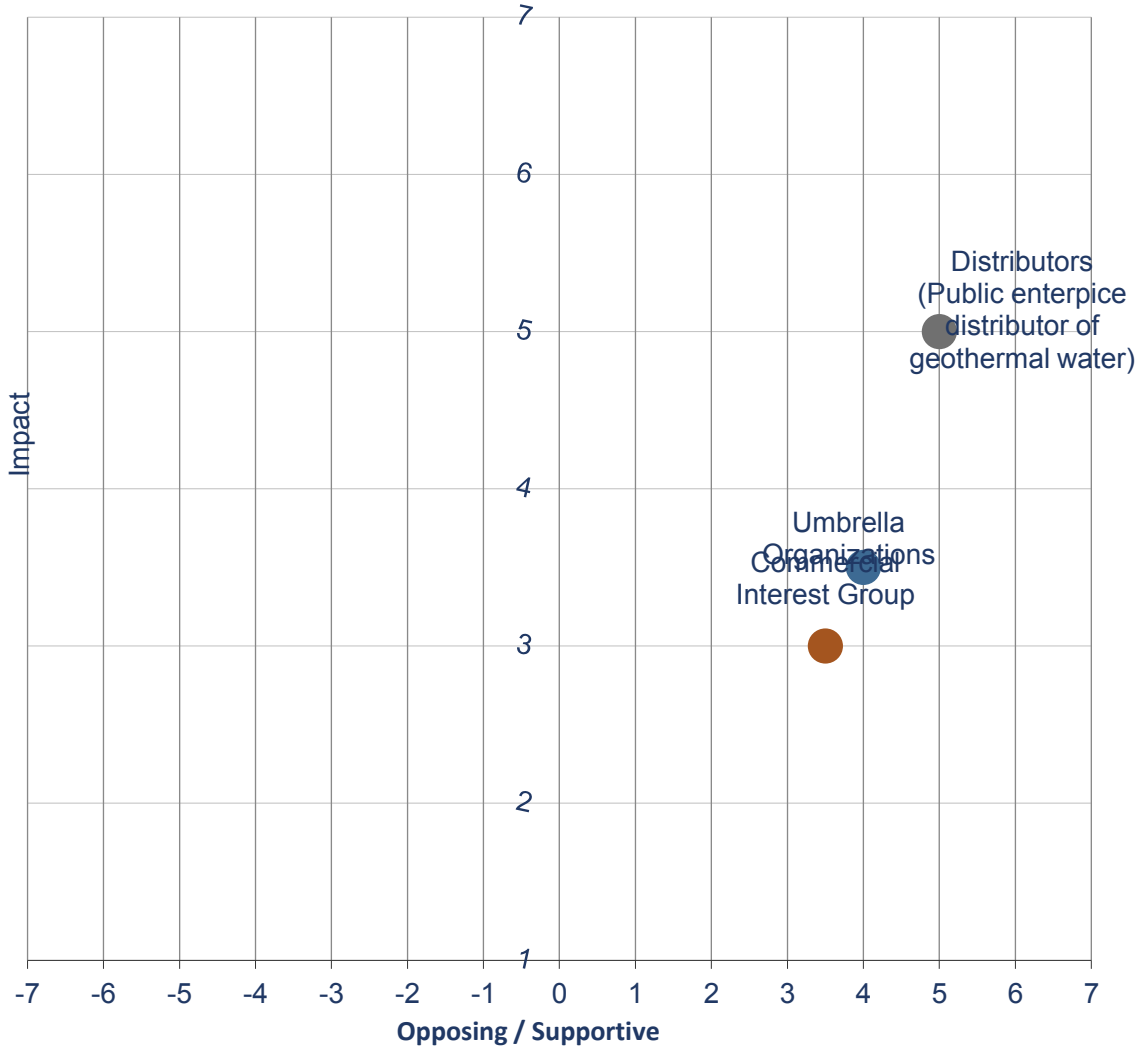
3. Overview of related communication / events

Date, place	Participants	Content / Results / conclusions
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06.10.2017, Kumanovo	<ul style="list-style-type: none"> - Mladen Protic - Centar for development of NEPR - Boban Bojkovski – Municipality of Kumanovo - Cane Ancov, Municipality of Kratovo - Mome Krstevski, Municipality of Rankovce - Dragan Cvetkovik, ADUT GVN - Nenad Jakimovski - Municipality of Nagoricane - Dragan Jovanovski - Foundation for development of small and medium enterprises - Mome Davidovski - Association of agricultural producers - Kumanovo 	<p>The main goal of this event was to discuss the Stakeholder identification, engagement and motivation and to provide introduction for the energy transition process and CEESEN</p> <p>Main results:</p> <ul style="list-style-type: none"> - Identified forerunners - received feedback from participants on potential approach towards regional visioning process - introduction of CEESEN
19 – 20.10. 2017, Prague	<ul style="list-style-type: none"> - Milovan Stojkovski – Municipality Staro Nagoricane /Mayor/ - Momchilo Aleksovski - Municipality Rankovce /Mayor/ - Gjorgji Petrushevski - Center of North East Planning Region /Coordinator/ - Seljmani Muamet - Center of North East Planning Region /Coordinator/ - Gazmend Saiti – Municipality of Lipkovo /Counselor/ - Cane Anchov - Municipality of Kratovo /Chief of Urban Department/Unit/ - Boban Bojkovski - Municipality of Kumanovo /Chief of Environment Department/Unit/ 	<p>CEE Energy Transition conference</p> <p>Main results: Participants gained insight into the many processes that are needed to push for sustainable communities, such as Sustainable Energy Planning and designing roadmaps. They also learned about effective approaches towards Stakeholder Engagement, obtaining funding and building public support towards renewables which are key parts to effective Energy Advocacy efforts.</p>
20.12.2017, Kumanovo	<ul style="list-style-type: none"> - Mladen Protic - Centar for development of NEPR - Oliver Stojanovski – Municipality of Kriva Palanka - Slavica Stefanovska - Municipality of Rankovce - Feim Selmani – Municipality of Lipkovo - Dimitar Tasevski - Foundation for development of small and medium enterprises 	<p>The main goal of this event was introducing the stages of the Energy Roadmapping process.</p> <p>Main results:</p> <ul style="list-style-type: none"> - Development of the Draft Energy Vision of the region
23. - 27.4. 2018, Budapest	<ul style="list-style-type: none"> - Blagica Gavrilovska Cvetkovikj (Company "ADUT GVN") - Boban Bojkovski (Chief of Environment Department/Unit, Municipality of Kumanovo) - Armine Vrteska (Communication and Visibility Person – PANEL 2050) 	<p>Capacity building and re-drafting the regional vision concept</p>
13.06.2018, Kumanovo	<ul style="list-style-type: none"> - Biljana Nikolovska – Municipality of Kumanovo - Oliver Nikoloski - Ministry of Local Self-government - Slavka Stefanovska Cvetkovska - Municipality of Staro Nagoricane - Vladimir Pavlovski - Council of the Municipality of Kumanovo - Blagica Gavrilovska-Cvetkocik - ADUT GVN 	<p>Finalization of the regional vision for 2050 and drafting next steps in roadmapping process</p>

	- Georgi Petrushevski - Centar for development of NEPR	
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4. Stakeholder Map



To be filled by WP leader	
Attendance sheet(s) was/were collected	x
Excel list 'Stakeholder Engaged in PANEL 2050' was updated and sent to WP leader	x



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ENERGY VISION

Region: Mazovian Voivodeship (Mazovia
Region)
English version

prepared by
Mazovia Energy Agency (MAE)

PANEL 2050 – Partnership for New Energy Leadership 2050
Deliverable 3.3

Date: 18.05.2018



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

Vision Statement

In 2050 Mazovia is the region of Poland with 50% reduction of the emission of energy economy (measured by CO₂ emissions) in comparison to 1990.

At the end of 2020, Mazovia - the largest region of Poland – is expected to reduce the emission in the energy sector by 20% compared to 1990. Despite the intensive actions undertaken in this direction, the targets set by 2020 are unlikely to be achieved. In order to achieve, in accordance with the EU policy in 2050, reduction of the emission of the Mazovian energy economy it is necessary to undertake multidirectional intensive actions consisting in:

- improving the efficiency of energy management - reducing the demand for energy;
- induct renewable energy sources into operations;
- generation of energy from low-emission fuels;
- defining the methodology of financing the projects.

Vision Description

Due to the large area, Mazovia has been divided into six subregions differing in population size, structure, land development and the level of economic development. For the presentation of the strategy undertaken and the packages of action programs resulting from it, Subregion Siedlecki was selected. The choice was made due to the fact that it is the 4th largest sub-region with characteristics and economic level slightly below the average of Mazovia. It is assumed that the strategy and program developed for Siedlecki will also correspond to the developed programs for other subregions except the Warsaw Subregion. In addition, the Siedlecki Subregion is an entity of the Strategic Intervention of the Mazovian Voivodeship.

Intervention measures to reduce the emission from energy sector:

- A. Improving the efficiency of the Mazovian energy economy - by reducing the demand for thermal energy to the level of at least the energy passivity of buildings:
 - Thermal modernization of public utility buildings, buildings associated with economic activities, multi-family residential buildings in towns and villages of municipalities;
 - Modernization and construction of heating systems with a reduced temperature of the heat carrier, so-called medium-temperature (60°C - 75°C) and connecting the above mentioned buildings to them after modernization;
 - Allowing the supply of heating network with excess and unused heat in industrial plants and from dispersed renewable energy sources (RES);
 - Gradual liquidation of buildings that do not meet energy efficiency requirements - construction of houses with social flats;
- B. Improving the energy efficiency of electricity use, in particular:
 - in lighting using energy-saving LED lighting and in the production of cold used in air conditioning of buildings and industrial processes;
 - the use of high-efficiency cogeneration of electricity and heat.
- C. Introduction to exploitation the renewable energy sources
- D. Inclusion of renewable energy sources for district heating and electricity networks.
- E. Generation of energy from low-emission fuels, also including the use of low-emission fuels in municipal transport
- F. Defining the methodology of financing modernization and investment projects in the region:
 - Applying LCC analyzes;

- Financing projects with support funds, but also low-interest loans;
- Using the ESCO methodology: PPP and also PPA.

For the selection of the best applied solutions, Subregion was divided into 6 zones including: municipal zone of the City of Siedlce and the settlements of the Siedlecki Powiat constituting one economic unit; 4 county cities: Sokotów Podlaski, Węgrów, Garwolin and Łosice with their suburban zones, constituting economic microregions; municipalities with their surroundings; rural communes of the above-mentioned four counties - with small towns dispersed in the area or also single farms; communication routes and their lighting; disassembled construction.

Subregion - thanks to the use of renewable energy sources and low-emission fuels, will lead to **energy self-sufficiency of rural communes (areas) as well as cities creating Autonomous Energy Regions** - ARE which will improve energy security and the quality of the environment for residents, entrepreneurs in the region.

Adressed Barriers

The following barriers must be addressed:

- 1) legislative barriers - lack of political support; current legislation in the RES sector hinders its development;
- 2) financial barriers - considered by local decision-makers as a key barrier to development - methods of financing modernization and investment projects should be defined;
- 3) raising awareness among the public (in particular local authorities) - current lack of interest in energy and frequent misconceptions about RES and EE

Required data for scenario development

In order to determine the initial state for the Siedlce subregion, it will be necessary to obtain data on: public and private buildings, as well as local industrial plants and, waste management, transport management, current energy production from renewable energy sources; past and current energy demand; past and current CO₂ emissions. These data will allow for realistic determination of the development scenario of the Siedlce subregion, especially in the area of creating autonomous energy regions.

Involvement of Stakeholders

See Annex

Contact person: Bartosz Dubiński, Mazovian Energy Agency, b.dubinski@mae.com.pl



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REGIONAL VISIONS

Stakeholders involvement

Annex to D3.3 – Poland



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

1. Introduction

This Annex aims at giving an overview of the stakeholder involvement during the process of developing a regional energy vision.

Stakeholder Engagement is an integral part of the PANEL Model. The model consists of interrelated components of capacity building, stakeholder engagement and activation, and long-term energy planning.

PANEL2050 model for Central and Eastern Europe Sustainable Energy Network CEESEN



PANEL Stakeholder Engagement is taking a strategic approach for engaging the community to the local energy management. Stakeholders are invited to participate in the long-term energy planning, bringing their knowledge and validation into the process. They are supported by engagement experts and capacity building activities.

2. Stakeholders involvement in energy visioning

At the beginning of the project we started developing stakeholders network and at the same time we try to establish front group of active people that would be involved more intensively in regional roadmapping process.

During the project we have got in touch with around 61 organisations, local authorities, municipalities, enterprises and universities which we found the most important and influential in the frames of the project.

In the process of Roadmapping we focused on involving municipalities and local authorities as they are a decision makers in the region. During the whole communication process of involving Stakeholders in PANEL 2050 project indicated also involvement in the Regional Trainings and CEESEN Conference. Few of the municipalities stand out as an active Partners compelled in PANEL 2050 mission. Representatives of 5 organisations municipalities from: Kotuń, Suchożebry, Stara Kornica and also LGD Siedlce were involved in each step of the project and after Regional Trainings and Bootcamp were also involved in Roadmapping process as MAE's Forerunners.

MAE as a regional energy agency which supports the use of solutions improving the energy efficiency of buildings and promotes the use of renewable energy sources mainly in rural areas of Mazovia, especially the peripheral areas of the Masovian Region. From these areas,

it mainly sought to attract stakeholders within the PANEL2050 project. Among the stakeholders involved, based on the main problems and factors affecting the implementation of the low-emission economy in Mazovia, taking into account territorial diversity, especially metropolitan areas from peripheral / agricultural subregions, were selected from those involved in the Siedlce subregion - selected as a representative area.

Among the stakeholders, a study of the needs in the subject of regional training was conducted, the implementation of which will raise the competences of stakeholders for the needs of building a low-emission economy in Mazovia.

The survey of needs indicated that the stakeholders saw the biggest deficiencies in the possibilities of financing activities related to improving air quality in Mazovia, besides this also in methods of raising awareness in the society, project preparation and project management. As it turned out in the process of creating the vision later, the topic of the main training needs coincided with the main barriers to the development of a low-emission economy in Mazovia.

During the conducted regional trainings, the most involved stakeholders emerged in the Siedlce sub-region. From among them a team was chosen to conduct the Roadmapping process. Selected training participants had the opportunity to participate in the CEESSEN conference in Prague. The discussions held, both at the regional training stage and during subsequent contacts, including during the CEESSEN conferences, enabled the emergence of Forerunners in the Siedlce subregion. Some of them had the opportunity to participate in the Bootcamp in Budapest. The building capacity of the stakeholders during the project activities is and will be used in the Roadmapping process.

Stakeholders' involvement in the development of the energy vision was ensured in two ways. On the one hand, discussions were held with experts and entrepreneurs involved in the development of renewable energy in Mazovia. On the other hand, for the purposes of defining the vision of rural (non-urbanized) areas, in particular based on the experiences and conditions of the Siedlce subregion, local meetings with the poviat authorities and municipalities of the Siedlce subregion were carried out. During these discussions representatives of stakeholders participated in the Local Action Group of the Siedlce poviat.

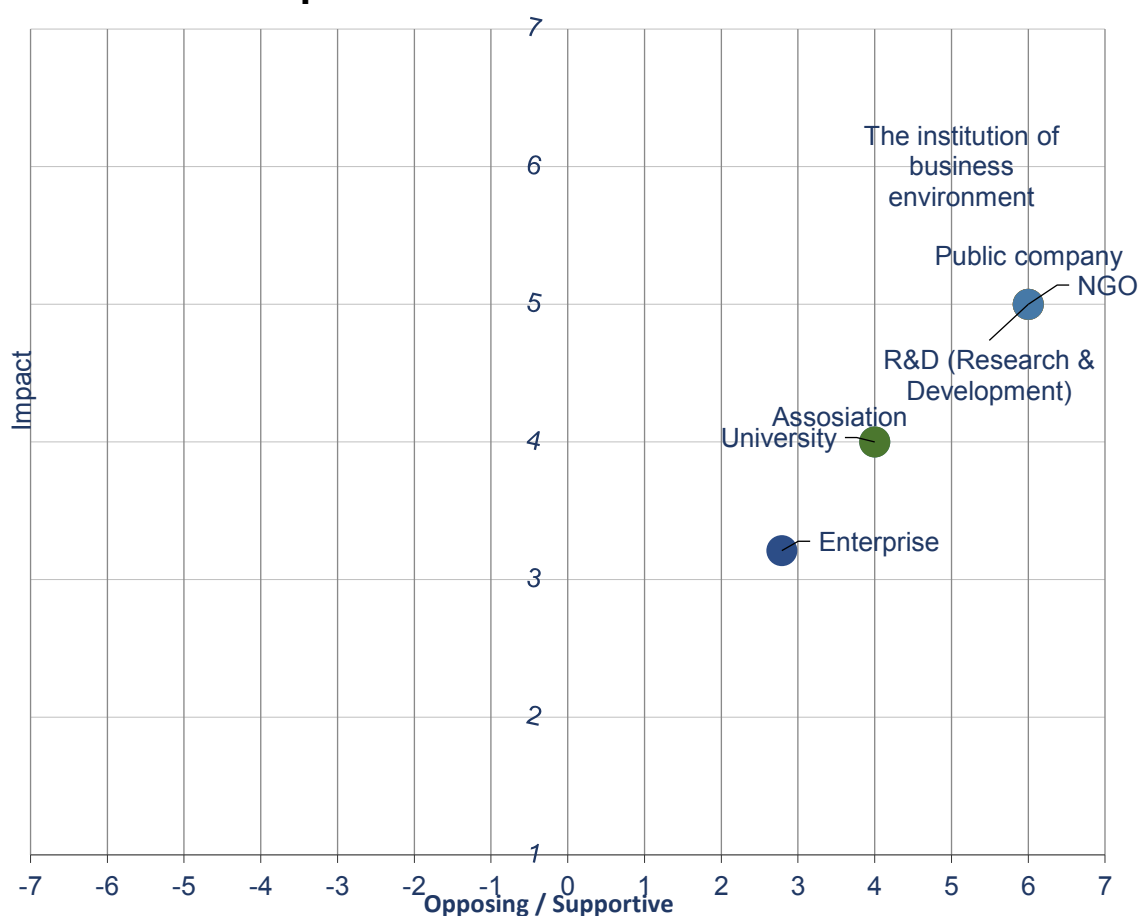
The following entities participated in the process of creating the vision Communes: Stara Kornica, Kotuń, Suchożebry, Wodynie. Selected entrepreneurs and experts from the list of stakeholders. Local Action Group of the Siedlce Poviat, Mazovian EE and RES Klaster, EKAR Sp. z o.o.

3. Overview of related communication / events

Date, place	Participants	Content / Results / conclusions
12.04.2018, Kotuń	Jacek Świrski, Urząd Gminy Suchożebry Grzegorz Góral, Urząd Gminy Kotuń, Hubert Pasiak, LGD Siedlce, Urząd Gminy Wodynie Ireneusz Kaługa, LGD Siedlce Arkadiusz Piotrowski, MAE	Analysis and discussion of the energy situation of the Siedlce subregion, Identification of the main challenges and directions of action Indication of the main areas of intervention of local authorities Assessment of the dominant barriers to the low-carbon economy Summary of the created vision
15.05.2018 Warsaw	Arkadiusz Piotrowski, MAE Żaneta Latarowska, MAE Krzysztof Arnold, EKAR Bartosz Dubiński, MAE	Collecting the main factors affecting the vision created Shaping the basic elements of the vision Determination of basic indicators

07.06.2018, Stara Kornica	Kazimierz Hawryluk, Urząd Gminy Stara Kornica Krzysztof Arnold, EKAR Arkadiusz Piotrowski, MAE Emilia Borysiak, Urząd Gminy Kornica, LGD Tygiel Bugu	Verification of the developed vision from the point of view of the conditions of the eastern part of the Siedlce sub-region Opinions and conclusions for visions
27.08.2018, Warsaw	Arkadiusz Piotrowski, MAE Żaneta Latarowska, MAE Krzysztof Arnold, EKAR Bartosz Dubiński, MAE	Reassumption of affinity activities and opinions about visions Optimizing the shape of verbal vision
12.09.2018 Siedlce	Around 15 stakeholders	Presentation of the vision Discussing the factors affecting the roadmapping process Roadmapping Workshops

4. Stakeholder Map



To be filled by WP leader

Attendance sheet(s) was/were collected	X
Excel list 'Stakeholder Engaged in PANEL 2050' was updated and sent to WP leader	X

ENERGY VISION

Region: Bucharest-Ifov

English version

prepared by
AEEPM

PANEL 2050 – Partnership for New Energy Leadership 2050
Deliverable 3.3

Date: 15.06.2018



**CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK**

Vision Statement

In 2050, Bucharest-Ilfov will be the first energy-efficient region of Romania, a region that exploits sustainably the locally available renewable energy sources, using the region's solar potential and the development of intelligent energy distribution networks.

Vision Description

Bucharest-Ilfov region, taking into account the fact that Bucharest Capital is located in the heart of the region, will lead to meeting the energy and climate efficiency targets set at national level.

According to the regional energy profile (REP), the Bucharest-Ilfov region benefits from an excellent potential in the production of electricity from renewable sources, especially solar energy. Heat production from solar sources can become an example for other regions of Romania.

The implementation of the regional mobility strategy shows that there is good potential for the spread of electric vehicles but is necessary to ensure a sufficient number of charging stations and, what is very important, to ensure that the electricity grids can provide additional tasks will result from an increase in the number of electric vehicles.

Electricity networks will need to be upgraded to meet increasing demand due to a major shift in the global energy value chain and also due to the multiplication of electricity-based technologies as a source of energy.

Achieving EU targets on energy efficiency and renewable energy in 2030 will not be possible without greater innovation and intelligence in networks, both at transport and distribution levels, notably through information and communication technologies. These will be essential in adopting demand management and other intelligent network services.

With the promotion of solar photovoltaic systems and efficient cogeneration systems, the Bucharest-Ilfov **Region could significantly contribute to the achievement of the national RES objective in the final consumption of electricity by 2050.**

The region's main challenges are:

- Increase the energy performance of buildings and introduce new green technologies;
- Ensure local energy supply from solar sources;
- Develop smart grids for energy distribution;
- Development of transport based on electric municipal transport.

Addressed barriers

In order for the strategies, actions and measures that follow the Vision to be successful, a supportive environment must be created. This includes policy context, financial support and stakeholder involvement.

- **Political challenges** – in the Region Bucharest-Ilfov (Bucharest Capital, with 6 districts - 8 city - 32 communes - 91 villages) it was very difficult to “put all mayors at the same table” and to find compromises on the targets ambitions on energy efficiency since all political spectrum is represented as elected mayors panel;
- **Institutional and legal** – decision chain is too fragmented between local and central government and the legal environment is slightly unclear;

- **Financial** – local and central budget is built on the annual basis and legal and administrative barriers make difficult to associate multiple local authority to such ambitious projects.

Data required for scenario development

Although statistics on the energy sector are accessible at regional level, some data are needed on the level of data on alternative energy development as well as general data on energy consumption in homes.

Involvement of stakeholders

Involvement of stakeholders in the vision process was ensured through political meetings with all stakeholders where visions of the vision were discussed.

A first draft version was prepared and sent to the main stakeholders to provide additional comments.

Municipalities:

- Bucharest Capital and Sector 1, 2, 6, 4
- Otopeni city
- Magurele city
- Chitila city

Ilfov County (as the major aggregator of the output)

Organizations: AEEP – Local Energy Agency Bucharest, ENEL, EON, AMR- Romanian Municipality Association and representatives of the Romanian Energy Auditors Body

UGIR – Romanian Industrialist Association

The vision was adapted to all these comments then followed the formal adoption at policy decision level. The major difficulty was in harmonizing the positions of all major cities in the Bucharest-Ilfov Region to preserve the ambition level and the realism of the vision.

Contact person: Ion Dogeanu, EMEA, ion.dogeanu@managenergy.ro



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ENERGY VISION

Region: Podravje
English version

prepared by
Local Energy Agency Spodnje Podravje

PANEL 2050 – Partnership for New Energy Leadership 2050
Deliverable 3.3

Date: 23.05.2018



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

Vision Statement

In 2050, Podravje will be a Smart region that exploits in a maximum and sustainable way the local available renewable energy sources, transforming the energy using innovative technology and distributing it through active networks. People in Podravje region will live in a clean and healthy environment.

Vision Description

Regions in Slovenia are following the energy and climate targets set at the national level. Some of the outstanding national energy and climate targets are:

- 30 % share of OVE in the final energy consumption until 2030;
- The use of RES in final electricity consumption of over 50 % until 2030;
- Improving energy efficiency by 27 % until 2030;
- 80 % reduction of GHG emissions until 2050, comparing with the year 1990.

According to the Regional energy profile (REP), Podravje region is excellent in electricity production from RES, since the river Drava has a great Hydro-energy potential, that is already by 97 % exploited. In addition to water, solar energy is also used for the production of electricity, while other renewable resources are virtually not present. Heat production is dominated by wood biomass in Podravje. Research shows that around 30 % of the theoretical potential of wood biomass is currently used, so we still have room for a strong growth. In the area of transport there is a good potential for the spread of electric vehicles, but it is necessary to ensure a sufficient number of charging stations and, which is very important, to ensure that the power grids will be able to provide additional loads that will result from an increase in the number of electric vehicles.

EU guidelines on energy infrastructure predict that in the future the Electricity grids will need to be upgraded and modernized to meet increasing demand due to a major shift in the overall energy value chain and also because of the multiplication of technologies relying on electricity as an energy source. The grids must also be extended and upgraded to foster market integration and maintain the existing levels of system security, but especially to transport and balance electricity generated from renewable sources. At the same time the grids also need to become smarter. Reaching the EU's 2020 energy efficiency and renewable targets will not be possible without more innovation and intelligence in the networks at both transmission and distribution level, in particular through information and communication technologies.

Active networks will enable long-term flexibility, availability, reliability and efficiency of electricity supply, will support greater efficiency and the introduction of distributed generation of electricity from RES and CHP with high efficiency. With the promotion of solar PV and high efficient CHP systems, Podravje region could significantly contribute to the national target of 50 % of RES in final electricity consumption until 2030.

Main challenges of the region until 2030 will be:

- **To create and maintain a supportive environment for improving the energy performance of buildings and introduce new green technologies;**
- **To ensure local energy supply;**
- **Development of smart energy distribution networks;**
- **To ensure environmental sustainability and combating climate change;**

All regional targets set in the Vision are prepared according to the national goals set in the National energy program (NEP) and the results will have a positive effect in reaching national targets and consequently EU targets.

Addressed barriers

In order that the strategies, actions and measures that follows the Vision, will be successful, a supportive environment has to be created. This includes the policy background, financial supports and the involvement of stakeholders.

For a successful implementation of the Energy Vision, the following barriers have to be overcome:

- Lack of political support;
- Low interest in sustainable energy development;
- Low interest in local energy production;
- Development of subsidized energy system is not sustainable;
- Lack of national and local investment capacities in public and private sector;
- Lack of public awareness;
- Availability of relevant data.

Contribution to climate change mitigation

Most important aspects of the Vision are exploiting of local renewable sources of energy, the use of innovative technologies and demand side management. In this way Podravje will contribute to the reduction of greenhouse gas emissions and therefore help to reach national targets.

Required data for scenario development

In order to provide quality predictions and scenarios, the most accurate and realistic baseline data is needed. Such an analysis of the existing situation was carried out during the preparation of the REP, but we noticed that at the regional level, there is a lack of some important statistical data. That is why we used a model to calculate certain data. By improving regional statistical databases, we can consequently influence the quality and the accuracy of the scenarios produced.

Involvement of stakeholders

The involvement of stakeholders in the visioning process was ensured through individual and small group meetings and telephone conversations, where the vision perspectives were discussed. A draft version was prepared and sent to our stakeholders to provide additional comments. By considering all comments, the final version of the Vision was created.

For more information about the stakeholder involvement, see Annex.

Contact person: Janez Petek, LEA SP, janez.petek@lea-ptuj.si



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 696173. Disclaimer: The sole responsibility for the content of this material lies with the authors. It does not necessarily represent the views of the European Union, and neither EASME nor the European Commission are responsible for any use of this material.

REGIONAL VISIONS

Stakeholders involvement

Annex to D3.3 – Slovenia



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

1. Introduction

This Annex aims at giving an overview of the stakeholder involvement during the process of developing a regional energy vision.

Stakeholder Engagement is an integral part of the PANEL Model. The model consists of interrelated components of capacity building, stakeholder engagement and activation, and long-term energy planning.

PANEL2050 model for Central and Eastern Europe Sustainable Energy Network CEESEN



PANEL Stakeholder Engagement is taking a strategic approach for engaging the community to the local energy management. Stakeholders are invited to participate in the long-term energy planning, bringing their knowledge and validation into the process. They are supported by engagement experts and capacity building activities.

2. Stakeholders involvement in energy visioning

Within the PANEL 2050 project we have developed a network of stakeholders who can provide us valuable input in terms of energy visioning and development of action plans and who can be involved more intensively into the regional roadmapping process.

Through the project we have recognized more than 30 stakeholders, that could contribute valuable input for the creation of energy vision and related action plans. Some stakeholders have been recognized as new stakeholders of our organization but the most of them are municipalities or organisations that we already worked with before. As a local energy agency we work mainly with municipalities from the Spodnje Podravje. Our contact with them is on a regularly basis, weekly or monthly. In this way, most of the involvement of stakeholders for the visioning process has been done by individual meetings and telephone conversations.

In September 2017 we carried out a stakeholder training, with policy analysing and project funding as the main topics. The training was organized as an open discussion. On this event we received the first valuable content from our stakeholders. The event helped us to better understand the current situation on energy policies, especially the needs and shortcomings of energy policies and funding programmes.

On 11. April 2018, LEA Spodnje Podravje carried out a regional training in small group prepared for forerunners. At the training they became familiar with the Regional energy

profile, developed within WP3 and serves as a basis for Energy Visions. Through the training the participants also received basic knowledge on energy visioning and roadmapping process and how to involve different stakeholders into that process. Through the regional training the participants received the information's and gained knowledge needed for the more intensive training in Budapest (Boot camp). The regional training has been mainly linked to the outputs of WP3 and the training topic has led to an open discussion where the main challenges for Podravje until 2050 have been discussed. The result of the discussion was the "initial" vision perspective – a starting point on which the first vision draft was built on.

After the first draft version of the Energy Vision has been prepared it was send out to our stakeholders, to provide additional comments. Considering all comments the final version has been created.

The most contributive stakeholders in terms of developing the Energy Vision were representatives from:

- RIC – Razvojno informacijski center Slovenska Bistrica;
- SRC Bistra - Scientific research centre Bistra Ptuj;
- Municipality of Ptuj;
- STENG - national cleaner production centre Ltd;
- ENERGA.P.

3. Regional stakeholders and forerunners network

STENG - national cleaner production centre Ltd.	Private Sector	STENG-NATIONAL CLEANER PRODUCTION CENTRE Ltd. is the Slovenian national cleaner production centre and a company which transfers knowledge from universities and institutes to the industry (spin-off). Other activities of the company are research and development in environmental sciences, design, consulting and engineering in industry and the service sector. In applied research we successfully cooperate with local and state research organizations, universities and industry.
Znanstveno-raziskovalno središče Bistra Ptuj ZRS Bistra Ptuj	Public Sector	The main tasks of Bistra are planning and managing of developmental activities in municipalities of the Spodnje Podravje region. Their core activities of the institution include: promotion of development in the Spodnje Podravje region on all areas of work on a local level; establishment of a link between universities and institutes, and transfer of scientific and economic knowledge to SMEs; promotion and creation of knowledge in order to stimulate the area of human resources in the region.
Komunalno podjetje Ptuj d.d.	Public Sector	Komunala Ptuj is a public service provider dealing with energy efficiency - Public company responsible for water distribution, drainage and sewage treatment, manufacturing and distribution of heat in the Spodnje Podravje region.
Javne službe Ptuj, podjetje za izvajanje gospodarskih javnih služb in drugih dejavnosti, d.o.o.	Public Sector	Javne službe Ptuj is a public service provider responsible for collection and treatment of urban and drainage waste water, processing and disposal of municipal waste, system operator of the gas distribution network.

Območna obrtno-podjetniška zbornica Ptuj OOZ Ptuj	Public Sector	The Chamber of Craft and Small Business of Slovenia is an umbrella organisation comprising the craft and small business chamber system jointly with 62 regional chambers of craft and small business. The Chamber of Craft and Small Business in Ptuj is one of the 62 regional chambers.
TMD INVEST podjetje za investicijsko dejavnost, trgovino in storitve d.o.o. TMD INVEST	Private Sector	TMD invest mainly deals with the design in the construction sector.
Projekta inženiring Ptuj d.o.o.	Private Sector	Projekta inženiring Ptuj mainly deals with the design in the construction sector.
Ptujska televizija PeTV,	Public Sector	Local TV media house
Razvojno informacijski center RIC	Public Sector	RIC is a development-supporting institution whose primary purpose is to promote the development of entrepreneurship, economic development and tourism in the municipality of Slovenian Bistrica
Visoka šola na Ptuj	Private Sector	The basic aim of the high school in Ptuj is quality and excellence, diversity and accessibility. In its operations, they collaborate with research institutions and economic and public sectors, and pay special attention to improving the human resource cooperation between knowledge institutions
Višja strokovna šola Ptuj - Bionika	Public Sector	Higher professional education in the direction Bionics
Strojna šola Ptuj	Public Sector	School of Mechanical Engineering Ptuj
ERBANNO, Andreja Komel s.p.	Private Sector	Andreja Komel is active in the conclusion of transactions. Otherwise she plays an important role in the energy field of Municipality Ptuj.
Municipality of Podlehnik	Public Sector	Municipal Administration performs administrative, professional and other tasks within the rights and duties of the municipalities in the areas of: general affairs, normative legal matters, administrative affairs, public finances, economic activity and agriculture, social activities, environmental protection and spatial planning, utilities and infrastructure, of inspection and municipal officers, the management of building land.
Municipality of Ptuj	Public Sector	Key development challenges of the Municipality Ptuj are: Promoting entrepreneurship and attracting investors; Introduction of the concept of sustainable mobility; Efficient use of energy in the public and private sectors, increasing the supply of renewable energy and lowering carbon footprint; Tourist site development, innovative tourism products and services as well as effective promotion; The revival of the old town, on the principles of sustainable development; Replacing the revitalization of degraded urban areas.
Municipality of Videm	Public Sector	The municipality performs local matters of public interest determined by law and the Articles of Association, in particular: Normative regulate local matters of public interest; Manages municipal property; Enables conditions for the economic development of the municipality; Creates conditions for the construction of housing and cares for the increase in social housing fund, is responsible for local public services; Concerns for the protection of air, soil, water resources, noise protection, collection and disposal of waste and carry out other activities of environmental protection ...
Municipality of Hajdina	Public Sector	Municipality of Hajdina is among the medium-sized municipalities in Slovenia. Their long-term stance is ecological protection.

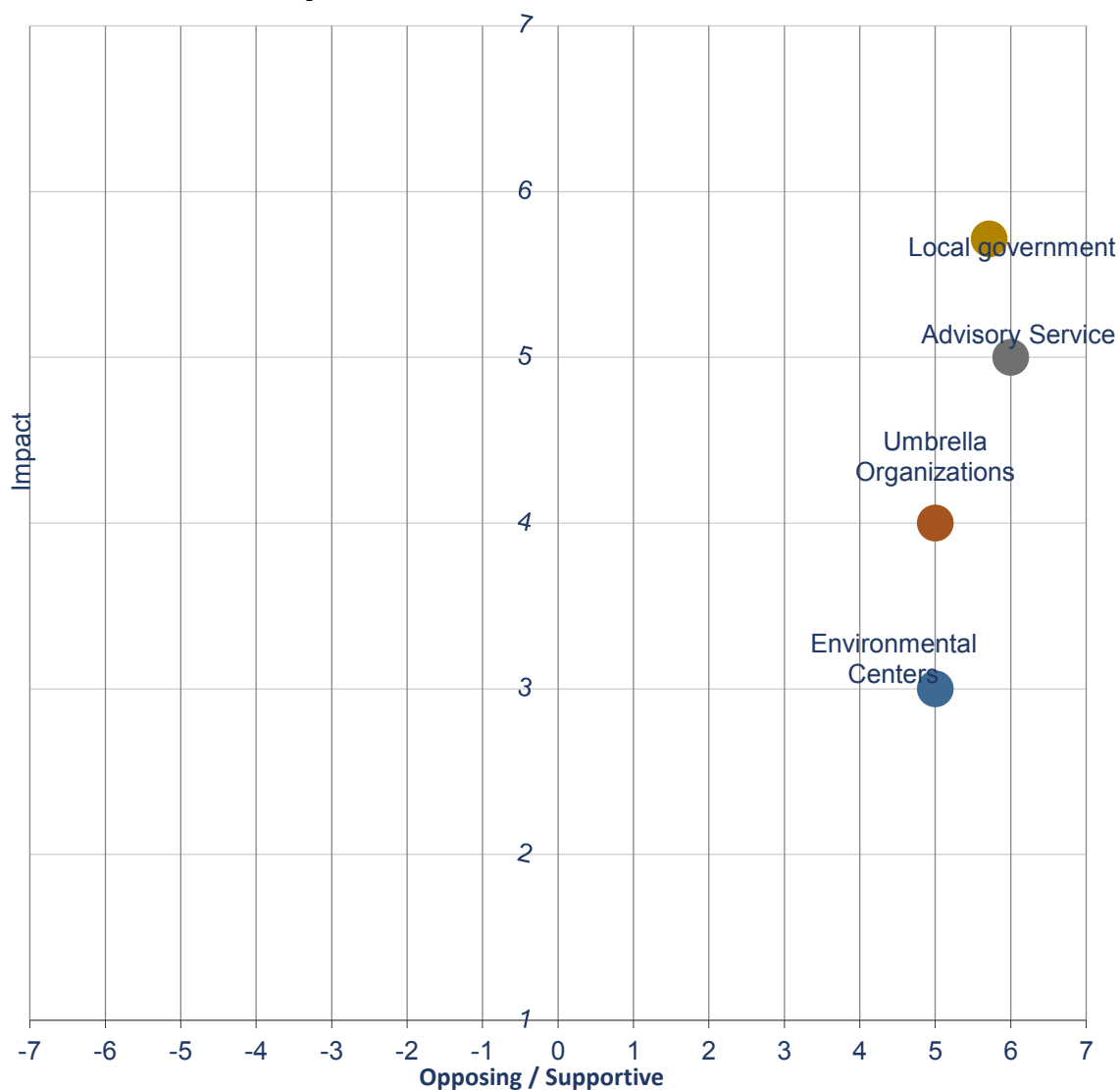
Municipality of Ormož	Public Sector	Some of the activities carried out by the Municipality are: managing municipal property; enabling conditions for economic development of the municipality; performing tasks in the field of interventions in construction of facilities and providing a public service; creating conditions for housing construction; within its jurisdiction governs, manages and is responsible for local public services; Takes care for the protection of air, soil, water resources, noise protection, collection and disposal of waste and carry out other activities of environmental protection; regulate and maintain water supply and energy communal objects;
Municipality of Gorišnica	Public Sector	Some of the activities carried out by the Municipality are: managing municipal property; enabling conditions for economic development of the municipality; performing tasks in the field of interventions in construction of facilities and providing a public service; creating conditions for housing construction; within its jurisdiction governs, manages and is responsible for local public services; Takes care for the protection of air, soil, water resources, noise protection, collection and disposal of waste and carry out other activities of environmental protection.
Municipality of Dornava	Public Sector	Some of the activities carried out by the Municipality are: managing municipal property; enabling conditions for economic development of the municipality; performing tasks in the field of interventions in construction of facilities and providing a public service; creating conditions for housing construction; within its jurisdiction governs, manages and is responsible for local public services; Takes care for the protection of air, soil, water resources, noise protection, collection and disposal of waste and carry out other activities of environmental protection.
Municipality of Cirkulane	Public Sector	Some of the activities carried out by the Municipality are: managing municipal property; enabling conditions for economic development of the municipality; performing tasks in the field of interventions in construction of facilities and providing a public service; creating conditions for housing construction; within its jurisdiction governs, manages and is responsible for local public services; Takes care for the protection of air, soil, water resources, noise protection, collection and disposal of waste and carry out other activities of environmental protection.
Municipality of Destriak	Public Sector	Some of the activities carried out by the Municipality are: managing municipal property; enabling conditions for economic development of the municipality; performing tasks in the field of interventions in construction of facilities and providing a public service; creating conditions for housing construction; within its jurisdiction governs, manages and is responsible for local public services; Takes care for the protection of air, soil, water resources, noise protection, collection and disposal of waste and carry out other activities of environmental protection.
Municipality of Juršinci	Public Sector	Some of the activities carried out by the Municipality are: managing municipal property; enabling conditions for economic development of the municipality; performing tasks in the field of interventions in construction of facilities and providing a public service; creating conditions for housing construction; within its jurisdiction governs, manages and is responsible for local public services; Takes care for the protection of air, soil, water resources, noise protection, collection and disposal of waste and carry out other activities of environmental protection.
Municipality of Kidričevo	Public Sector	Some of the activities carried out by the Municipality are: managing municipal property; enabling conditions for economic development of the municipality; performing tasks in the field of interventions in construction of facilities and providing a public service; creating conditions for housing construction; within its jurisdiction governs, manages and is responsible for local public services; Takes care for the protection of air, soil, water resources, noise protection, collection and disposal of waste and carry out other activities of environmental protection.

Municipality of Majšperk	Public Sector	Some of the activities carried out by the Municipality are: managing municipal property; enabling conditions for economic development of the municipality; performing tasks in the field of interventions in construction of facilities and providing a public service; creating conditions for housing construction; within its jurisdiction governs, manages and is responsible for local public services; Takes care for the protection of air, soil, water resources, noise protection, collection and disposal of waste and carry out other activities of environmental protection.
Municipality of Zavrč	Public Sector	Some of the activities carried out by the Municipality are: managing municipal property; enabling conditions for economic development of the municipality; performing tasks in the field of interventions in construction of facilities and providing a public service; creating conditions for housing construction; within its jurisdiction governs, manages and is responsible for local public services; Takes care for the protection of air, soil, water resources, noise protection, collection and disposal of waste and carry out other activities of environmental protection.
Municipality of Žetale	Public Sector	Some of the activities carried out by the Municipality are: managing municipal property; enabling conditions for economic development of the municipality; performing tasks in the field of interventions in construction of facilities and providing a public service; creating conditions for housing construction; within its jurisdiction governs, manages and is responsible for local public services; Takes care for the protection of air, soil, water resources, noise protection, collection and disposal of waste and carry out other activities of environmental protection.
Local Energy Agency Pomurje - LEA Pomurje	Public Sector	The promotion and enhancement of continuous improvement of energy efficiency and accelerated deployment of renewable energy sources in the Pomurje region, with orientation towards maximizing total local energy self-sufficiency in the region and enhancing the well-being of its people.
Local Energy Agency Dolenjska, Posavje, Bela krajina - LEAD	Public Sector	LEAD facilitates the promotion and improvement of energy efficiency and introduction of renewable energy sources in the region. With their programme and development they pursues the objectives of national and European energy policy in favor of local energy self-sufficiency and strengthening the welfare of its people.
Zavod energetska agencija za Savinjsko, Šaleško in Koroško - KSSENA	Public Sector	KSSENA facilitates the promotion and implementation of measures in the field of renewable energy and energy efficiency and sustainable urban transport. With the development and pursues the objectives of national and European energy policy in favor of social, economic and environmental development at the local level.
Goriška lokalna energetska agencija Nova Gorica - GOLEA	Public Sector	GOLEA is carrying out development, research, educational, promotional and consultancy activities in the field of the promotion and enhancement of continuous improvement of energy efficiency and accelerated deployment of renewable energy sources in the Gorica region;
Local energy agency Gorenjska - LEAG,	Public Sector	Energy Agency of Gorenjska help local actors in planning for reducing consumption and optimize energy efficiency. Activities aimed at raising consumer awareness about the transition from fossil fuels to renewable energy sources such as biomass, biogas, geothermal, solar and hydropower.
Energy Agency of Podravje - EnergaP,	Public Sector	EnergaP supports the introduction of good energy management practices, advocate the concept of sustainability, provide information and guidance, and offer a number of other local services based on specific local energy needs. They operate impartially on both energy demand and supply issues and reflect the local situations, economic and social circumstances and the geographical size of the relevant local area

4. Overview of related communication / events

Date, place	Participants	Content / Results / conclusions
7.3.2017, Ptuj	<ul style="list-style-type: none"> - Matjaž Kopše, Municipality Makole - Andrej Trunk, Municipality of Ptuj - Robert Novak, ZRS Bistra Ptuj - Ivana Kacafura, GOLEA - Boštjan Krajnc, KSSENA - Janko Lorbek, Municipality of Zavrč - Andrej Burjan, ZRS Bistra Ptuj - Branko Zorko, Municipality Markovci - Marinka B. Kolenko, Municipality Markovci - Ivica Trunk, Municipality Gorišnica - Mateja Zemljak, Municipality Ormož - Zinka Hartman, Municipality Sv. Tomaž - Jelka Zidarič Trstenjak, Municipality Središče ob Dravi - Blanka Kočever, Municipality Središče ob Dravi 	<ul style="list-style-type: none"> - Training on financial mechanisms in energy sector, project writing, policy analysis and overview of innovation and latest developments in renewable energy sector. - The representatives of our Stakeholder Group (mostly Municipalities) had the opportunity to get information's about possible Technologies for energy efficiency and the use of renewable sources of energy and on the other hand, they received all necessary information's about the possibilities of funding those technologies in their buildings. It was a great opportunity for Municipalities to step into direct contact with providers of different Technologies.
20.9.2017, Ptuj	<ul style="list-style-type: none"> - Jasmina Perkič, LEA Pomurje - Petra Plošnik, ENERGAP - Franc Jerenko, Komunalno podjetje Ptuj - Andrej Burjan, ZRS Bistra Ptuj - Steve Taylor, Green Angels Syndicate - Nick Lyth, Green Angels Syndicate - Štefan Čelan, ZRS Bistra Ptuj - Janez Petek, LEA Spodnje Podravje - Jan Harb, LEA Spodnje Podravje - Irena Ostroško, LEA Spodnje Podravje 	<p>Training on energy policy analysis and possibilities of founding energy related projects.</p> <p>The thematic of the seminar has led to an open discussion, where participants shared their knowledge and experiences about funding mechanisms and programmes. It was an excellent opportunity for the participants to get a better overview about different funding opportunities and to gain knowledge of national energy policies.</p>
11.4.2018, Ptuj	<ul style="list-style-type: none"> - Tomaž Pristovnik, RIC Slovesnka Bistrica - Simona Kučič Pogorelc, Municipality of Ptuj - Roman Kekec, LEA Spodnje Podravje - Janez Petek, LEA Spodnje Podravje 	<p>Small group training on energy planning.</p> <p>Through the training the participants received basic knowledge on energy visioning and road mapping process and how to involve different stakeholders into that process. Participants gained knowledge needed for the more intensive training in Budapest (Boot camp).</p>

5. Stakeholder Map



To be filled by WP leader

Attendance sheet(s) was/were collected	x
Excel list 'Stakeholder Engaged in PANEL 2050' was updated and sent to WP leader	x

ENERGY VISION

Region: Pleven, Bulgaria
English version

prepared by
WWF Bulgaria

PANEL 2050 – Partnership for New Energy Leadership 2050
Deliverable 3.3

Date: November 2018



**CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK**

Vision Statement

In 2050, Northern Bulgaria will have a modern and developed low-carbon economy. The energy and electricity production from renewable energy sources will reach a minimum of 85% from the overall share of consumed energy and fuels. The region will implement a concrete plan with a set deadline for a transition to a 100% clean and future oriented zero carbon energy system, and so providing regional and national security and independence while ensuring environmental protection, and also contributing to the realization of the UN Sustainable Development, the Paris agreement and other strategic initiatives and processes in these areas.

Vision Description

The Vision is based on three principles – energy independence, accessibility and renewability. In order to achieve its **energy independence** Northern Bulgaria needs a fundamental change in the focus and direction of the future National Energy Strategy with targets for 2030 and assumptions up to 2050. In short term, Northern Bulgaria should prioritize the opportunities for declining region's dependence on a single energy resource provider and to ensure the diversification of energy sources based on local energy resources and assets.

Accessibility, or reducing energy poverty and energy costs of the households will be achieved through prices, determined by real market interaction between more local, renewable and smart energy and transport systems and productions, effectively participating on free markets. It is essential that the reform of the state energy sector and allowing participation of individuals and groups in the field, including in the area of development and change of policies for national, regional and local energy transition (energy transformation) starts happening as quickly as possible. The final goal is achieving a **renewable**, smart, connected, developed digital and local energy and transport system. This could easily happen through promoting decentralization of production, based on local resources and characteristics; saving, storing and supplying energy, including the use of efficient technologies and renewable energies, in a way energy to be accessible through many small producers and suppliers.

Addressed barriers

Politically motivated energy dependence by import of fossil fuels, but also through the planning of new nuclear-powered capacities, including monopolistic companies leads to lack of capacity building in the expert institutional stakeholders but also leads to a lack of capacity and political will for visionary policies in line with the EU goals, visions and roadmaps on European and global level.

Because of this there are serious gaps in energy and economic planning in North Bulgaria, the inventorization of the current state of the energy sector is also often missing. The administrative structures are inefficient and a unified and systematized energy statistical information is missing mainly at regional and municipal level. The capacity for research & development is very low and is practically missing. High carbon power capacities have continuously postponed decommissioning and restructuring deadlines, while at the same time funding is secured through vague and hidden subsidizing mechanisms and debt schemes. Corruption opportunities are emerging, generating distrust among potential investors, which also discourages the development of all possible energy and economic alternatives. Financial instruments for energy decentralization through investments in many small production capacities are inaccessible. There is a lack of a plan to effectively restructure the transmission network to smart grids.

Contribution to national and regional targets

By 2018 a serious delay is observed in all areas with the developing of new strategic documents for Northern Bulgaria with outlook and targets outside the 2020 scope. There are very few such strategic documents that have been developed and approved, and they are made mainly by expert organizations and non-state / regional / municipal structures working at national level, and in this respect, the Energy Vision for Northern Bulgaria is expected to make a

concrete contribution to the establishment of long-term regional or national goals. The participants that took part in the development of the Vision are hoping it will serve as an example in the development of future ones, i.e. to be multiplied.

Contribution to climate change mitigation

Despite challenges to the current Vision, due to the absence of formal long-term science-based strategic documents on national level for which there are no specific implementation plans and targeted funding, there are formal development processes of such documents after 2020 and the setting of specific targets on some of the key subjects regarding topics like the climate change adaptation. This vision can also be recognized in other processes and strategic documents.

Required data for scenario development

Currently each institution and/or organization that collects data is doing it only in those aspects that affect them directly and in a format that is available and convenient for their purposes and needs. The development of a holistic approach which will unify data in a single structure at all levels is needed. Development of long-term scenarios requires detailed economic research for efficient energy networks and power management. The connectivity indicators of energy networks should be redefined. The potential energy and economic deficits by gradual and planned closure of conventional coal and nuclear capacities in conditions of aggressive policies to support energy efficiency and the construction of new RES capacities has to be calculated. The energy aid/ subsidies/ regulated prices for households, affected by energy poverty, for heating and electricity have to be redefined.

Involvement of stakeholders

Stakeholders have been identified, and their participation in the Vision preparation has been realized through individual meetings, expert discussions and workshops, both within the project and in other formats. Stakeholders have been able to express views and expert comments, to discuss their expectations, opinions and perspectives with other actors in the process. The commitment to work on the Vision implementation has been confirmed, including through the preparation of their own internal documents in line with accepted principles and goals. The following organizations, municipalities and businesses were among the most active stakeholders and forerunners in the Vision preparation.

Municipalities: Gorna Malina, Berkovitsa, Nikopol, Gulyantsi, Knezha, Pleven, Dolna Mitropolia, Levski, Belene.

Organizations: Municipal Energy Efficiency Network EcoEnergy, Sofia Energy Agency SOFENA, Climate Action Coalition Bulgaria, Bulgarian Electric Vehicle Association, Bulgarian Association of Municipal Environmental experts, , Environmental non-governmental organization "Za Zemiata", Center for Environmental Information and Education, Greenpeace Bulgaria, WWF Bulgaria, Zelenika Association, Bulgarian Environmental Partnership Foundation, Green Policy Institute.

Businesses: Institute for Zero Energy Buildings, EnEffect Center for Energy Efficiency, Bulgarian Solar Association, Bulgarian Photovoltaic Association.

Others: Political Party "The Greens"

See Annex for more details

Contact person: Georgi Stefanov, WWF Bulgaria, gstefanov@wwfdcp.bg



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REGIONAL VISIONS

Stakeholders involvement

Annex to D3.3 – Bulgaria



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

1. Stakeholders involvement in energy visioning

This is to summarize the involvement of stakeholders during energy visioning process in Bulgaria.

As agreed and implemented by the PANEL 2050 project, the model of stakeholder engagement consists of capacity building, stakeholder engagement and activation, and long-term energy planning.

PANEL2050 model for Central and Eastern Europe Sustainable Energy Network CEESEN



Bulgarian stakeholders were invited to participate in the long-term energy planning according to their organisational goals and expertise. Their knowledge was brought together and validated, resulting in a vision statement and a long term Energy Vision.

The project started by development of a stakeholder's network where each of the organisations has stated its own engagement field. More than 20 organisations were engaged in the first project stage and more were informed or involved by various project activities.

WWF BG team actively involved previously known contacts with potential stakeholders and used the project opportunities to attract new. The engagement process started with each of the stakeholders signing a letter of engagement. The stakeholders were supported by communication via mails and by direct phone calls explaining the logic and the goals of the project. Apart from that WWF BG is active on national level and during the last 10 years we've managed to support and build the capacity of the Climate Action Coalition in Bulgaria. The coalition works on and supports all of the climate and energy issues in Bulgaria with bottom-up approach.

After the engagement meetings and online communication, the visioning process started during the first project Regional Training for stakeholders in Bulgaria in December 2017. The participants discussed what aspects should be included in the Vision. The comments and concerns received during the meeting were further addressed in the preparation of the Energy Vision.

A second meeting was conducted in July 2018 where the final draft of the Energy Vision was presented and accepted as a final document, including the comments made by the PANEL 2050 project officer. This meeting was attended by the experts and forerunners

engaged during the project, most of them members of the Climate Action Coalition in Bulgaria – businesses, institutional representatives, scientific bodies and experts.

After comments from EASME the scope of the Energy Vision was changed from National to Regional level and the Vision was reworked for Northern Bulgaria with focus on the Region of Pleven.

A third visioning meeting was then held in the beginning of November 2018. During it forerunners from the Climate Action Coalition – Bulgaria and from other organizations gave their comments on the revised Energy Vision. Their comments were reviewed and the Energy Vision was adapted accordingly.

In the end of November 2018 a series of meetings with municipal stakeholders were held. Except for the municipal representatives, other stakeholder organizations were also present including the Municipal Energy Efficiency Network EcoEnergy. During the meetings the participants had the chance to give their feedback regarding the Energy Vision, they also contributed to the Energy Roadmap and pointed out specific activities and their wishes for Action Plans.

Between the visioning meetings and through the whole visioning process we engaged and consulted with more organizations and individuals outside of the mapped stakeholders that we asked about opinion and input on the Energy Vision.

Apart from the trainings and dedicated project meetings WWF BG team has participated in events of other partner organisations, including some of the stakeholders involved in PANEL 2050 energy visioning process. In such events we have presented our work and Drafts of the Energy Vision and the work under the project was presented at such events, the stakeholders declared as forerunners have done the same. This helped with the receiving of formal and informal comments from the stakeholders which comments were considered for the final version of the Energy Vision.

2. Regional stakeholders and forerunners network

Name	Operation	Type
Municipality of Berkovitsa	North-western Bulgaria, Montana region	Local government
Municipality of Gorna Malina	Central Bulgaria, Sofia region	Local government
Bulgarian School of Politics "Dimitri Panitsa"	Western Bulgaria, Sofia region	Political NGO
Political party Zelenite (The Greens)	Western Bulgaria, Sofia region	Political party
Capital Foundation	Western Bulgaria, Sofia region	Foundation
New Bulgarian University	Western Bulgaria, Sofia region	University
Energy Agency of Plovdiv	South-central Bulgaria, Plovdiv region	Energy Agency
Municipal Energy Efficiency Network "EcoEnergy"	Western Bulgaria, Sofia region	Municipalities network
Sofia Energy Agency - SOFENA	Western Bulgaria, Sofia region	Energy agency

Union of Bulgarian Black Sea Municipalities	Eastern Bulgaria, Burgas, Varna and Dobrich regions	Municipalities association
Bulgarian Solar Association	Western Bulgaria, Sofia region and Central Bulgaria, Gabrovo region	Enterprise association of photovoltaics
Bulgarian photovoltaic association	Western Bulgaria, Sofia region	Enterprise association of companies in the renewables energy sector
Persina Nature Park	North-central Bulgaria, Pleven region	Nature park
Association for Sustainable Urban Environment	Western Bulgaria, Sofia region	NGO
Za Zemiata Environmental Association	Western Bulgaria, Sofia region	NGO
The Centre for Environmental Information and Education	Western Bulgaria, Sofia region	NGO
Greenpeace-Bulgaria	Western Bulgaria, Sofia region	NGO
Climate action coalition Bulgaria	Western Bulgaria, Sofia region	Grassroots groups
Institute for Zero Energy Buildings	Western Bulgaria, Sofia region	Consultancy
Association of Bulgarian municipal ecologists	National wide	Association
Bulgarian Electric Vehicles Association	National wide	NGO
Center for Energy Efficiency "EnEffect"	National wide	Consultancy
Zelenika Foundation	National wide	NGO
Pleven Region	North-Western Bulgaria, Pleven Region	Local government
Municipality of Pleven	North-Western Bulgaria, Pleven Region	Local government
European Labour Institute	National wide	NGO
NEO – Bulgaria	National wide	NGO
National Association Zelena Sarnitsa	National wide	NGO
Foundation for Environment and Agriculture	National wide	NGO
National Institute in Geophysics, Geodesy and Geography, Bulgarian Academy of Science	National wide	Scientific institute
Ministry of Forestry, Agriculture and Food	National wide	Central Government

Bulgarian Environmental Partnership Foundation	National wide	NGO
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3. Overview of related communication / events

Date, place	Participants	Content / Results / conclusions
06.12. 2017, Sofia	Representatives of the Climate Action Coalition - Bulgaria	Starting the vision developing process. Discussion on key principles that should be included in the vision.
23-27.04. 2018, Budapest	Borislav Sandov (Political Party Zelenite) Milan Rashevski (Institute for Zero Energy Buildings)	A more developed draft of a national Energy Vision of Bulgaria is prepared with three key principles.
31.7. 2018, Sofia	Representatives of the Climate Action Coalition – Bulgaria and other forerunners	Finalisation of the Vision on National level in Bulgaria. Shortening the long version while keeping the previously agreed principles of the National Vision.
09.11.2018, Sofia	Representatives of the Climate Action Coalition – Bulgaria and other forerunners	Review of the revised Regional Energy Vision. Gathering comments from the participants and adapting the Energy Vision according to them.
21.11.2018, Gorna Malina	Representatives of the Municipality of Gorna Malina and of the Municipal Energy Efficiency Network EcoEnergy	Review of the revised Regional Energy Vision, Roadmap and Action Plans. Gathering ideas for the development of the Roadmap and concrete Action Plans.
26. 11. 2018, Berkovitsa	Representatives of the Municipality of Berkovitsa	Review of the revised Regional Energy Vision, Roadmap and Action Plans. Gathering ideas for the development of the Roadmap and concrete Action Plans.
28. 11. 2018, Pleven	Representatives of the Municipalities of Pleven, Gulyantsi, Levisi and of the Region of Pleven.	Review of the revised Regional Energy Vision, Roadmap and Action Plans. Gathering ideas for the development of the Roadmap and concrete Action Plans.
29. 11. 2018, Belene	Representatives of the Municipalities of Belene and Nikopol	Review of the revised Regional Energy Vision, Roadmap and Action Plans. Gathering ideas for the development of the Roadmap and concrete Action Plans.

To be filled by WP leader	
Attendance sheet(s) was/were collected	
Excel list 'Stakeholder Engaged in PANEL 2050' was updated and sent to WP leader	

ENERGY VISION

Region: Estonia
English version

prepared by
Estonian University of Life Sciences

PANEL 2050 – Partnership for New Energy Leadership 2050
Deliverable 3.3

Date: May 2018



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

Vision Statement for 2050

The main goal for 2050 is to produce at least 80% of heat and at least 50% of electricity from renewable energy sources. This will be achieved by promoting higher renewable energy production that will be supported by the improvement of energy efficiency throughout all sectors.

By 2050 we aim to:

- Most of energy in Estonia is produced from renewable sources.
- Using modern and green technologies, Estonia will become an energy exporter in the established Northern-Baltic energy market.
- Estonia's energy independence and securing it in the long term will become the main foundation of economic welfare of the country's residents, competitiveness of local businesses and Estonia's energy security.
- The most economically feasible option for consumers is the combination of renewable energy based and energy-efficient solutions.
- Free and reliable information about energy saving and sustainable consumption possibilities is easily accessible and known to consumers.
- Estonia has enough renewable energy and energy efficiency specialists with necessary skills and knowledge. Everybody has access to the required courses and there are active advisory services available on fuel and energy savings measuring and management.
- Estonia has filled all obligations from relevant EU directives. National statistics and other data enable us to monitor the effect of planned measures on fuel and energy consumption and assess the related environmental impact.
- The consumers and energy producers are interested in carrying out energy saving projects. The necessary funding opportunities are sufficient, including for small-scale projects.

Vision Description

We work to maintain and even enhance Estonia's energy independence in the conditions of stricter energy and climatic policies. The goal of Estonia's market based energy policy is to secure our energy independence, secure supply and competitive energy prices, which are all among the main prerequisites for economic development.

However, more than 3/4 of total electricity is generated in the thermal power plants that use oil shale as the main fuel, making Estonia one of the most carbon-intensive energy producers in EU. The share of renewables has been on the rise in the past ten years – in 2016, 28,9% of the energy consumed in Estonia was generated from renewable sources. Electricity production from renewable sources in 2016 was 1414 GWh.

Producing 100% of energy from renewable sources is based on diverse and disperse production portfolio from local resources and assures energy security of the country. Hindering the energy consumption in Estonia via increased energy efficiency and energy savings measures and increasing energy production from renewable sources will enable us to:

- Stop the emission of 15 mln tons of CO₂ by 2030
- Increase the buying power of households by 368 mln Euros due to reduced expenses on energy.
- Increase in GDP in the period 2017-2030 on average 2,2% (500 mln Euros) per year

- Contribute to cleaner environment, sustainable development and healthier population by wider deployment of renewable energy.

Addressed barriers

Main barriers that have to be overcome when implementing current vision are:

- Secured (fossil) energy supply impedes innovation and progress
- Political unwillingness to transition away from oil-shale based energy as the regional political stability could be threatened when jobs in the fossil energy based industry decrease that is concentrated to North-Eastern Estonia and consists of mainly Russian-speaking population.
- No significant alternative resource (i.e. hydro) for balancing
- Legally binding development plans in energy sector are not followed consistently
- Development of subsidised energy system is not sustainable and hinders necessary investments
- Project-based R&D and projects are often financially not sustainable in long-term.
- Low domestic investment capacity of public and private sector
- Objective technological know-how is insufficient, private sector holds lot of the know-how
- Limited human capacity in sectorial development participation

Required data for scenario development

Estonia has very good system of gathering statistical information annually, so no added information gathering activities would be needed for this work to be carried out. Only input that would be necessary for the feasible and realistic roadmaps and action plans is regular involvement of the core stakeholders in the field.

Involvement of stakeholders

Current vision was based on a round table held in Tartu in Estonian University of Life Sciences on March 1, 2018. Participants for the round table were from following institutions:

- City of Tartu
- Elva municipality
- Estonian Renewable Energy Association
- Foundation Private Forest Centre
- Tartu Regional Energy Agency
- Centre of Bioeconomy of Estonian University of Life Sciences
- Centre of Renewable Energy of Estonian University of Life Sciences

Following meetings were conducted with the creators of the Estonian Renewable Energy 100 development plan to improve the initial vision.

For more information see Annex

Contact person: Elis Vollmer, Estonian University of Life Sciences, elis.vollmer@emu.ee



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REGIONAL VISIONS

Stakeholder involvement

Annex to D3.3 – Estonia



CENTRAL EASTERN EUROPEAN
SUSTAINABLE ENERGY NETWORK

1. Introduction

This Annex aims at giving an overview of the stakeholder involvement during the process of developing Estonian regional energy vision.

Stakeholder Engagement is an integral part of the PANEL Model. The model consists of interrelated components of capacity building, stakeholder engagement and activation, and long-term energy planning.

PANEL2050 model for Central and Eastern Europe Sustainable Energy Network CEESEN



PANEL Stakeholder Engagement is taking a strategic approach for engaging the community to the local energy management. Stakeholders are invited to participate in the long-term energy planning, bringing their knowledge and validation into the process. They are supported by engagement experts and capacity building activities.

For Estonian case, the approach for involvement was taken on national level, instead of regional, as all the legislation as well as majority of production grids / relevant entrepreneurs are on national level in Estonia. In addition, Tartu region would have been only 10% of Estonia and thus with very small reach, compared to 1.3 mil people, which would have been similar size to most of other regions being targeted in the project. To choose the best course of action we conducted preliminary discussion with key stakeholders and municipalities and the result was that it would make sense to do the vision on National level and connect it to the Renewable Energy 100% movement and to help that take stronger two-way effect and reach the local actors.

2. Stakeholders involvement in energy visioning

Since the beginning of the project we have been developing wide stakeholders network, with narrowing it down to most active key actors in the field, who would then participate in the visioning and roadmapping process. The initial idea was to cover as many stakeholders as possible so that the actual activities of visioning, roadmapping and action plans could be narrowed down to the people actually willing to contribute their time and energy.

During our project we have reached out to more than 62 key stakeholders via direct communication (e-mails, phone calls, meetings). In addition, 288 stakeholders from very diverse selection of organisations (research, entrepreneurs, public bodies, NGOs etc.) have participated in our regional trainings, held during winter 2017-2018. With some of them we had previous cooperation, and some were newcomers.

The training topics for the Estonian trainings were chosen based on an online questionnaire, carried out during spring 2017 to map the interests and needs of our stakeholders. The supportive topics, that are the core content of the PANEL2050 curriculum found little interest. So, we concluded that doing trainings only on soft topics might not get wanted attention among our target groups so we decided to join them together with some technical presentations and introducing innovative developments in the sector:

- Innovation in renewable energy, cooperation with R&D and entrepreneurs
- Financing renewable energy projects
- EU financing mechanisms for sustainable energy projects aimed at local governments
- Project writing for local governments
- Biomethane as transport fuel, including policy support and funding mechanisms
- Planning energy management, creating sustainable energy roadmaps

This wide selection of stakeholders was narrowed down to a core group of 12 people with whom we carried out the visioning workshop on March 1, 2018. The selection of further workgroup was on voluntary basis, composing of people who are willing to give their time and effort in these activities.

1. Aare Vabamägi
2. Allan Allik Elva vallavalitsus
3. Alo Allik EMÜ
4. Antti Roose TREA
5. Elis Vollmer EMÜ TEK
6. Irje Möldre SA Erametsakeskus
7. Jaanus Tamm Tartu LV
8. Kaspar Alev Tartu LV
9. Katrin Kepp EMÜ biomajanduse keskus
10. Neeme Kärbo TREA
11. Rene Tammist ETEK
12. Maria Habicht ETAG

After the initial meeting they were involved in continuous work in improving the vision and developing it to a road map for Estonia, that is in concordance with our main legislation and bottom-up movement of Renewable Energy 100%, that aims to transfer Estonia 100% onto renewable energy. The added value would be joining energy efficiency increase, renewable energy production and climate change mitigation together with transition from current 85% oil-shale energy in a focused and measurable way and to launch a movement that would cover all the communities. The Renewable energy association, the wind energy association, the solar energy association and Estonian district heating companies' association have expressed their support towards our activities.

Two member organisations in this core team also participated in the forerunner bootcamp in Hungary in May 2018 – Estonian Renewable Energy Association and Foundation Private Forest Centre

Some of the organisations in the core team are the ones receiving the action plans for following the vision and roadmap in October 2018. The whole concept will be introduced during the annual renewable energy conference in Tartu that usually brings together ca 200 actors in the field of energetics.

3. Overview of related communication / events

Following table gives overview of the main stakeholder meetings we had during the planning process. In addition, we had communication via phone calls whenever needed.

<i>Date, place</i>	<i>Participants</i>	<i>Content / Results / conclusions</i>
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15.09. 2017, Tartu	<ul style="list-style-type: none"> - Neeme Kärbo (TREA) - Elis Vollmer (EMU) - Maria Habicht (ETAG) - Jaanus Tamm (City of Tartu) - Mihkel Annus (Estonian renewable energy association) - Madis Tilga (Nordic Council of Ministers) - Liisa Ruuder (ministry of economics) - Peep Pltk (Graanul Invest) - Indrek Jakobson (Foundation Estonian Private Forest Centre) 	<p>Meeting with the aim of introduce CEESEN regional trainings and PANEL2050 roadmapping process and brainstorm about the best approach to take in Estonia.</p> <p>Outcome was more detailed training plan and action plan for visioning and roadmapping process.</p>
02.11. 2012, Tartu	<ul style="list-style-type: none"> - Maria Habicht (ETAG) - Elis Vollmer (EMU) - Neeme Kärbo (TREA) 	Meeting to evaluate the current activities and adapt the trainings plan of needed
2.02. 2018, Tartu	<ul style="list-style-type: none"> - Maria Habicht (ETAG) - Elis Vollmer (EMU) - Neeme Kärbo (TREA) - Rene Tammist (Estonian renewable energy association) 	Meeting to plan the activities for visioning and roadmapping activities and formulating the supporting training plan.
01.03. 2018, Tartu	<ul style="list-style-type: none"> - Aare Vabamägi - Allan Allik Elva vallavalitsus - Alo Allik EMÜ - Antti Roose TREA - Elis Vollmer EMÜ TEK - Irje Möldre SA Erametsakeskus - Jaanus Tamm Tartu LV - Kaspar Alev Tartu LV - Katrin Kepp EMÜ biomajanduse keskus - Neeme Kärbo TREA - Rene Tammist ETEK - Maria Habicht ETAG 	Capacity building on roadmapping and drafting the regional vision concept
20.07. 2018, Tartu	<ul style="list-style-type: none"> - Maria Habicht (ETAG) - Elis Vollmer (EMU) - Neeme Kärbo (TREA) - Mihkel Annus (Estonian renewable energy association) - Tuuliki Kasonen-Lins (Estonian wind energy association) - Andres Meesak (Estonian PV energy association) - Aivo Lokk (Utilitas OÜ) 	Drafting the Roadmap for Estonia, relevant scenarios for development + discussion on action plans
24.08.2018, Tartu, Skype	<ul style="list-style-type: none"> - Maria Habicht (ETAG) - Elis Vollmer (EMU) - Neeme Kärbo (TREA) - Mihkel Annus (Estonian renewable energy association) - Tuuliki Kasonen-Lins (Estonian wind energy association) - Andres Meesak (Estonian PV energy association) - Aivo Lokk (Utilitas OÜ) 	Drafting the Roadmap for Estonia, relevant scenarios for development + discussion on action plans

To be filled by WP leader	
Attendance sheet(s) was/were collected	x
Excel list 'Stakeholder Engaged in PANEL 2050' was updated and sent to WP leader	x



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