

RENEWABLE ENERGY IN ROMANIA SUPPORTED BY EEA GRANTS

THE EEA GRANTS – IN GENERAL

The EEA Grants represent the contribution of Iceland, Liechtenstein and Norway to reducing economic and social disparities and strengthening bilateral relations with 16 EU countries in Central and Southern Europe.

PURPOSE OF THE GRANTS

Through the European Economic Area (EEA) Agreement, Iceland, Liechtenstein and Norway are partners in the internal market with the 28 EU member states. Ever since the establishment of the EEA Agreement in 1994, Iceland, Liechtenstein and Norway have provided funding to reduce social and economic disparities in the EEA. The expansions of the EU in 2004 and 2007 brought a 20% increase in the EU's population, but only a 5% increase in GDP. The EEA Grants, are helping to reduce disparities. The funding is targeted on areas where there are clear needs in the beneficiary countries.

PROMOTING COOPERATION

Strengthening bilateral relations is the primary objective of the EEA Grants. The enhancement of cooperation, knowledge exchange and partnerships between organisations in the donor and beneficiary countries is widely encouraged for mutual benefit and strengthening of the programme and project's quality. Funds are also set aside in all beneficiary countries to support networking and foster project partnerships on initiatives of mutual interest.

THE GRANTS

For the period 2009-2014, €1.798 billion has been set aside under the Grants. The EEA Grants 2009 – 14, €993 million are jointly financed by Iceland, Liechtenstein and Norway, who contribute according to their size of their economy.

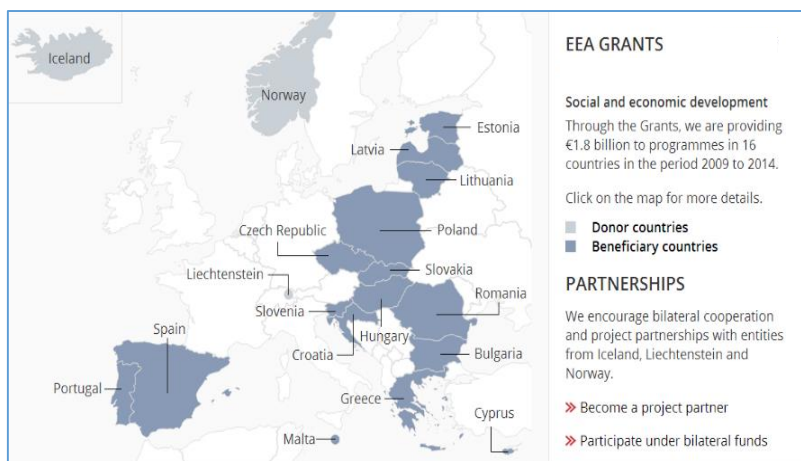


The Hungarian State Secretary for Energy, Attila Imre Horváth, the Icelandic Foreign Minister Gunnar Bragi Sveinsson, the Norwegian Ambassador Tove Skarstein and Guðni A. Jóhannesson, Director General of the Icelandic Orkustofnun, at the launch of the EEA Grants in Hungary 2013.

KEY AREAS OF SUPPORT

Funding is channelled through 150 programmes in the 16 beneficiary countries. Country allocations are based on population size and GDP per capita, making Poland the largest beneficiary state, followed by Romania, Hungary and the Czech Republic. Each beneficiary country agrees on a set of programmes with the donor countries, based on national needs and priorities and the scope for cooperation with the donor countries. All programmes must adhere to standards relating to human rights, good governance, sustainable

development and gender equality. In addition, the individual Memorandum of Understanding with each country lays down the guidelines and specifies any special concerns for individual programmes. Inclusion of minorities and improving the situation of the Roma are examples of special concerns. In the current period, environment and sustainable development



(including renewable energy) is the largest sector, and includes substantial funding targeting climate change and green industry innovation, with a requirement of 30% allocation to green project of the beneficiary budget. Other key areas of support are health, education, civil society, research and scholarships, justice and social dialogue.

SUPPORTING GEOTHERMAL ENERGY DEVELOPMENT

Hungary, Portugal and Romania will cooperate with the Orkustofnun in Iceland to exploit the potential of geothermal energy. Increasing renewable energy in the energy mix is an effective way of increasing energy security and savings for the economy, making the sources of energy more diverse and mitigate climate change.

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€135 million has set been aside in eight countries for increasing energy efficiency and the share of renewable energy in energy use, in line with the EU/EEA, Europe 2020 targets. Renewable energy comes in many forms. Both Iceland and Norway has had great success with hydroelectric energy and Iceland is a pioneer in harnessing geothermal energy. According to the Orkustofnun in Iceland, geothermal energy sources account for 68% of Iceland's primary energy use.

SHARING EXPERTISE

Funded by the EEA Grants, Hungary, Portugal and Romania will work together with the Orkustofnun (National Energy Authority of Iceland) to develop and exploit the potential of geothermal energy in their countries. With its expertise in securing long-term sustainable use of geothermal resources, Orkustofnun will, as a Donor Programme Partner, offer assistance in creating, implementing and monitoring geothermal resource management plans in these three beneficiary states. This cooperation aims at securing long term sustainable yield of the geothermal resource.

INCREASING RENEWABLE ENERGY PRODUCTION IN ROMANIA

Why is the programme needed?

Europe's demand for energy is increasing in an environment of high and unstable energy prices. As a result, increased renewable energy production needs to be a driving force for a sustainable development of the European economy. In the decade 2000 - 2010, Romania's main activities of national decision makers focused on economic restructuring and introduction of market economy mechanisms. At the same time, exploitation of renewable energy sources (RES) was not prioritised and a number of RES plants were destroyed, fell into disrepair or were running inefficiently.

52% of Romania's energy demand is coming from coal, gas and oil, with a further 20% from nuclear power. Renewable energy solutions, mainly hydropower, constitute ca. 27% of the country's total energy production. The EU aim is to get 20% of its energy from renewable sources by 2020. The Romanian government therefore developed a National Renewable Energy Action Plan (NREAP) in 2010 to increase the share of renewable energy sources in Romania from 27% to 38%, and the RONDINE programme (the EEA Grants) will contribute towards that target.



Jónas Ketilsson, Project Manager from NEA Iceland, the Icelandic Minister of Industry and Commerce, Ragnheiður Elin Arnadóttir and Adrian Gearap, President EFA.

The programme will simultaneously address the need to upgrade existing small scale hydropower plants in order for them to operate in an effective manner, and the need to establish new hydropower facilities and geothermal heat plants in order to replace fossil fuel plants. The programme will be important for restoring the renewable energy sector and providing pilot projects and best practice cases.

RONDINE the Renewable Energy Programme

On July 28, 2010, it was signed the Agreement between the European Union and the Governments of Norway, Iceland and Liechtenstein for EEA Grants 2009 - 2014 on the assistance granted by them on the following period. Through this mechanism, Romania will receive financial assistance on several priority sectors.

On Tuesday, November 26, 2013, the **RONDINE** (RO 06) Renewable Energy Program was launched in Romania. The aim of the RONDINE Program which is based on the EEA Grants 2009 - 2014, is sustainable use of natural resources and reducing emissions of greenhouse gases through the use of renewable energy - hydro and geothermal potential. The program is operated by Environmental Fund Administration - EFA.

The amount of the grant related to the project, including the national contribution, is € 8.387.406 with an additional € 4.270.000 to be given by the Donor States, or total € 12.657.406.

Financial allocation for the RONDINE shall be:

- 85 % – EEA Grants 2009-2014
- 15 % – Romania state budget (Environment Fund)

Implementations

The programme consists of two open calls.

- One call for proposals for the construction or refurbishment of three or more small scale hydropower plants (up to 10 MW)
- One call for proposals for the establishment of one or more geothermal heat plant(s) in order to increase the heating production capacities using renewable sources. Only the projects dedicated to areas where there is a heating distribution network in use, including user connections, requiring only the connection to the geothermal source, are eligible.

What will the programme achieve and who are the beneficiaries?

The programme will increase the share of renewable energy in energy generation in Romania. This will be done by way of financially supporting the construction or refurbishment of three or more small scale hydropower plants in order to make them more efficient. Moreover, the programme will support the construction of one or more geothermal heat plants in areas where there already is a heat distribution system in place. The new or refurbished plants, will contribute to replacing fossil fuel with renewable energy. The programme will benefit local public administration, local institutions, enterprises and households.



How will bilateral relations be strengthened?

The programme has a strong bilateral dimension as there are Donor Programme Partners on hydropower and geothermal energy respectively: The Norwegian Water Resources and Energy Directorate (NVE) and Orkustofnun. Both DPPs have long standing experience in their fields of expertise. They have been actively involved in the development of the programme, and are committed to taking part in the implementation of it. This will strengthen bilateral collaboration and the exchange of knowledge and best practises.

Who can apply for funding under this programme?

Eligibility of applicants is defined according to the type of project:

1. Hydropower plant projects (HPP): public or private commercial entities.
2. Geothermal heat plant projects (GHPP): public or private commercial entities and/or local administrative units/authorities.

What are the partnership opportunities?

There are good partnership opportunities in the programme, and the programme will support potential Project Promoters in establishing partnerships with similar entities in the donor states. The programme did organise two matchmaking seminars: one on small scale hydropower and one on geothermal energy.

IMPLEMENTATION OF THE RONDINE PROGRAMME

In March 2014 the open call for applications to the RONDINE programme started and it ended on May 27, 2014. Total of 10 applications projects were submitted to the RONDINE steering committee.

The Committee decided to support those 5 that got the highest evaluation based on the application rules and the assessment of an international consulting firm. These projects were based on international cooperation with projects partners from Romania, Iceland and Norway.



Budgets divided equally between hydroelectric and geothermal heating In Romania there are over 100 central heating utilities that utilize fossil fuels, of which a large part utilizing imported gas, and can be replaced by geothermal heating, as well as a lot of undeveloped hydropower potential.

Total size of all projects is about 6 billion Isk. (39 million €). The size of projects involving five Icelandic partners is about 4 billion. ISK. (26 million €).



Three Icelandic partners will participate in the development of three projects in three regions of Romania, they are: Iceland Geothermal Engineering, Landsvirkjun Power and Verkís. Companies from Norway and Romania will also participate in projects.

It is expected that these projects in the field of geothermal involving Icelandic companies will increase the use of geothermal energy for district heating in Romania up to 30% which may be considered a large increase, and the reduction of CO₂ of all the projects will be 25.430 tons per year.

In total, installed capacity, production capacity, reduction of CO₂, total project cost and EEA Grant to these projects will be as follows:

Summary of total numbers for all projects	
Hydropower, Installed capacity	6,44 MW _e
Geothermal, Installed capacity	7,096 MW _{th}
Production capacity	51.210 GWh
Reduction of CO ₂ per year	16.002 tons
Total cost of project	4.708 m.ISK (31 m.€)
EEA Grant	1.638 m.ISK (11 m.€)

GEOHERMAL ENERGY PROJETS

Geothermal Projects in the Ilfov County, close to Bucharest, with population of 364.000 and is among the largest city of Romania.

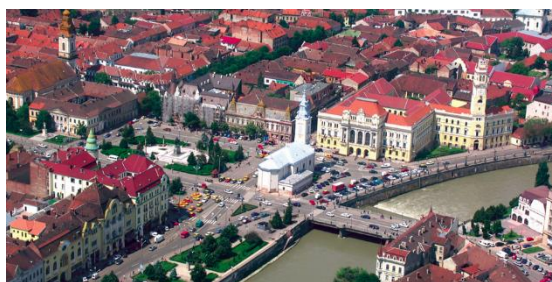


The project objective is to harness the geothermal water resources in Balotesti, Ilfov County, for house heating in the Emergency Hospital and its administrative buildings, replacing existing gas boilers. In the future more buildings in the neighbourhood are planned to be connected.

The work on the project started early this year, well testing, procurement of deep well pump, ground works for pre-insulated distribution pipe lines etc. The project is planned to finish in Mars 2016 when the operation of the district heating system will commence. The project operators are: Icelandic Geothermal Engineering Ltd. , S.C. Transgex S.A. and the County of Ilfov.

Installed capacity	4,396 MW _{th}
Production capacity	20,31 GWh
Reduction of CO ₂ per year	3.572 tons
Total cost of project	308 m. Isk (2,187 m.€)
EEA Grant	238 m. Isk (1,734 m. €)

Geothermal Projects in the city of Oradea, which is one of the biggest city on Romania with 200.000 inhabitants. One of the biggest universities in Romania (with 20.000 students) is located in the city.



The aim of the project is to increase the geothermal utilisation for district heating in the city and return the spent water back down into the reservoir by drilling an injection well facilitating a sustainable use of the resource. The increase in use of geothermal energy for the city district heating system to reduce the use of coal which is currently being used. The project operators are: Icelandic Geothermal Engineering Ltd., Transgex and the city of Oradea.

Installed capacity	2,7 MW _{th}
Production capacity	3,7 GWh
Reduction of CO ₂ per year	1130 tons
Total cost of project	600 m.ISK (4 m.€)
EEA Grant	400 m.ISK (2,6 m.€)

HYDROPOWER PROJETS

Hydropower project in Somes-Tisa

Aim of the project is the construction of two small hydropower plants in the Mara River area Somes-Tisa in north Romania.



Annual production capacity is estimated 11.1 GWh to increase renewable production of electricity due to increasing demand. Construction will start in September 2014, and will be finished in January 2016.

Installed capacity	3 MWe
Production capacity	11,1 GWh
Reduction of CO2 per year	4600 tons
Total cost of project	1.800 m.ISK(11,6 m.€)
EEA Grant	300 m.ISK (2 m.€)

The project participants are: Landsvirkjun Power, Verkis and MHC Green Investments S.R.L.

Hydropower project in Tarcau

Aim of the project is the construction of two small hydropower plants in the Tarcau north-eastern Romania.



Only about 48% of the potential hydro power in Romania is harnessed and most of hydro power plants are 30 to 40 years old and need upgrading.

Installed capacity	2,5 MWe
Production capacity	10,8 GWh
Reduction of CO2 per year	4500 tons
Total cost of project	1.500 m.Isk (10 m.€)
EEA Grant	500 m.Isk (3,2 m.€)

The participants in the project are the companies SC CORPAD S.R.L. and Sweco Norge AS.

Hydropower project in Timis

Aim of the project is construction of one small hydropower plant in in Timis river in western Romania.



Installed capacity	0,94 MWe
Production capacity	5,3 GWh
Reduction of CO2 per year	2200 tons
Total cost of project	500 m.ISK (3,2 m.€)
EEA Grant	200 m.ISK (1,3 m.€)

The participants in the project are SSM PRESS S.R.L.

How can Geothermal contribute to increased energy security and savings in Europe?

Example from Europe

AEBIOM, EGEC and ESTIF representing the biomass, geothermal and solar thermal sectors respectively, addressed an open letter to the Heads of State and Government, ahead of their spring meeting in Brussels 19th of March 2014.

The letter stated that *"...Investing in renewables for heating and cooling will bring security of supply and more competitiveness, and could save EUR 11.5 billion per year, announces the industry. Over recent years, the lack of awareness and political support to renewables for heating and cooling has meant only modest market development in the sector. However, in view of the upcoming discussion of the European Council on EU climate and energy policies beyond 2020, there is a great opportunity to invert this trend".* <http://egec.info/>

Example from Iceland

Mr. Guðni A. Jóhannesson, Director General NEA Iceland and ERA NET Coordinator, recently highlighted the importance for using geothermal resources in Europe in an ERA NET editorial writing: *"...It is therefore important for policymakers and others to recognise the great opportunity regarding geothermal heating for savings for countries, as it is estimated that geothermal heating in Iceland is saving equal to 7% of GDP or 3000 US\$ per capita or close to 1 billion US\$ for the economy only for 2012. It has also been estimated that renewables for heating and cooling could save EUR 11.5 billion per year within EU, improve the energy security and mitigate climate change".*

<http://www.geothermaleranet.is/publication/newsletters/>

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