



ENERGY EFFICIENCY IN ROMANIA

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DEMO REPORT

by

FRD Center Market Entry Services

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1. BRIEF OVERVIEW OF ENERGY EFFICIENCY SECTOR IN ROMANIA

In 2005 compared to 1996, the energy efficiency index (ODEX) decreased by 26 % at the level of the entire economy in Romania.

During the period 1996 – 2006, the energy efficiency in the industrial sector increased by 35% in Romania. Most of the domestic industrial branches registered an improvement in the energy efficiency level during the past years. The most significant favourable evolutions were registered in the textile and food processing industries. In the great energy consuming branches (chemicals, steel etc.) the trend was also positive.

In the household sector, the energy efficiency improved significantly between 1996 and 2006 (by 36%). The household sector in Romania in the last years was characterised by: measures for improving the performances of the existing buildings, the development of the improved standards for the new dwelling places, extending of the energy labelling of the household appliances and receivers etc.



At present, the energy sector in Romania faces significant challenges on both national and global levels, such as the security of the energy supplies, the increased economic competitiveness and the reduction of the sector's impact on the environment.

The green building market in Romania is growing fast and the investors and developers are beginning to see the value of the sustainable construction. Romania has been required to enforce the Energy Performance for Buildings Directive (EPBD), requiring energy audits, since January 2007 for new construction.

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Romania created an institutional and legal framework in conformity with the EU acquires in order to promote energy efficiency.

Under the regulations in force and in order to meet its EU commitments regarding the renewable energy, by 2020 24% of the energy generated in Romania must come from renewable sources. The development of the wind farms is a fundamental element in the Romania's effort to achieve this level.



2. RELEVANT ENERGY EFFICIENCY ORGANISATIONS IN ROMANIA

2.1 Energy Efficiency Finance Facility



The Energy Efficiency Finance Facility (EEFF) is a grant-supported financing line for Romania from the European Union (EU) and the European Bank for Reconstruction and Development (EBRD), aimed at promoting the energy efficiency investments in Romania's private sector through local partner banks.

So far, the EEFF has been used to finance 45 energy efficiency investment projects in Romania with a combined value of 33.5 million EUR, by companies from various sectors, such as: cables, forging, extrusion, furniture, textiles, metalwork, bakery, machines, plastics etc., using a wide range of energy-efficient technologies and methods (thermal rehabilitation, technologies, heat recovery, boilers, cogeneration, ovens/kilns etc).

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Through the EEFF, the Romanian companies may borrow up to 2.5 million EUR to finance energy-saving investments, benefiting from a 15% EU incentive grant (up to 375,000 EUR per grant) upon the successful completion of the project. Also, the companies receive free technical consultancy from Tractebel Engineering, which is also financed by EU funds.

The participating banks at this financing line in Romania are: BCR, BRD, Banca Transilvania, CEC, OTP Bank and Raiffeisen Bank.

2.2 ESCO companies



The company Servelect, with the headquarters in Cluj Napoca, provides energy consultancy, solutions for the energy efficiency, electrical equipment etc. It is an ESCO type of company.

Servelect carried on energy efficiency works in over 40 sand sorting stations - gravel pits. Also, the company has a significant experience in the energy efficiency in the milk industry.

One of their current projects focuses on intelligent public lighting – Servlight.

The company's clients include producers of furniture, metallic constructions, textiles and auto components, players in the food industry, agricultural farms, concrete stations, public institutions etc.

Other ESCO type companies in Romania are: EnergoEco, Energy Serv, Eco Erg Group, Energy Services Group, Esco Energy etc.

3. ENERGY EFFICIENCY IN INDUSTRIAL SECTOR IN ROMANIA

3.1 EBRD lent 10 million EUR to OTP to support energy projects

Through the EEFF, EBRD lent 10 million EUR to OTP Bank Romania, in order to finance sustainable energy projects undertaken by Romanian companies.

The EBRD funds will be complemented by an amount from the EU to support the technical assistance program and incentive payments for sub-borrowers to promote investments in the sustainable energy sector.

The project will enable the private industrial sector to maximize energy savings and to improve its overall competitiveness. The project is expected to have a positive impact on the climate change mitigation efforts in Romania, providing access to long-term financing for the local industrial sector and encouraging private companies' investments in sustainable energy.



3.2 Rulmenti Barlad achieves energy savings of 20 - 59%

Rulmenti Barlad, one of the main manufacturers of bearings and bearing elements on the domestic market, installed a recuperating boiler to produce saturated steam from the combustion gases from its combined heat and power unit, through an investment of 360,000 EUR financed using an EEFF credit from BCR. The investment brings energy-savings of 20 - 59%, depending on the demand for steam.

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Rulmenti Barlad, which is owned by the Turkish Group Kombassan, recorded an estimated turnover of some 70 million USD in 2010, up by approx. 45% compared to 2009. This growth was sustained mainly by the exports that represented some 85% of the company's sales. For 2011, the company estimates a turnover of 110 million USD.

3.3 Electrotel used EEFF credit of 557,000 EUR

Electrotel used the EEFF for the replacement of the low efficiency lamps with new LED lighting, the thermal rehabilitation of the industrial hall and the modernisation and improvement of the hot tap water system, which is now solar-assisted. The overall energy savings are of 37%. The project was financed with an EEFF credit of 557,000 EUR from CEC.

Electrotel, with the headquarters in Alexandria, Teleorman county, produces low and medium voltage electrical switchgears and automation panels. Some 70% of the company's production is exported. The company is listed on the Bucharest Stock Exchange.



3.4 Sterk Plast records energy savings of 2,878 MWh/year

Sterk Plast Constanta replaced plastic injection moulding machines and an extrusion blow moulding machine. The company records energy savings of 2,878 MWh per year. The energy efficiency project was financed with an EEFF credit of 345,000 EUR from Banca Transilvania.

Sterk Plast produces household plastic products: buckets, basins, flower pots, flower stands, strainers, coat hangers, mugs, bowls, bread baskets, shelves, plates, citrus juicers etc. The products are obtained after processing the plastic in injection machines.

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3.5 Promex achieves energy savings of 25%

Promex used an EEFF credit of 473,000 EUR from BCR to modernise a heat treatment furnace and a lathe, achieving energy savings of 25%.

Promex manufactures equipment for the metallurgical sector, earthmoving, road, construction and naval equipment.

3.6 Hidroelectrica's investments to increase by 55% in 2011

The Hidroelectrica's investments in order to upgrade its hydro-power capacity and to achieve new targets of national interest amount to 397.4 million EUR in 2011, up by 55% compared to the investments planned for 2010.

The investments in 2011 will be funded through gradual debts extinction and by attracting funding from new sources totalling 153.6 million EUR and from bank loans worth 243.8 million EUR.

The company's investments for the period 2010 - 2012 are of 2.2 billion EUR, an amount to be used for upgrading the hydro-power capacity and for creating new capacities.

Hidroelectrica is currently exploiting 139 micro-hydroelectric facilities with a 111.1 mega Watts installed capacity.

3.7 GE Energy to supply wind turbines to two wind farms

GE Energy will collaborate with the developer of wind farms Monsson Alba for two new projects in Romania, which will add 35 MW of wind energy to the national grid.

Within the new projects, GE will supply 14 wind turbines of 5 MW, out of which ten of 2.5 MW, and 10-year maintenance work within Silistea 1 project that will belong to RomConstruct Top company and four wind turbines of 2.5 MW and 5-year maintenance works within Mireasa 2 project that belongs to Eco Wind Power company. Both projects are located near the Fantanele Wind Farm, Mures county, which is also implemented using the technology provided by the 2.5 MW wind turbines from GE.

The 2.5 MW turbine is designed to generate the biggest annual production for its class and it is based on the success of GE's 1.5 MW wind turbine.

4. ENERGY EFFICIENCY IN RESIDENTIAL SECTOR IN ROMANIA

4.1 Energy certificate mandatory for real estate transactions

Starting with January 2011, any real estate leasing or sales transactions need an energy performance certificate to be released by authorised auditors.

Through the energy certificate, any future buyer or tenant are informed about the dwelling's energy performance, rated by the annual energy and the heating, warm water and electricity consumption, in kWh/sqm.

Depending on the reached energy performance, buildings are classified into seven classes on the energy scale, ranging from Class A, which is characterised by the lowest energy consumption and up to class G, corresponding to the highest energy consumption.

The energy performance certificates for buildings issued by authorised auditors are valid for ten years since released.

4.2 300 blocks to be thermally rehabilitated in District 6 - Bucharest

The City Hall of the District 6 in Bucharest will contribute at the thermal rehabilitation of 300 apartment blocks during the next years, using a loan of 70 million EUR from the European Investment Bank. This is part of the Romanian Government's thermal rehabilitation program that addresses to the owners' associations that want to increase the energy performance of the housing blocks.



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By December 2010, 27 apartment blocks have been thermally rehabilitated in the District 6 in Bucharest.

The main objectives of the national thermal rehabilitation programme are: to improve the hygiene and thermal comfort conditions, to reduce heat loss and energy consumption, to reduce maintenance costs for heating and hot water for consumption, to reduce pollutant emissions generated by energy production, transport and consumption.

The Government's thermal rehabilitation program includes: the thermal insulation of the apartment block's external walls, the replacement of the block's windows and existent exterior doors with qualitatively superior ones, the thermal and hydro-insulation of the roofs or the terrace, the thermal insulation of the floor over the basement etc.

4.3 Building stock accounts for 14% of Romania's total GHG emissions

According to the World Green Building Council, the current building stock accounts for 14% of Romania's total greenhouse gas (GHG) emissions which is calculated based on the energy consumption.

According to the same source, Romania's GHG emissions are currently 40% below 1989 levels and therefore the country is in compliance with the EU climate change agreements and the Kyoto Protocol at the global level. Because of this, Romania is allowed to increase the emissions from buildings, called a "positive target", of plus 19% by 2020.

4.4 RoGBC promotes benefits of green buildings



Romania Green Building Council (RoGBC) is a non-profit, non-political association set up in 2008. RoGBC promotes the benefits of the green buildings in the private sector and has a dialogue with the Romanian public authorities to create a regulatory framework for the development of a sustainable built environment.

The association is lobbying for a green finance programme, supported by the Romanian government, for thermal rehabilitation projects and a set of local measures that could be adopted by the local public authorities (including expedited permitting, density bonuses and local tax reductions) to incentivize green building.

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Also, RoGBC promotes “green mortgages” as a new financial product that could boost the development of the green buildings in Romania. The association is in discussion with several banks to create and implement this new product.

4.5 Modatim Investment developed green building project

The green building project City Business Centre in Timisoara, developed by ModaTim Investment SA, is one of the first major commercial office projects in the country to better integrate environmental aspects.

The site was transformed into a modern office / services environment, in line with the urban plans of the city. The project offers environmental benefits and triggered a full urban regeneration of the area.

For this project, they received the 2010 Green Building Project of the Year Award by RoGBC.



ModaTim Investments' Ovidiu Sandor and Florin Anghel of Schneider Electric accept the award for "Green Building Project of the Year" for "City Business Centre" in Timisoara

Source: RoGBC

5. ENERGY EFFICIENCY IN SERVICES AND UTILITIES IN ROMANIA

5.1 Brasov to decrease public lighting energy consumption by up to 30%

In October 2010, an intelligent public lighting system was launched in the Brasov city. The new concept of the public lightening system Fl@sh Smart City was implemented by the Brasov City Hall together with Flash Group.

The system was launched, as a project pilot, in various areas in the Brasov city and it will be expanded in the entire city. The new system will bring energy consumption reductions of up to 30%. The total investment is estimated at 1.2 million EUR.

5.2 Suceava to rehabilitate heating networks in 2011

In 2011, the Suceava City Hall will continue the rehabilitation process of the heating networks and the thermal units, using funds from both the state budget and the local budget. The representatives of the Suceava City Hall intend to modernise in 2011 three thermal units and the heating pipes in the areas with problems.

The local authorities intend to launch in 2011 also a dispatcher to coordinate the automated thermal units in order to detect more easily any problems with the heat and hot water supply to the population.

So far, almost half of the thermal units in Suceava have been modernised with state and local funds.



6. EVENTS

6.1 Winners of Energy Efficiency Excellence Awards

The EU - EBRD Energy Efficiency Excellence Awards ceremony took place in November 2010 in Bucharest. The event's purpose was to recognise the Romanian companies that invested in sustainable energy solutions using the EEFF.

The winners were as follows:

- **EEFF Award for an Energy Efficiency Trail Blazer:** Rom Olsena Company. The company, which is a nail and wire manufacturer, thermally rehabilitated its industrial hall, by insulating the roof, windows and doors and by using a modern boiler. The investment was of 72,000 EUR, out of which 85% from CEC using the EEFF. The energy savings are of 48%.

- **EEFF Award for a BIG investment with BIG energy savings:** Chimcomplex. The company, which is a main chemical producer, replaced grid-based power and a conventional steam boiler with a cogeneration unit and a heat recovery boiler. The investment brings energy savings of approximately 30%. The company used an EEFF credit of 2.5 million from BCR.

- **EEFF Award for a SMALL investment with BIG energy savings:** Recomplast. The company manufactures equipment for the power industry: high and medium voltage cables, parts for the power network. Recomplast used the EEFF twice, for various investments: oxy-fuel and plasma cutter, screw-thread rolling machine, an automatic press with mechanical feeding line, medium frequency inductive heating system. The company used credits from BCR totaling around 200,000 EUR.

- **EEFF Award for Low-energy Household Products:** Amplast Co. The company produces single-use plastic packaging. Amplast Co replaced five smaller thermoforming machines with two larger thermoforming machines. The company records 79% specific energy savings, using an EEFF credit of around one million EUR from BCR.

- **EEFF Award for Energy-efficient Heavy Industry:** Doosan IMGB. The company replaced a steam boiler, rehabilitated three furnaces and installed an energy management system. The investments led to energy cost savings of 1.5 million EUR / year, total energy savings of 27GWh / year and GHG emissions reduction of 10,000 tCO₂ / year. Doosan IMGB, controlled by the South-Korean Group Doosan, is Romania's largest forging and casting company. The company produces heavy cast and forged components for

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power generation, nuclear industry, metallurgical cement and mining, shipbuilding and general machinery fields.

- **EEFF Award for the Tastiest Investment (food and drink):** Kubo Ice Cream Company. The company is one of largest producers of ice cream on the domestic market. The company produces under the “Amicii” brand. The company replaced a freon-based cooling system with an ammonia-based system, using an EEFF credit of around 1.1 million EUR from BRD.

- **EEFF Award for an EE Investment by a Female CEO:** IPEC Alba Iulia (Ms. Elena Covaciu). IPEC manufactures household porcelain articles for IKEA. The company replaced an oven, two glazing lines and two presses, using a two million EUR EEFF credit from BCR. The investment raised the production capacity by over 60% and lowered the specific energy consumption by over 55%.

- **EEFF Award for Investing in Energy Efficiency:** Pion. The company, which produces pastry products, used an EEFF credit of 239,000 EUR from CEC for an automatic oven. The company reduced its energy costs by 60%.

- **EEFF Award for the Greenest Energy Efficiency Investment:** OMV-Petrom and SE-GES. In December 2009, OMV-Petrom and SE-GES signed a Build-Own-Operate-Transfer agreement. OMV-Petrom is a major oil and gas producer and SE-GES finances, develops, installs and maintains cogeneration plants for industrial companies. The project determined primary energy savings of 38,143 MWh / year and GHG emissions savings of 54,986 tCO₂ / year. The investment was financed by SE-GES using its own financial resources and a 1.1 million EUR EEFF credit from BRD.

- **EEFF Award for Commitment to Financing Sustainable Energy:** BCR, BRD, Banca Transilvania and CEC. All these banks demonstrated real commitment to sustainable energy since becoming EEFF participating banks.

6.2 REECO organised RENEXPO® South-East Europe Fair

The 3rd edition of the renewable energy and energy efficiency trade fair RENEXPO® South-East Europe was organised by the German trade fair and conference organiser REECO in November 2010, in Bucharest.

71 exhibitors from 11 European countries and over 3,000 visitors participated at the event. Some of the trade fair's themes were: wind energy, bio-energy, biogas, energy efficiency,

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hydropower, geothermal energy, solar energy and passive houses. Over 20 exhibitors from the wind energy sector showed their products and services in the Wind Park, a special trade fair area.

Some of the main biggest companies that participated at the trade fair were: ENERCON, GAMESA, Global Wind Power, PNE Wind Romania SRL, Wind Power Energy, Wind Turbine Service Romania, WKA Montage GmbH and Energobit.

The five conferences and the workshop that took place in parallel to the trade fair, attracted over 550 participants from Romania, Belgium, Germany, Austria, Italy, Hungary, Spain and England.



6.3 EFFF mission organised in Valcea

A mission of the EFFF was organised in the Valcea county in December 2010. A senior consultant of the EFFF was present in Ramnicu Valcea for meetings with the management of the private industrial companies from the Valcea county, interested to decrease the energy costs and to invest in the modernisation and rehabilitation of the installations, production lines and equipment.

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Sources consulted for this report: business mass media, the companies, official sources

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