

# Renewable Energies and Energy Efficiency – Chances in the Region Centru

Possibilities for economical activities  
in the Romanian Region Centru



PROJECT FINANCED BY THE EUROPEAN UNION

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## Dear Madams, Dear Sirs,

The collaboration between Centru Region and Land Brandenburg started in 2002 with the first Twinning Convention, concerning the “Implementation of the National Development Plan” and progressed continuously along the years through several projects and joint initiatives.

This partnership is considered to be a key element in the development of Centru Region, our institutions and companies benefiting from the guidance, the experience, the good examples and the involvement of several experts from Brandenburg. Beside this, our joint projects opened the doors for the German investors, willing to start new businesses or develop collaboration activities with companies or organizations from Centru Region.

“RenERg EuReg” is an international project, jointly implemented by Centru Region and Lusatia – Land Brandenburg, with the financial support of the European Commission, granted through the 7th Framework Program – Regions of knowledge. The project aims, among other things, to promote the collaboration between regions, to facilitate the transfer of best practices and research achievements between research organizations and economic operators, and to boost the cooperation between Universities, research institutes, local authorities and businesses.

The sectors approached by the “RenERg EuReg” project are renewable energies and energy efficiency, both Centru and Brandenburg having important potentials in the capitalisation of renewable resources. The efforts realised in the frame of RenERg EuReg are enforcing and completing the activities already implemented by the Universities and local authorities in the field of renewable energies and sustainable development. Proving this, we could mention that in Centru Region there were created 4 Local Energy Agencies and the Universities extended their curricula in order to include topics such as renewable energies and energy efficiency. Additionally, the interest of the regional companies, concerning this field, has increased substantially, although they need further support concerning technical, financial and legislative issues.

Another important objective of the project is to provide new cooperation opportunities for the entrepreneurs from the two partner regions. In order to fit this objective, the present brochure was designed and edited in German language providing relevant information such as: market analysis, potential assessments, etc for German companies willing to invest in renewable energies in the Region Centru.

We are confident that this project will open new opportunities for the development of our regions, and that together with our partners and benefiting from their guidance and experience, we will be able to further contribute to the sustainable development of Centru Region, with respect for the environment and social well-being.

A handwritten signature in blue ink, which appears to be 'S. Cretu'.

Simion Cretu - General manager ADR Centru

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Image 1:  
The location of the  
Region Centru in  
Romania

## 1. The Romanian Region Centru

The Region Centru lies in the middle of Romania being bounded to the East and South by the Carpathian Mountains. Geologically, Centru is a plateau and also the eastern part of the Pannonia lowlands. There are important reserves of methane, deposits of gold and silver, nonferrous heavy metals, nonmetallic ores, salt and mineral and thermal waters. More than a third of the region is covered by forests. The area has important hydrological resources and a well developed transport network. Centru is also one of the eight development regions that were formed in 1999 as a preparation for Romania's accession to the EU. The region is made up of 6 counties, Alba, Brasov, Covasna, Harghita, Mures and Sibiu. The 34.000 km<sup>2</sup> and approximately 2.5 million inhabitants make it almost identical with the Land Brandenburg.



Image 2:  
The Region Centru  
with the 6 counties  
Alba, Brasov, Covas-  
na, Harghita, Mures  
and Sibiu

The political decisions are taken by the Regional Development Council – there is no proper regional administration – built up equally of the representatives of the counties. The Regional Development Council decides mostly on the selection of projects that are financed from the European Structural Fund. The Regional Development Agency (ACR Centru) is the executive body of the Regional Council and responsible for the development of the Regional Development Plan and for the coordination of the regional actors assigned with the planning processes. It is also ANTRAGSTELLE for a large number of projects that are funded by the Structural Fund.

There are four local energy agencies in the Region (Alba, Sigisheara, Brasov and Miercurea Ciuc), which give information about the European energy policy and promote the use of renewable energies and for the improvement of energy efficiency.

An important future potential in the Region Centru is represented by the academic institutions and facilities, which all dispose of special educational programs and research infrastructure in the field of renewable energies:

- University Transilvania Brasov/Kronstadt with the National Research Centre for Renewable Energies
- University Lucian Blaga in Sibiu/Hermannstadt
- University 1 Decembrie 1918 in Alba Iulia
- University Petru Maior in Targu Mures.

Further information:

Schindhelm, Brenscheidt: Romania guide for foreign investors in Romania. May 2009

[www.schindhelm.net](http://www.schindhelm.net)

Economy trend compact. Romania. Midyear 2009. Editor: Germany Trade and Invest, Gesellschaft für Außenwirtschaft und Standortmarketing mbH

[www.gtai.de](http://www.gtai.de)

## Advantages of the Region Centru

From the legal point of view, foreign investors are coequal to national investors in Romania. They are therefore subject to the same legal terms and conditions. The Romanian state guarantees protection from expropriation and nationalization. Foreign entrepreneurs have the right to incorporate a completely new enterprise or a legally dependent branch, a legally independent subsidiary or a joint venture.

The following table presents an outline of the general terms and conditions for investors in Romania.

Quantitatively	Qualitatively
<ul style="list-style-type: none"> <li>▪ Relatively small cost of labour</li> <li>▪ Cost of labour incidentals, employer's contribution up to 44 %</li> <li>▪ Unitary rate of taxation of 16 % (flat tax); 19 % VAT</li> <li>▪ (due to the economic crisis some of the tax concessions have been abrogated)</li> <li>▪ Double tax agreement between Germany and Romania according to the OECD model</li> <li>▪ Subsidies from the EU</li> <li>▪ Credits from the International Monetary Fund</li> <li>▪ Governmental investment grants for regional investments and the creation of labour force.</li> <li>▪ Constitutional protection of foreign investments</li> <li>▪ Small start-up costs for companies</li> <li>▪ New EU-adapted regulations for the laws of consumer protection and product liability.</li> <li>▪ High investment needs in the private and public area.</li> </ul>	<ul style="list-style-type: none"> <li>▪ EU-legal system</li> <li>▪ Qualified multilingual potential of manpower, especially Hungarian, German and English.</li> <li>▪ Well trained and experienced engineers in the fields of mechanical engineering, textile production, in the timber, food, packaging and chemical industry, computer scientists, energetical engineers.</li> <li>▪ Internationally renowned researches in the above mentioned fields</li> <li>▪ Infrastructure: two airports in Sibiu and</li> <li>▪ Târgu Mures, third airport planned in</li> <li>▪ Brasov; two highways are being constructed in the region, railway network is being reconstructed.</li> <li>▪ Almost 12% of Romania's GDP is produced in the region Centru 12% (2008). This is divided into services with approximately 45 % of the regional GDP, industry and construction with 35% and 12 % go to the agriculture.</li> <li>▪ Geographical and cultural closeness: There is a German-speaking minority settled in the Region Centru.</li> </ul>

Beside the mentioned advantages there are also problems like a relatively slow reform pace, higher cost of labour and higher unemployment. Due to the economic crisis, the level of debt also rises. There are still exchange rate fluctuations between the Leu and the Euro. The measures announced to fight the crisis are not always transposed. The experiences of the last years show also that due to the instable political situations (like governmental crises) the legal situation does not always appear to be reliable. For instance, at the moment, the energy producers can receive only one green energy certificate out of three certificates that are achievable according to the law. The cost calculation for renewable energies installations remains therefore complicated and may become an economical issue.

## 2. Potentials for renewable energies

The potential for renewable energy resources in Romania is enormous. The air is very clear all the year long, with little fog. Winters bring little snow. Through the Carpathians there is a mild and still climate. Rarely there can be heavy storms. Against the background of the accession to the European Union and the challenges of the climate change, renewable energy sources have gained much importance. The goals of Romania’s national energy strategy for the years 2007-2020 are based on extended analyses and calculations:

Source	Yearly potential	Use
Solar energy	60 PJ 1,2 TWh	heating electricity
Wind energy	23 TWh	electricity
Hydropower	36 TWh	electricity
Out of which below 10 MW	3,6 TWh	
Biomass and biogas	318 PJ	heating electricity
Geothermal energy	7 PJ	heating

TWh = Thousand watt-hour  
PJ = Petajoule  
(1 Petajoule = 278 million Kilowatt-hour)

Source:  
National Energy Strategy of Romania 2007-2020

The level of knowledge and use of renewable energy resources in Centru Region is perceived differently by the potential beneficiaries. In some mountain areas there is a high number of communes that are not connected to the central power network (Apuseni, Caliman, Giugeului, Intorsurii, Cindrel, Baraolt, Bodoc, Persani und Barsei). This is also valid for four town communes of the counties Alba Harghita and Covasna. In addition, the following counties which have a rich biomass potential do not benefit from heat supply systems: Alba (4 towns, 65 communes); Brasov (5 towns, 45 communes); Covasna (2 towns, 34 communes); Harghita (3 towns, 52 communes); Mures (5 towns, 85 communes) and Sibiu (7 towns, 53 communes). The demand for decentralized system solutions is therefore correspondingly high.

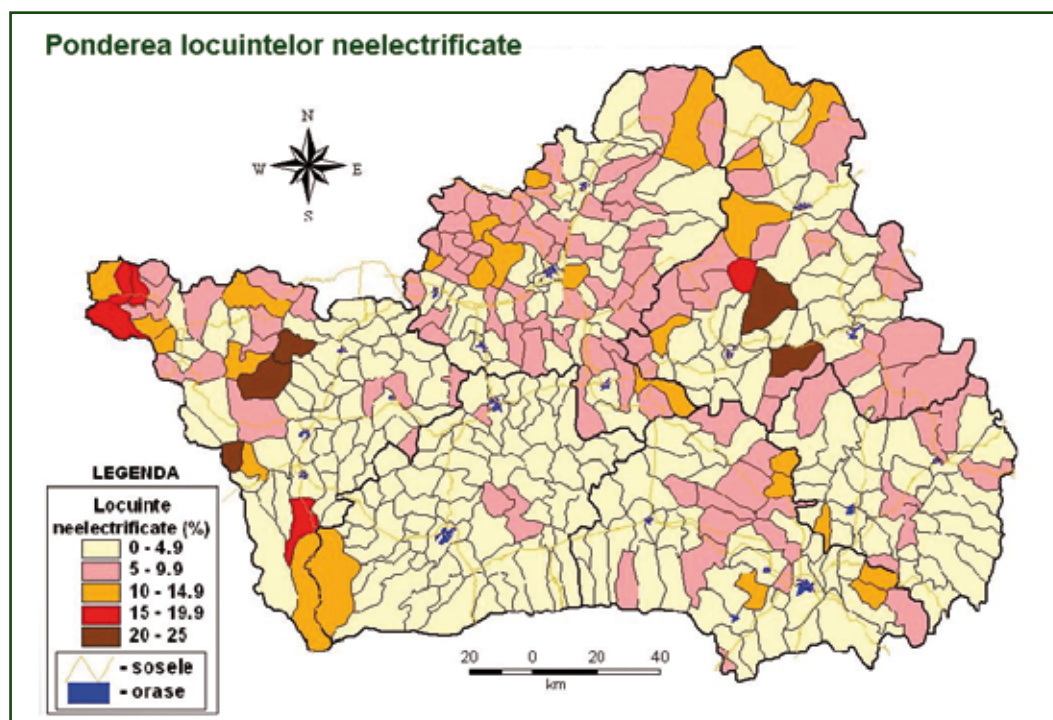


Image 3:  
Distribution of households without electricity

## Biomass

At present, biomass represents in the Region Centru the most promising source, because due to the climate and to the quality of the soil there are good premises for energy crops and renewable feedstock. 95% of the biomass are used directly for heating. Wood and bio-waste could, if optimally used, ensure more than 60% of production out of renewable energy sources. The forests of the Carpathians and those of the Apuseni Mountains are rich in timber.

The farmland of the Region Centru represents approximately half of the region's surface. Almost a third of the farmland lies fallow. The culture of energy crops and the use of renewable feedstock is possible to a great extent due to the rich soil which is full of humus and due to the favorable climate. There is a great potential for fast growing crops, especially willow, papule and locust, just like in Brandenburg. The cultivation of willow, even if only on the fallow lying areas of the Region Centru, could cover more than half of the final energy consumption of the entire country. In Covasna County a first "Green energy" network has been established, bringing together farmers, future users of the green energy and operators of biomass installations. Most installations were built in the 60s and 70s and necessitate modernization. The next demand is with the installation of cogeneration plants with a range of performance of 1 to 6 MWh.

At the moment there is only one modern cogeneration plant operated by the Austrian company Schweighofer in the town of Suceava.

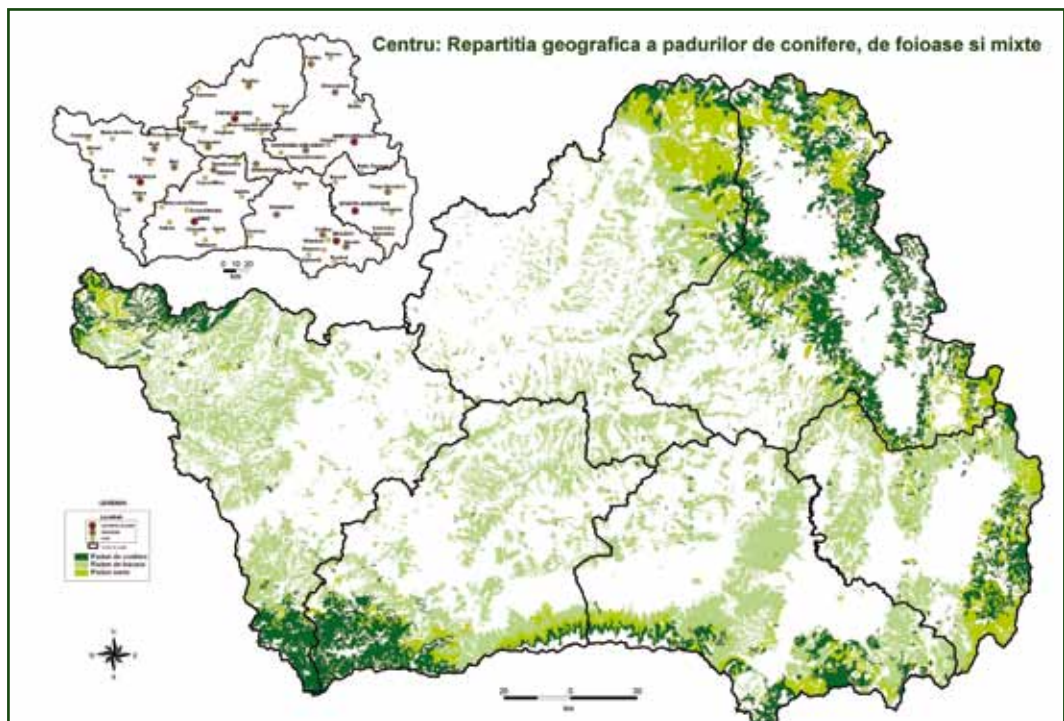


Image 4:  
Biomass potential in  
Centru

## Biofuels

Romania declared that it will increase its biofuels consumption quota up to 5.75% of the entire fuel consumption until 2010. Romania could reach this target if it produces not only biodiesel but also bioethanol. The potential in the form of rape, corn or grass silage can be produced in large quantities. The biggest petroleum corporate group in Romania, OMV/PETROM has built the first biodiesel stations and extends its network systematically.

The climate conditions in the Region Centru allow for an extensive production of biogas. Biogas potential results from the use of slurry or other animal waste. The use of only a half of the waste resulted from pig breeding would make it possible to install 50 biogas installations (with 35,000 MWh) and supply 73,000 inhabitants with electricity. This corresponds to the supply of more than 65% of the inhabitants of Covasna County. There are good perspectives for producers of installations and components who have specialized in smaller, decentralized production of biomass and biogas. The first electricity suppliers in the Region have announced their interest for the construction of prototype facilities for the production of biomass and biogas. The problems in the areas of biomass and biogas production come from the still lacking infrastructure for waste separation. The structural funds of the European Union represent a solid financial basis for the systematic construction and extension of infrastructure in energy supply as well as for the tech-



nological conversion to renewable energy sources and the corresponding technical equipment.

## Solar energy

Romania locations for the use of solar energy are very interesting. This is so not only for the southern part of the country but also for the Region Centru. According to regional investigations, the solar radiation and the corresponding parameters allow for a very efficient use of the solar energy. With regional differences, there is a yearly average of 1,800 to 1,900 hours of sun in the valleys and 1,500 to 1,600 above 2,200 meters. The solar radiation in the Region Centru is therefore considerably higher than in Germany, and in summer even five times higher than in winter.

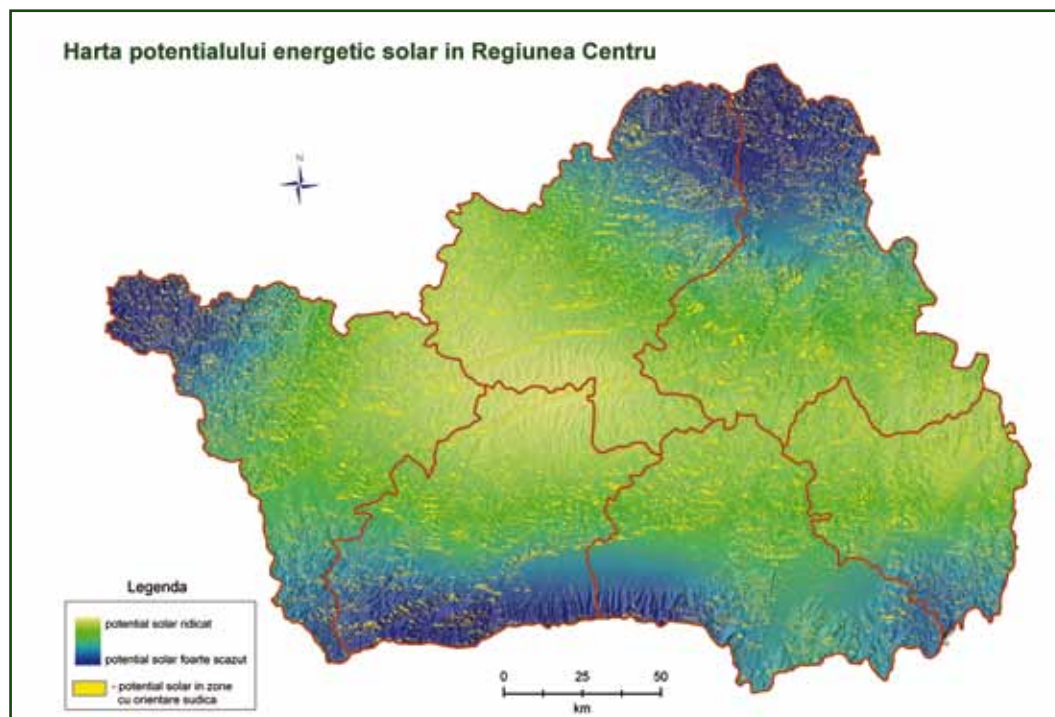


Image 5:  
Solar energy resources

## Solar heat / photovoltaic

Based on their favorable location, the localities Sebes, Cisnădie, Targu Secuiesc, Agnita, Gheorgheni, Aiud, Targu Mures, Ocna Mures, Medias, Baraolt, Toplita, Victoria, Fagaras, Mirecurea Ciuc, Covasna, Blaj, Sighisoara, Sibiu, Sovata, Ludus, Tarnaveni and Sacele could profit more from their solar heat potential. The intensity of the solar radiation causes a high efficiency of the solar energy.

Solar heat has been used for 30 years for hot water supply in hotels and blocks of flats, for the operation of greenhouses and drying plants. Problems of quality and maintenance lead though to a high necessity of rehabilitation, extension and modernization. Solar energy could replace in Romania some 50% of the hot water necessity and 15% of the heating energy from fossil sources.

Although there is enough technical potential for thermal application, there are still reservations from the industry. A strong boost is expected to happen following the implementation of the "Casa Verde" (the green house) program, with up to 90% state aid for licensed and registered companies.

For households, especially for those situated in remote areas, solar and/or wind energy represent a very convenient alternative. There are already several projects for electricity supply for small holiday houses. Those projects are mostly a combination of photovoltaic and wind. These types of investments are rentable already in areas where the houses to be supplied lie approximately 200 meters far from the public electricity network. The town of Alba Iulia is installing 1,700 photovoltaic cells on public buildings, which are expected to produce 257 kwh a year.

## Wind energy

Romania covers for the moment merely 0.07% of the energy balance by wind. The first big wind park facilities in the south-east of the country are being planned. The entry to wind power stations is simpler, investments are smaller as compared to hydroelectric plants for instance. New technology has lead to the fact that production of wind energy could eventually break all records. Wind energy in the Region Centru will play a role especially in the alpine areas. As a yearly average, wind speeds of 8-10 m/s are measured at 2,000-2,500 m altitude and 6m/s at an altitude of 1,800-2,000 m, as well as 2-3 m/s on the slopes and 1-2 m/s in the valleys.

Reliable measuring systems for the wind speed are being built now, so we can expect to receive in short time more concrete data for the Apuseni Mountains and –according to altitude – also for the other areas. The main problems are with the low feed-in tariff, the lack of financing and rising prices for land acquisition. Most of the existing projects are not yet profitable. There are no manufacturing of wind installations in Romania itself.

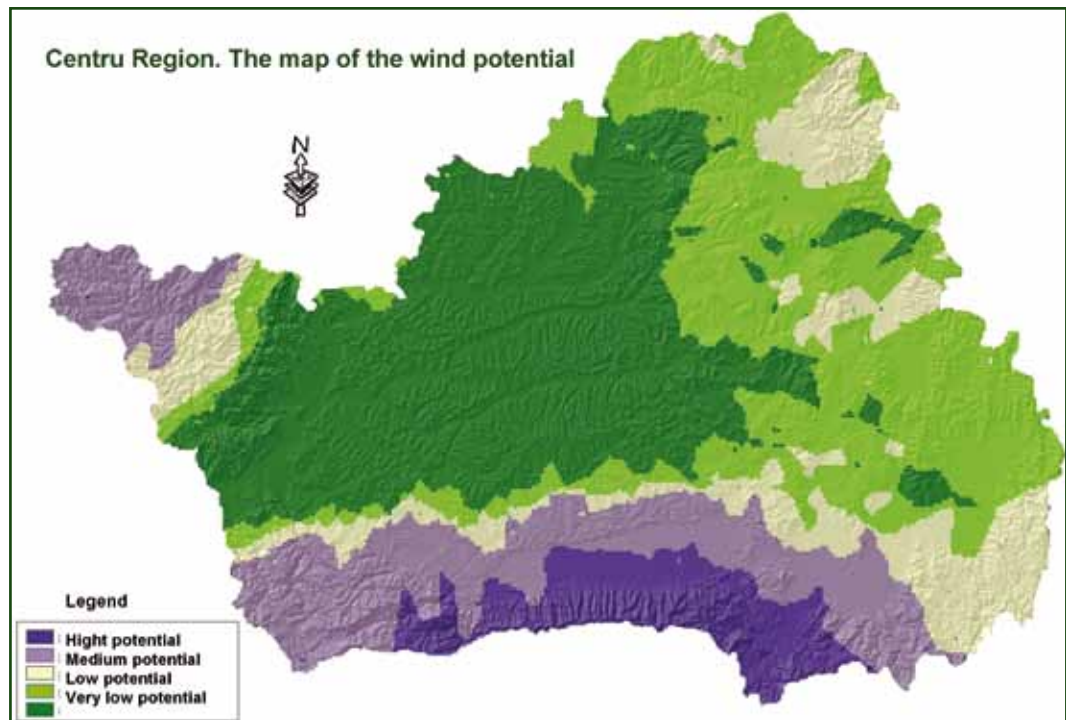


Image 6:  
Wind energy potential  
in Centru

## Water power

Almost a third of the electricity produced in Romania comes from water power. Water power potentials in the Region Centru are located in the areas on the Olt river, including the tributary Cibin, Raul Negru etc. and the Mures river with its tributaries Aries and Sebes. The most important water reservoir lies in Harghita County. The river Mures with its inclinations of 200 m distributed on 266 km offers a great hydro energetic potential. The population, the agriculture and the industry have been using this potential very intensively for a long time. Currently there are a total of 73 hydro electric plants in the Region Centru. The potential of the Region with regard to the use of smaller water power facilities is tough by far not utilized.

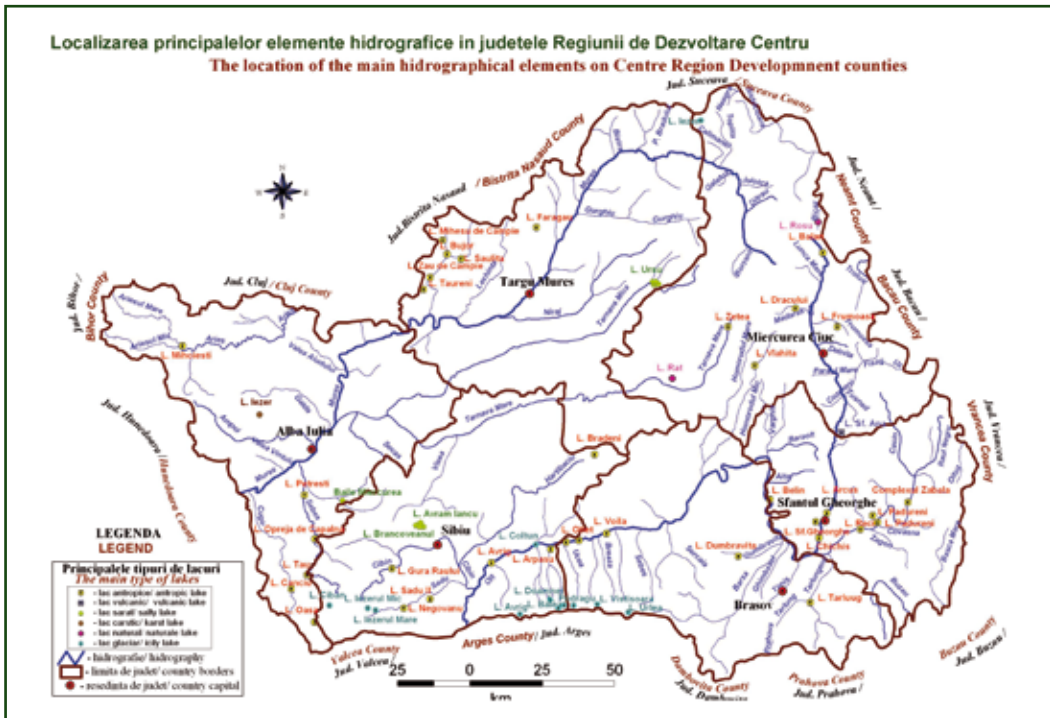


Image 7:  
Map of the water resources of the Region Centru

## Geothermal Energy

In the year 2006, the Institute for Geology in Romania investigated the resources and the possible utilization capacities of geothermal energy. In the Region Centru there were found underground areas with water reaching maximal temperatures of 120, respectively 140 degree Celsius. There are two locations with geothermal heating pumps in the Region Centru: Toplita and Miercurea Ciuc-Jigodin.

Potentials are to be found in the field of geothermal energy situated near the surface, for heating or cooling purposes, as well as in the deep geothermal energy. Although there is experience in the use of geothermal energy, the use of modern geothermal energy probes or collectors as well as constructive concrete components is still at the beginning. The geological premises have to be investigated more detailed. There is a technically utilizable potential for thermal purposes like heating pumps in the mountain areas, in public buildings (heating and preparation of warm water, heating systems for swimming pools and hot springs), in the rural areas (heating of greenhouses), in the hotel industry, in the agriculture and for industrial use. Currently 37% of the energy coming from geothermal sources are being used for heating, 30% in the field of agriculture and 23% in the industry.

### 3. Questions of energy efficiency

The economy of energy and the increase of energy efficiency are also basic issues of an integrated approach of economy, energy and climate policies in the Romanian Region Centru. As a member state of the EU Romania has to follow the legal guidelines of the European Parliament with respect to energy efficiency. This necessitates, especially until 2016, massive efforts for the energy rehabilitation of public buildings and for the modernization, extension respectively for the complete rehabilitation of the old energy systems and lines. Since January 2007 there are legal regulations for the calculation of energy efficiency for the new and old buildings, for the certification of buildings, for the verification of the boilers and air conditioning as well as for the accreditation of independent experts. The established minimal requirements for general energy efficiency must be checked every five years. Since 2007 it is compulsory to have an energy certificate for new buildings with over 1,000 m<sup>2</sup> of total net floor area, which are not destined for residential purposes. The certificate is issued for ten years.

#### Energy efficiency in industry

Energy efficiency has developed also in Romania to a cost factor and an important competitive advantage. A high percentage of the electricity consumption falls upon electric motors like pumps, compressors, and ventilators. Innovative and efficient energy motors offer a high saving potential. In the Region Centru process heat is also used inefficiently. It is clearly possible to build up a decentralized heat production from renewable energies. Operational energy management and the optimization of heating and cooling facilities are still largely unknown. It is estimated that there can be achieved a diminution in energy consumption of about 15% only through measures that do not require investments, this is through the means of organizational measures, logistics, efficient operating grade of facilities and so on.

There is a great need for consulting in this area, which has to be aroused through appropriate information.

#### Energy Efficiency in Housing Industry

The Romanian district heat supply is based on coal, oil or natural gas. The help of private capital and especially the deployment of the European structural funds in Romania resulted in large scale rehabilitation plans for the existing cogeneration plants and first pilot facilities respectively plans for the use of biomass facilities in the district heating supply. The old cogenerating plants are not the only reason for the low energy efficiency in Romania. Ailing piping systems (lacking insulation, leakage, corrosion), low efficiency of the heat exchangers in the blocks of flats, an aging district heat supply without individual possibilities for regulation and a building fabric more than 40 years old and without insulation which prevails in the typical blocks of flats lead to a consumption of heating and hot water which doubles in Romania as compared to the EU average. That is why insulation against loss of heat has an absolute priority in the Region Centru. The modernization of the heating systems and the energy rehabilitation of buildings are in the centre of the financial state aid. The first thermic rehabilitations have been made on the facades of the old blocks of flats. The insulation of roofs, cellars, heating pipes, the sealing of windows and doors and heat protection vitrifications are mostly the responsibility of the tenants. For the rehabilitation of public buildings there are not only legal regulations but also financial aid. Due to various problems, most of the pilot intentions have not passed yet the planning state.

Energy related EU programs could and should meet more demand in Romania. In this area there is a high necessity of consulting – especially for the state and communes administrations.

Summing up, we also have to indicate some of the constraints to the propensity to invest in renewable energies:

- In spite of the adoption of EU legislation there are still uncertainties on a national level as concerning the legal framework.
- The application of the law concerning renewable energies and the trading of “green certificates” (2008) is not uncomplicated.
- Licenses necessitate too much time.
- Land acquisition is complicated due to the small plots agriculture
- The capacity of the electricity and heating network is insufficient due to the ailing maintenance
- There are no pilot facilities for the applicable technologies
- The conscience for renewable energies is not enough pronounced

- The communication between producers, users and decision makers is still in an incipient phase.

## 4. Description of the energy market, price structure included

There are four national authorities, which define the framework of the Romanian energy sector:

- The Romanian Energy Regulatory Authority (ANRE) is subordinated directly to the prime minister and is responsible for the entire regulation of the energy sector.
- The Romanian Agency for Energy Conservation (ARCE) is responsible for the development and implementation of programs for the increase of energy efficiency and for the promotion of the use of renewable energies.
- The Romanian Power Market Operator (OPCOM) is responsible for the market administration (day ahead, bilateral agreements, green certificates). OPCOM gathers and publishes the statistic data related to the energy market.
- The network operator for electricity supply (Transelectrica) is responsible for ensuring and transporting electricity, balancing of production and demand, for the connection and infeed of renewable energies in the network.

The electricity market is divided into energy producers and energy suppliers. Decisive among the licensed electricity producers, for instance in the area of water power in 2009, is S.C. Hidro-electrica S.A. with 128.047 MW. The following are 15 companies with a production of more than 1000 MW and 11 companies situated under 1000 MW.

The electricity supplier in the Region Centru is S.C. Filiala de Furnizare a Energiei Electrice (FFEE), Electrica Furnizare Transilvania Sud. The electricity supply for the end-consumer is ensured by S.C. Electrica S.A. with its two branches S.C. Electrica Sibiu and S.C. Electrica Brasov.

Prices are determined according to regulated and bilaterally negotiated contracts among the Romanian energy bourse, the Day-ahead market and the adjustment market. ANRE compiles the regulations with the regulated tariffs.

The present tariffs have been applied since 1st July 2008. In May 2008 and May 2009 they were of 145 lei/MWh (some 40 Euro/MWh). The fluctuations reached in October 2008 with 245 lei/MWh (almost 60Euro/MWh) and in April 2009 with 100 lei/MWh (almost 24Euro/MWh) their highest respectively lowest stand.

The heating market is also regulated by ANRE. The supply is done through district heating stations and individual cogenerating facilities based on coal and natural gas. High losses, low energy efficiency and unreliable supplies led in the 1990s, in addition to the privatization of the residential sector, to numerous quitting of district heated residences and to the installation of individual natural gas heating. The district heating power stations were forced to make more drastic price increases and to apportion them to the remaining customers. In some cities of the Region Centru like Brasov, only about 30% of the residences are still connected to the district heating supply. State subsidies could save so far the inefficient electricity suppliers.

## 5. Possibilities for subsidies and financing

Romania offers – not least through the EU accession – multiple and favorable possibilities for subsidies and financing. Romania is an Objective 1 Region. For the acquisition of subsidies it is recommended to work together with appropriate specialized consultants already in the planning phase.

### Green electricity certificates

In comparison to Germany, where renewable energies are promoted digressively through remuneration for feeding, the Romanian legislator decided for a market based subsidies instrument, which is ajar on the long term to the international certificate commerce. The Romanian system for the promotion of renewable energy combines the compulsory quotas with the green certificates. This way wind, solar and water electricity is fed in into the national network. Electricity supplier must buy certain quantities of such energy. Based on the state subsidies, one has to take into consideration the increasing sales of heating pumps and solar, photovoltaic and wind power stations. The condition for subsidies is for the applicant to buy the environmental friendly facilities from distributors that have been selected by the Administrative Environmental Body (Administratia Fondului pentru Mediu).

Green certificates are highly interesting for investors in the area of renewable energies. They are issued by Transelectrica based on the quantity of green energy that is supplied in the national energy system. The number of the acquired certificates must correspond to the product between the value of the compulsory quota and the quantity of the supplied energy. If one of the suppliers misses the quota it must buy later the outstanding green certificates to the maximum price. The price of the certificates is determined on the market by the competition. There are minimal acquisition prices (24 Euro/certificate) – in order to protect the producers – and maximal prices (55Euro/certificate) – in order to protect the consumers. By the introduction of compulsory quotas the energy suppliers support higher costs that are passed to the consumer. Companies can get back from the national administration of the environmental funds up to 50% of the investments in environmental friendly project. The company must though prove that the investment was done and makes sense.

### Law for the Promotion of Energy Production from Renewable Energy Sources from 27.10.2008

With this law Romania created the best premises for investors and plant manufacturers, in order to be able to meet the EU requirements to the reduction of CO<sub>2</sub> until 2020.

Generous subsidies possibilities have been introduced especially in the area of photovoltaic, which represent an interesting alternative as compared to classic locations like Spain, Greece, Italy or Germany.

The composition of legal and green certificates rises the legal remuneration for feeding beginning with 01.01.2010 from 0.28 to 0.49 Euro/KWh. Furthermore, the Eu supports the setting up of photovoltaic power stations with subsidies up to 70% up to 5 million Euro per project.

### State aids in Romania for the installation of renewable energy sources (Governmental decision no. 750/2008)

The main focus of the state aid is the promotion measures for the currently not competitive production of renewable energies. Investments under 50 million euro which contain an initial investment are supported. The grants are limited to 50% of the project related costs plus 10% for medium sized enterprises and 20% for small enterprises. 30% of the project related costs must be accounted for as insurance. The conception and implementation as well as the control of the measures are the responsibility of the Ministry of Economy.

The conditions for promotion are updated yearly for each area.

## Environmental funds

The environmental fund in Romania is a public institution focused on the promotion of projects for the further use of renewable energies (renewal or modernization of traditional heating systems with alternative technologies) and of projects for the increase of energy production – decree no. 50 from 21.04.2008.

The condition is that the amount of the total investment should lie within a range of a minimum of 14,000 and a maximum of 5.7 million euro. The refundable financings go directly to the companies. This way up to 75% of the project costs can be financed. The disbursement in the case of these funds is done after the financial statement.

### The “Casa Verde” Program 2008 (“The Green House”)

This program supports especially individuals in projects, which have as a goal the replacement or modernization of traditional heating systems with systems based on solar, thermal or wind energy. The projects should lead to the improvement of air, water and soil quality. Legal entities like public institutions, educational institutions, local administrations or other economical actors are eligible.

The costs for each installed system must not exceed 25,000 lei (circ. 6,000 euro). For legal entities up to 50% of the project cost can be financed through the program, and the costs for each installed system are limited to 300,000 lei.

The company received the grant after completion.

### The National Program »Research for Excellence«

The program is based on the „Collaborative Research“ and the already established EU technology platforms (including the EU technology platform for photovoltaic). Research themes within the framework of the National Program for Renewable Energies are biofuels, hydrogen and fuel cells, biomass (energy plants, timber, waste etc.), water power, wind technology for small and medium sized turbines and heating from renewable energy sources.

### FREE (Romanian Funds for Energy Efficiency)

This is about the identification of direct or parallel co-financing sources for investments in the area of energy efficiency. These can be Romanian banks, foreign banks with inland branches as well as national or foreign investment funds. The objectives are the modernization of technological processes, recycling, the better use of renewable energies and the modernization of potable water systems. The investment volume should lie from 100,000 and one million USD, with 20% own resources. At least 50% of the investment income benefits should be generated by energy saving.

In Romania it is in many cases usual to give financial data in public documents in UDS. 100,000 and 1 million USD correspond to about 66,700 euro and 667,000 euro

### The National Program for the Increase of Energy Efficiency and the Use of Renewable Energy Resources in the Public Sector, for the Period 2009-2010.

Financial aid for public projects of rehabilitation and modernization of central heating systems, the use of renewable energies, fuel exchange in the production of heating, modernization of the public illumination, thermal insulation of the building and for the assessment of energy efficiency of the building. The applicant receives a financial aid of 30%-50% of the total project costs.

### The National Program for Thermal Rehabilitation of Buildings

The program supports until 2014 the establishment of a special fund for the financing of the following attainments: the creation of energy expertise and audits, the planning of thermal insulation works for blocks of flats, grants for their implementation as well as the implementation of thermal insulation for residences and other premises, that are the property of or administrated by the Ministry for Regional Development and Housing.

### Support outside of the Romanian Programs

With the Export Initiative of Renewable Energies the German agency DENA supports the following focus points:

1. Network formation and coordination

2. Export of know-how for German companies
3. Abroad marketing with „renewables – Made in Germany“

Further programs for subsidies and financing see:

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Subsidies programs in Land Brandenburg, stand August 2009, Cottbus Chamber of Industry and Commerce

Buildup of databanks of programs for subsidies and financing of the EU, of the German Federal Republic and of the Land Brandenburg see:

<http://www.stk.brandenburg.de/sixcms/detail.php/bb1.c.153568.de>

You can find a list of legal regulations and acts on the Internet at

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[www.renerg.eu](http://www.renerg.eu)

More information regarding the RenERG-EuREg project, its activities and future events, can be accessed at the Internet address:

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[www.renerg.eu](http://www.renerg.eu)

Source for current tenders:

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[www.e-licitatie.ro](http://www.e-licitatie.ro)

## 6. Legal Framework, Economic Cooperation, Contract Award

Romania has adopted most of the international regulations for green energies. The national laws and regulations are being developed further on this basis. The adaptation process is still in progress. There is a legal security, though it is recommended to integrate from the beginning a legal adviser.

### Economic Cooperation

Due to the high number of not electrified households and lacking central heating supply there are great potentials in the rural areas for a decentralized electricity and heating supply from renewable energy sources. Contacts are the four local energy agencies in the Region Centru, the municipal administrations or directly the construction companies on site. Based on the Casa Verde (Green House) Program, construction companies may apply for the corresponding state grants for the use of renewable energies in private households. For component manufacturers and suppliers this is an opportunity for cooperation with those companies.

A new field opens in the Region Centru for the installation of biomass power plants, as the realization of such facilities have generally not overcome the planning phase. Administrative facilities and economic enterprises like lumber mills, agricultural farms and slaughter houses are open for cooperation.

A direct contact for cooperation in the Region Centru is the Community of proprietorship UGIR 1903. It is the first community of this kind in Romania. UGIR is an owners association that established a new branch – The Renewable Energy Owners Association. This new branch is meant to become a promoter of the renewable energy sector in Romania, for the purpose of protecting the environment, saving resources and protecting the interests of its members.

Another initiative attempting to coagulate the interests of the business environment, research institutions and public authorities, in a single structure, is represented by the RenERG-EuREg project, financed from the 7th Framework Program. The project cluster, managed to gather, so far, 14 potential members with common interests, willing to develop joint research projects in the field renewable energies, to develop new business initiative in this field and to promote at regional level the use of renewable energies.

### Awarding of Contracts

Romanian contract awarding guidelines are based on the EU regulations for public procurement.

The electricity and heating suppliers must carry out massive efforts for the rehabilitation and modernization of their capacities and attune themselves more and more on complementary supply lines with energy through renewable from renewable sources. They are still in the phase of intensive search for appropriate models and possibilities (like biomass power plants). This is also valid for those district-heating suppliers that are in search of cogeneration and are interested in rehabilitation results with a high efficiency. As far as suppliers are still communal, respectively public, the regulations of public procurement are valid.

The electricity suppliers on the retail market are open to cooperation and offers in the area of renewable energies.

Public facilities are extremely interested in offers for efficient energy rehabilitations of their buildings, which can be awarded through public tendering.

Smaller communes focus more on a preferably decentralized supply with electricity and heating from renewable energy sources.



## 7. Best Practice – Examples

### LP Electric Group with the Companies LP Electric Systems and Ecovolt Romania Based in Alba Iulia

The German company Centrosolar supplied in cooperation with the Romanian firm LP Electric Systems solar modules for the Retezat National Park in the south-western Carpathians. The region is not connected to the public electricity network, because an intrusion in nature is legally forbidden in the entire National Parc. The photovoltaic installation supplies the electric equipment in a refuge cabin of the reservation. The photovoltaic modules represent the only possible and reliable energy supply. The solar power supplies all the consumer in the cabins, from radio to illumination, TV and laptops.

LP Electric Group was founded in 2002, Ecovolt as a production company in 2008 and LP Electric Systems as a consulting firm for the use of all sorts of renewable energies in 2009.

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ECOVOLT România  
LP ELECTRIC  
systems

Str. Petresti Nr. 17  
510184 Alba Iulia

Tel.: +40 (0) 258 81  
88 81

[www.centrosolar.com](http://www.centrosolar.com)  
[www.LPelectric.ro](http://www.LPelectric.ro)  
[www.Ecovolt.ro](http://www.Ecovolt.ro)

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### HIRSCH Servo AG - HIRSCH Porozell S.R.L.

The high energy prices and the legally regulated guideline of an energy pass for buildings lead also in Romania to an increasingly strong demand for EPS-insulating materials and to an increasing importance of western quality standards for upgraded insulation in structural engineering. HIRSCH Porozell S.r.l. started with about 20 coworkers in Cluj, Romania. Production and storage areas (external storage area included) cover a yearly capacity of up to 360.000 m<sup>3</sup>. The investment was of 4 million euro.

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Rascruci 368A  
Cluj RO-407207

Tel. +40 (0)  
264/207171 or  
-207172

[www.hirsch-gruppe.com](http://www.hirsch-gruppe.com)

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### SC Transfer de Tehnologie si Management srl in Brasov/Kronstadt (TTM)

TTM has been working since 2007 as a consulting and project development company in the area of renewable energies. TTM develops projects and transfers proved and tested facilities concepts and technologies in the areas of biogas facilities, biomass power stations as well as wind and solar power plants to Romania.

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Str. Traian Nr.1, Bl.33,  
Sc. D, Ap. 3, 500332  
Brasov

Tel.: +40 (0) 268 316  
311

<http://ttm-romania.ro>

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## 8. Important Romanian Information Sources

See:  
www.renerg.eu

The Ministry of Regional Development and Tourism (Ministerul dezvoltare regionale si locuinte)	www.mdpl.ro
Ministry of Environment and Sustainable Development (Ministerul mediului si dezvoltare durabila)	www.mmediu.ro
Ministry of Transports, Constructions and Tourism (Ministerul Transporturilor, Constructiilor si Turismului)	www.mt.ro
The National Institute for Construction Research (Institutul national de cercetare dezvoltare in constructii si economia constructiilor)	www.incerc2004.ro
The National Agency for Energy Conservation ARCE (Agentia Română pentru Conservarea Energiei)	www.arceonline.ro
Institute for Studies and Power Engineering (ISPE; S.C. Institutul de Studii si Proiectări Energetice S.A.)	www.ispe.ro
Romania Green Building Council	www.rogbc.org/ Romania-green- building-council/
Romanian National Energy Institute IRE (Institutul National Roman pentru Studiul Amenajarii si Folosirii Izvoarelor de Energie IRE)	www.ire.ro
Agency for Energy Policies in Romania (Agentia pentru Politici Energetice in Romania APER)	www.aper.ro
Romanian Energy Regulatory Authority ANRE (Autoritatea Nationala de Reglementare in Domeniul Energiei ANRE)	www.anre.ro
Romanian Power Market Operator OPCOM (Operator Piatei de Energie din Romania); Brach of C.N. Transelektrica S.A.)	www.opcom.ro
Administration of the Environmental Funds (Administratia pentru Fondul Mediu - AFM)	www.afm.ro
Romanian Agency for Foreign Investments ARIS (Agentiia romana pentru investitii straine)	www.arisinvest.ro
AHK Romania – German-Romanian Chamber of Industry and Commerce (AHK Rumänien - Deutsch-Rumänische Industrie- und Handelskammer)	www.ahkrumaenien.ro
Romanian Chamber of Industry and Commerce	www.ccir.ro
Regional Development Agency of the Region Centru – ADR Centru (Agentia pentru Dezvoltare Regionala Centru)	www.adrcentru.ro
University Transilvania Brasov (with the National Research Institute for Renewable Energies (GENIUS))	www.unitbv.ro
Agency for Energy Management and Environmental Protection (Agentia pentru Managementul Energiei si protectia Mediului Brasov)	www.abmee.ro
Local Energy Agency ALEA (Agenția Locală a Energiei Alba)	www.alea.ro
Public Energy Management Service SPEMH (Serviciul Public de Management Energetic Harghita)	www.spme.ro
Agency for Energy Management Sighisoara (Agentia pentru Managementul Energiei Sighisoara)	www.ames.ro



