

# RENERGY

## Regional Strategies for Energy Conscious Communities

### Overview













Funded by the European Union's Regional Development fund, RENERGY brings together energy conscious public authorities and research institutions from across Europe. The project aims to tackle climate change through close interregional cooperation. It will give partners the opportunity to share ideas and resources, adding an integral local dimension to the pursuit of national and European green targets.

The project is about more than reducing carbon emissions. Building on the three thematic pillars of; community involvement, policy-making, job creation/business growth, it will use case studies and "Energy Labs"\* to learn and develop comprehensive strategies, intended to transform the budding European green economy from the ground up.

**Total Budget: EUR 2,210,186**  
**78% ERDF funded**

### Participants

The partnership consists of 12 partners from 10 countries, including 8 Local Authorities.

-  Province of Potenza, Italy (Lead Partner) - [www.provincia.potenza.it](http://www.provincia.potenza.it)
-  National Research Council of Italy CNR-IMAA, Italy - [www.imaa.cnr.it](http://www.imaa.cnr.it)
-  City of Tulln, Austria - [www.tulln.at](http://www.tulln.at)
-  INTELI – Intelligence in Innovation, Portugal - [www.inteli.pt](http://www.inteli.pt)
-  City of Worms, Germany - [www.worms.de](http://www.worms.de)
-  Durham County Council, UK - [www.durham.gov.uk](http://www.durham.gov.uk)
-  The Association of Municipalities Polish Network "Energie Cités" (PNEC), Poland - [www.pnec.org.pl](http://www.pnec.org.pl)
-  KTU - Kaunas University of Technology, Lithuania - [www.ktu.lt](http://www.ktu.lt), [www.apini.lt](http://www.apini.lt)
-  Municipality of Avrig, Romania - [www.primaria-avrig.ro](http://www.primaria-avrig.ro)
-  Municipality of Slagelse, Denmark - [www.slagelse.dk](http://www.slagelse.dk)
-  Municipality of Szentes, Hungary - [www.szentes.hu](http://www.szentes.hu)
-  Building for the Future Ltd, UK - [www.bftf-ltd.com](http://www.bftf-ltd.com)

### \*Energy Labs

Energy labs, an innovation of the RENERGY project, are new platforms designed to encourage local improvement by ensuring close cooperation between energy experts, producers/suppliers and local authorities. [www.renergyproject.eu](http://www.renergyproject.eu)

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# RENERGY Newsletter

## Message from the Lead Partner

After almost three years of working together in developing more efficient energy policies and strategies at the local and regional level, the RENERGY project is reaching the end of its implementation phase. Time has therefore come for a general assessment of the project, together with an evaluation of the general implementation of activities, of the level of efficiency/effectiveness, as well as the quantity and quality of the produced outputs.

All of the work completed was exhibited during the successful RENERGY Final Conference, held in the European Parliamentary Building in Brussels on 15-16<sup>th</sup> October 2014. Many highly qualified speakers from international organisations appeared together with many RENERGY partner representatives. In particular, speakers included Biljana Markova (UNISDR Programme Officer), Benoit Dalbert (Joint Technical secretariat – INTERREG IVC Programme) and Piernicola Pedicini MEP.

The Final Conference showcased case studies and best practices that have been developed and exchanged during the project term, along with a Model Implementation Plan that has been based on successful case study reports. The event aimed to foster the creation of international cooperation networks and partnership to participate in future initiatives on the project themes.

Regarding the interregional cooperation, it has been stated that, concerning the scientific content, very good cooperation has been established among the partners that participated enthusiastically in the project. This lively involvement has led to significant advancements in terms of methodologies and community awareness fostering an improvement of life standards in the partners' countries and the participation in possible future initiatives.

Moreover, the international cooperation has provided a lot of education and inspiration. The different cultures and ways of working in the public/political systems sometimes have been alike, and other times differed a lot. This has given the opportunity to examine alternative ways of thinking and acting. Together with the different resources and skills these could be applied locally.

During RENERGY's implementation, beyond the originally foreseen content-related activities, several partners carried

out additional activities, eg. participation at and/or organisation of content oriented meetings to generate and share knowledge and experience, as well as preparation of additional thematic articles.

Perhaps the most important additional activity of the project can be considered the pilot action which has been approved by the JTS as CP4 in September 2014. The overall objective has been to increase the awareness of operators and local communities interested in management/use of public buildings concerning energy consumption through 'real-time data' allowing experiment and evaluation of energy saving and energy consumption rationalisation.

The idea has been born because the implementation of thematic activities showed a substantial advancement in the achievement of the expected results. Given such a positive trend, enhanced by the political commitment, the good level of partners' interaction in the exchange of good practices, it seemed appropriate to include an additional activity with highly operative aim: to experiment innovative tools and approaches within the proposed Implementation Plan.

The Pilot Action has been designed to evaluate the effectiveness of innovative ICT applications for real-time monitoring energy consumption of public buildings in accordance with the well-known RENERGY three pillars strategic approach to develop tools to support decisions, Policy Making, raising awareness of local communities to energy efficiency, Community Involvement, and with positive impacts in the field of Market Uptake.

As Project Coordinator, Potenza would like to make a special thanks to all of the partners for the very good work done together. The RENERGY strength stayed in willingness to reach the best possible goals. The very good personal relationships which were born during the three years of project, could be surely considered as the starting point for possible future collaborations and opportunities of development, always looking in the same direction and for the same target: a safer and sustainable world of new people with resilient behaviour.

Enjoy the reading!

Alessandro Attolico,  
Renergy PM Coordinator

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**European Union**  
European Regional Development Fund





# Introducing Avrig

Energy has become a strategic factor in global politics; a vital component and cost factor for economic development and the progress of society as a whole, generating a series of major concern worldwide. The European Commission considers it essential for the EU to promote a common energy policy based on energy security, sustainable development and competitiveness.

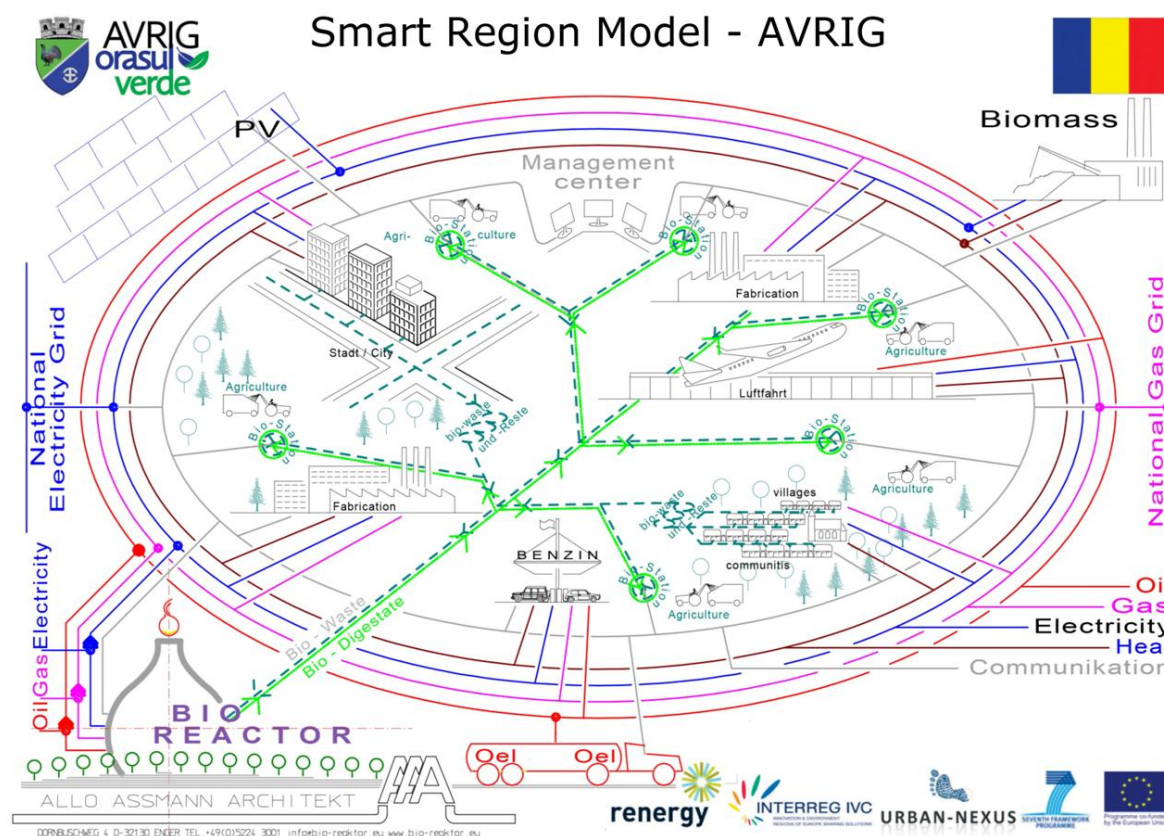
The purpose of EU energy policy, and therefore Romania's, is providing reliable and affordable energy reserves that aren't harmful to health or the environment. Increasing energy demand worldwide has demonstrated the need to identify and implement ways to reduce energy and production. In fact, the world has steadily improved energy efficiency particularly through renewable energy, which is the energy source with the fastest growth rate.

Avrig city's vision is to become one of the reference centres for renewable energy by 2020 and energy independent by 2030. Avrig aims to become an exporter of energy by 2020, using a smart grid and renewable energy infrastructure. It encourages investment incentives to improve energy efficiency throughout the chain: resource - production - transport - distribution - consumption. Avrig local energy priorities contained in the program include; energy production from renewable energy sources, development of energy infrastructure, developing the concept of a "smart city" and initiatives on smart grids,

production of energy crops, development of heat supply units, improving the efficiency of heating (including thermal insulation of buildings), rehabilitation of transmission and distribution, environmental protection and conservation and waste management.

Located in the centre of Romania, in southern Transylvania, 25 km from the municipality of Sibiu, Avrig benefits from some of the best natural resources in Romania: solar, wind, hydro and biomass. The largest investments are proposed in the field of solar and biomass. Biodegradable waste and biomass from the Avrig region will be collected and in bioreactors will be converted into biogas.

Mr. Klingeis G. Arnold, Avrig's Mayor, said: "The SMART Avrig Region Project will be implemented by 2030, with the first pilot plant now operational. Avrig, at present, produces green energy, miscanthus, biomass plantations, biomass recovered from high school Mirsa and we have installed three solar plants that produce hot water for two Avrig Kindergartens and the City Hall. Also Avrig received a national pilot program offered by the company Electrica, in which the Avrig community had its meters replaced with smart meters. All of the results from the RENERGY project will be implemented as a platform for monitoring consumption and renewable energy products at the Avrig level and centralised in the other cities in Europe."



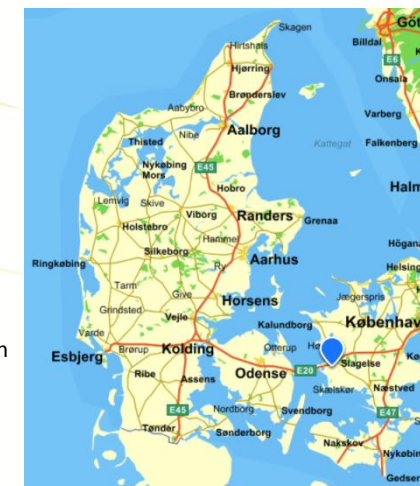
# Introducing Slagelse

## Fulfilling your ambition takes involvement

The Danish Municipality of Slagelse is one of the partners in the RENERGY project. Situated in the south western corner of the island of Zealand, the municipality has approximately 180 kilometres of coastline, is rich on farmland and has a diversified and illustrious nature sprinkled with historic gems.

Slagelse has taken energy-saving policy to the community, as well as small and medium sized enterprises, and functions as a case study for community involvement. With a set goal of reducing CO<sub>2</sub> emissions by 20 per cent before 2020, it is crucial to involve many stakeholders in order to be able to reach this goal.

**Acting role model**  
Setting ambitious goals for reducing energy consumption is one thing; it is another matter to achieve them in reality. The municipality knew it could not implement the policy themselves and therefore set out to act as a role model to its 75,000 inhabitants. Besides contributing to the fulfilment of their goal, the aim was to encourage citizens to participate in reaching the goals.



Municipal buildings are currently being energy renovated and approximately 17 schools will have solar cells installed. Larger municipal buildings will in future have a trained person responsible for monitoring the energy and water consumption and act on alerts if consumption exceeds the accepted levels.

**Community involvement**  
Slagelse doesn't have major cities or gigantic housing estates. Instead, the majority of the population is spread out in villages, homesteads and farms. Therefore, it has been crucial to identify what ways the population could be reached.

As part of the Climate Plan (2011), the municipality initiated a project called Energy Village. The aim of the project is to learn how a municipality can support villages towards a more climate friendly development, including reducing CO<sub>2</sub> emissions.

Energy Village is not the only initiative stemming from the Climate Plan. Slagelse also offered its citizens one hour of free advice from independent specialists on a choice of energy sources, insulation of existing houses or insulation and heating in new buildings. The initiative acts as an incentive to save money on energy consumption and creates awareness regarding renewable energy sources.

### Involving the world of private enterprise

Green Business Development is another initiative taken by Slagelse to involve their stakeholders. Local businesses within the building and housing sectors are encouraged to create a development towards green energy solutions. The aim is threefold and seeks to enable the businesses to:

1. Meet the citizens' demands for energy efficient solutions
2. Create this same demand in the community
3. Make bids on larger building projects using the knowledge and competencies necessary to provide sound energy efficient solutions

### A surprising and uplifting development

The initiatives taken by the municipality have been received in a positive spirit throughout the community. Four private businesses established an Energy Network involving the building industry, consultants and the financial sector. They have set up criteria for participation and their aim is to share knowledge about sound energy solutions, to cooperate across professions and to strengthen the cooperation between builders and the municipality.

### Energy Village

The Energy Village project is designed to learn how municipalities can support villages towards a more climate friendly development, including reduction of CO<sub>2</sub> emissions. Villages were invited to enter the project and the village of Flakkebjerg and the island of Omø applied. They are now fully engaged in the project that ran from 2011 to the end of 2013. The themes and activities involve renewable energy, electric appliances, transportation, water, waste and food.

### Facts about the Municipality of Slagelse

- 1288: Municipal charter given to the town of Slagelse
- 2009: Joined the Convent of Mayors
- 2011: Finalised Climate Plan and Sustainable Energy Action Plan
- 2012-15: Participate in the EU financed Renewable Energy and Energy Efficiency in Zealand (REEEZ) project (energy efficiency and renewable energy in public buildings)









# RENERGY Final Conference

After almost three years of working together in developing more efficient energy policies and strategies at local and regional level, the RENERGY partners assembled, along with politicians and key local players, for the Final Conference in Brussels on 15th October 2014.

The overall aim of RENERGY is to improve the effectiveness of the strategies for the sustainable development of local communities, demonstrating the importance of an integrated bottom-up approach to take local community needs, demands, cultural and infrastructural characteristics into account, empowering local authorities and providing them advanced decision support tools for the implementation of sustainable development policies.

The project has enabled European partner countries with different energy efficiency and renewable energy backgrounds a unique opportunity to increase their knowledge, to promote economic change and social cohesion, as well as disseminate and implement good practices and experiences that focus on relative EU policy issues.

The Final Conference showcased case studies and best practices that have been developed and exchanged during the project term, along with a Model Implementation Plan that has been



based on successful case study reports. Also in attendance were guest speakers from the European Commission, who support the overall theme of the project and provided an official perspective.

The day had the format of a morning plenary session and three parallel afternoon workshops based upon the project pillars and with a focus on related topics. Besides illustrating the main achieved results, the event aimed to foster the creation of international cooperation networks and partnership to participate in future initiatives on the project themes.

## Charming Hotel Areias do Seixo (Portugal)

Open to the public since 2010, the Charming Hotel Areias do Seixo, located in the municipality of Torres Vedras (Portugal), is a benchmark in eco-tourism, both nationally and internationally. Although the initiative is private, this investment had the support of Portuguese Tourism (Turismo de Portugal) through an agreement signed between Areias do Seixo and the banking sector, as well as the support of QREN (Innovation Incentives System).

This project was born from a desire to create a unique place where customers from around the world can be welcomed in familiar surroundings with complete respect and harmony with nature. The creation of a low density hotel with a reduced land cover rate, enabling the development of nature and sustainable tourism, with a strong awareness focus, were the main conceptual premises. The creation of a charming and environmentally conscious unit came to fill a gap in the regional/national tourism supply.

Areias do Seixo is actually an exemplar construction in terms of micro-local production and innovative systems for the management and control of resource consumption. Based on the principles of sustainable tourism, its construction and operational phases were based on the concept of self-sufficiency through the local production systems and energy efficient management of resources (photovoltaic, solar thermal, geothermal, automation consumption and savings associated, gray water recovery, etc). Even at the micro-level of energy production, the unit is a representative core with the installation of 36 PV panels of 240W, installed on 2 solar trackers, with a total production capacity of 8640W.

Since its opening, some good results are visible. In 2011, the production of energy obtained from renewable sources was 16.700 kWh, which represents a saving of €1,837 per year. The ambitions are clear; the hotel intends to achieve 35 per cent energy auto-consumption this year, reaching a record of 337,410 kWh in terms of electricity (indirect) consumption (lighting, HVAC, general functioning of equipment) through renewable primary sources and 16,435 kWh in terms of direct consumption from renewable sources.

To improve the management of these results and involve its own employees and guests, the hotel created the Eco Clock, an

innovative integrated automation and multimedia application that allows the automation and control of the electricity, water and sewage infrastructures from the hotel unit. This solution allows the generation of management information of all equipments and facilities of the unit using energy resources as well as monitoring the efficiencies obtained.

From its architectural language, that also reflects the predominance of environmental choices and building solutions with low visual impact and complete integration with the surrounding landscape, to its awareness role the local community, employees and guests, the Charming Hotel Areias do Seixo is one of the best practices for regional and national tourism.

For the future, the plans of the unit seem to be focused on activities with a greater social impact in the local community, engaging local environmental organisations for the development of contents on tourism, nature aspects and environmental practices and activities to guests in order to reduce their ecological footprint.



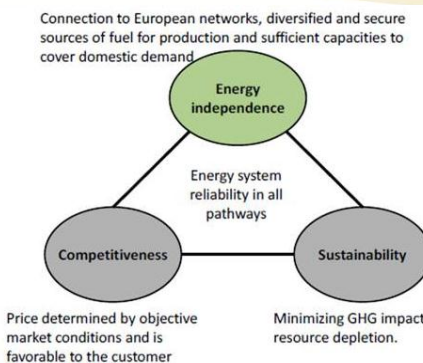
# Challenges in Energy sector in Lithuania

Lithuania is facing challenges in the energy sector in three main dimensions defined in the National Energy strategy:

- Energy independence
- Competitiveness
- Sustainability of the energy sector

This situation has been determined by historic and political circumstances as well as by scarce internal energy resources.

Most of the fuel resources used in Lithuania are imported. After the shutdown of Ignalina Nuclear Power Plant (NPP) in 2009, the country is not able to satisfy its internal electricity demand. The Lithuanian electricity network is not connected to the European electricity system, therefore electricity can only be imported from a limited number of countries.



**Fig. 1. Principles of energy system development (National Energy Independence Strategy, 2012)**

**Energy independence:** After the shutdown of Ignalina NPP, Lithuania's energy system became highly dependent on electricity import and fossil fuels. Lithuania is isolated from the EU energy systems; there are no electricity interconnections with Continental Europe and the country is dependent on the sole external gas supplier. Consequently, Lithuania imports half of its consumed electricity from neighbouring countries, with most of the remainder of electricity generated by using fossil fuels supplied by a single source.

This situation creates additional threats to consumers. Lithuanian energy consumers are more vulnerable to energy supply interruptions or big price fluctuations than those in the countries possessing diversified and self-sufficient energy systems.

**Competitiveness:** The energy sector is not fully competitive. The country's energy market, pursuant to the 3<sup>rd</sup> EU energy package, is being made more competitive through implementation of the ownership unbundling in the electricity and gas sectors. In the electricity sector the ownership of electricity generation is being unbundled from transmission. In the gas sector the ownership of gas transmission and supply is being separated.

**Sustainability:** The energy sector faces sustainability challenges too. Energy intensity per unit of GDP is 2.5 times higher than the EU average. This reveals vast untapped potential for energy efficiency, especially in heating and transport sectors.

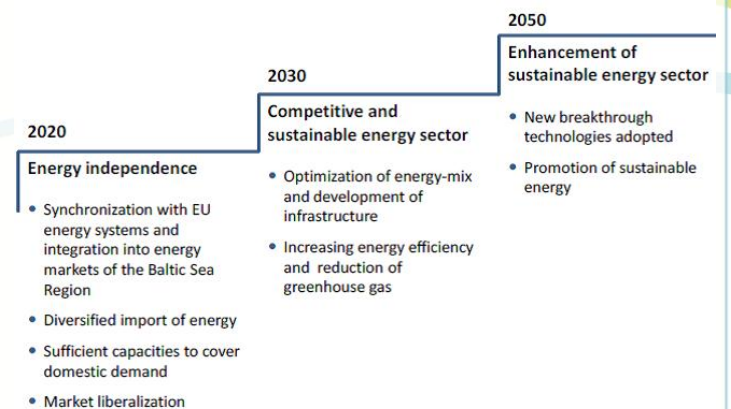
The vision of Lithuanian energy sector is based on all three main principles. However, in different periods of time (2010-2020, 2020-2030, 2030-2050) the focus will fall on different principles.

Asynchronous implementation of a different aspect of the strategy could cause some threats to the Lithuanian energy sector. Sustainability is supposed to be the main aspect of all European energy systems therefore it should be the integral part of the energy system development. When implementing the objective of a first dimension - sufficient capacities to cover domestic demand - unsustainable decisions could be made to cover those needs, if sustainability aspects were not integrated in the process.

Lithuania is a young independent country, having retrieved independence 24 years ago. The main problem of the country for sustainable development is energy autonomy. There is a serious situation in the field of energy security that is highly complicated or nearly impossible to deal with on its own. The other key problems include the long-term reliability of natural gas supply, construction of the prospective new nuclear power plant and integration of the electricity system into that of the EU.

By signing the Covenant of Mayors, the City of Kaunas committed both to implementing the Sustainable Energy Action Plan in the areas falling within the scope of their competence and to reducing the CO<sub>2</sub> emissions by at least 20 per cent on their territorial units by 2020. The idea and actions of the Covenant of Mayors are under implementation:

- The Intergovernmental Panel on Climate Change has confirmed that climate change is a reality and that the use of energy from human activities is largely responsible for it
- Unilateral commitment to reduce its CO<sub>2</sub> emissions by 20 per cent by 2020, as a result of a 20 per cent increase in energy efficiency and a 20 per cent share of renewable energy sources in the energy mix
- The EU commitment to reduce emissions will be achievable only if local stakeholders, citizens and their groupings share it



**Fig. 2. Long term vision of Lithuanian energy sector (National Energy Independence Strategy, 2012)**