



# **ENERGY EFFICIENCY OF BUILDINGS IN ROMANIA 2015**

**a DEMO sector brief by  
FRD Center**

**Recent dynamics of the construction of buildings in Romania**

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## A FRD Center Market Entry Services Publication



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## **A. RECENT DYNAMICS OF THE CONSTRUCTION OF BUILDINGS IN ROMANIA**

In Romania, the volume of construction work in 2014 increased by 13.4% year-on-year. In 2015, the growing trend is expected to continue. According to the National Institute of Statistics, the following numbers of construction permits have been released in the first quarter of 2015 in Romania:

- 7,176 construction permits for residential buildings (up by 3% compared to the first quarter of 2014)
- 54 construction permits for administrative buildings (up by 10% compared to the first quarter of 2014)
- 1,798 construction permits for other buildings (up by 28% compared to the first quarter of 2014)

37,672 construction permits for residential buildings and 234 construction permits for administrative buildings have been released in 2014 in Romania, according to the National Institute of Statistics. Furthermore, 6,696 construction permits for other buildings have been released in Romania in 2014, up by 12% compared to 2013.



### **Office Buildings**

In Q1 2015, three office developments have been delivered in Bucharest, with a cumulated surface of approximately 39,000 sqm. The new supply in Q1 2015 is with 47% higher compared to Q1 2014.



Nine office proprieties with cumulated surface of approximately 82,000 sqm are expected to be delivered as new stock in Bucharest in 2015. 76% of the total new supply is Class A office buildings (approx. 62,000 sqm) and the rest (approx. 20,000 sqm) is Class B office buildings.

For 2016, 11 office proprieties totalling some 300,000 sqm are under active construction in Bucharest. The North and Pipera areas continue to be a target destination for new developments, representing 76% of the new supply.

### **Industrial Buildings**

By the end of 2015, approximately 25,000 sqm of industrial spaces are expected to be added to the current stock:

- Industrial & Logistic Park Turda
- Olympian Park Cluj
- VGP Park Timisoara
- P3 Logistic Park Bucharest

### **Retail Buildings**

There have been three new deliveries of modern retail buildings in 2014 in Romania (Vulcan Value Centre in Bucharest, Auchan Drumul Taberei in Bucharest and Shopping City in Targu Jiu) totalling approximately 78,000 sqm GLA.

The 'under construction' schemes of modern retail centres that are expected to be completed by 2016 account for approximately 260,000 sqm GLA, located mainly in Bucharest and major cities such as Brasov and Timisoara.





## **B. GENERAL CONSIDERATIONS - ENERGY EFFICIENCY OF BUILDINGS IN ROMANIA**

As a significant contributor to the energy consumption, the building sector in the EU is subject to various policies, strategies and long term goals seeking to reduce its impact.

The EU ambitious climate and energy targets (known as the “20-20-20” targets) for 2020 are:

- a 20% reduction in EU greenhouse gas emissions from 1990 levels
- raising the share of EU energy consumption produced from renewable resources to 20%
- a 20% improvement in the EU’s energy efficiency.

In order to reach the objectives for 2020, the energy efficiency has a major role, a proper energy consumption being obtained by combining the energy management with the implementation of the renewable energy sources and the CO2 emissions reduction.

The improvement of the energy efficiency is a strategic goal of the national energy policy in Romania.

Stimulating investments in the energy efficiency field as well as adopting laws that are stable, predictable, transparent and easy to apply are expected to help attract major investments in this sector and develop sustainable businesses.

According to the Romanian Association for Promoting Energy Efficiency, Romania has a significant potential to improve energy efficiency by 16 - 24% from 2010 to 2020. To obtain these results, a growth of the GDP by 4 - 6% can be sustained by 2020, with no additional energy consumption.

## **C. LEGISLATION AND DIRECTIVES**

The main EU Directives in the building sector are:

- Energy Efficiency Directive (2012/27/EU)
- Directive 2010/31/EC on the energy performance of buildings (recast)
- Directive 2009/28/EC on the promotion of the use of energy from renewable sources

The Law 121/2014 on energy efficiency transposes the EU regulations set out under the Directive 2012/27/UE regarding energy efficiency into the national legislation. The main



objectives of the Law 121/2014 are to establish a coherent legislative framework in order to develop and apply the national energy efficiency policy, to improve the energy efficiency with the purpose to ensure a sustainable development and power supply security, to remove the barriers to the promotion of the energy efficiency etc.

According to the Law 121/2014, the goals of the energy efficiency policy are: the energy efficiency improvement, the indicative benchmarks for energy savings, the energy efficiency improvement measures for all sectors of the national economy, with specific reference to the introduction of high energy-efficiency technologies, the promotion of energy efficient equipment and appliances to end consumers and the development of the energy services market.

According to the National Energy Efficiency Action Plan of Romania, based on the Energy Efficiency Directive (2012/27/EU), the country' indicative energy efficiency target for 2020 is to save 10 million toe (tonnes of oil equivalent) of primary energy, which represents a reduction of 19% in the volume of the primary energy consumption.

According to the Directive 2010/31/EC on the energy performance of buildings (recast), the Member States shall ensure that all the new buildings are nearly zero-energy buildings (nZEB) by the end of 2020 and the new buildings occupied and owned by public authorities are nearly zero-energy buildings after the end of 2018. Furthermore, energy performance certificates must be issued for buildings which are constructed, sold or rented out to a new tenant.

In view of transposing the provisions of the Directive 2010/31/EC into the national legislation, the Law 159/2013 has amended the Law 372/2005 regarding buildings' energy performance.

The Directive 2009/28/EC on the promotion of the use of energy from renewable sources stipulates the requirement to introduce minimum levels of energy from renewable sources in new buildings and in existing buildings that are subject to major renovation.

### **D. EU FUNDS**

The Romanian Government encourages the construction and the renovation of buildings. One of the Government's main priorities is the absorption of the available EU funds in this sector.

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For the construction and energy efficiency of buildings, EU funds will be available in Romania through the Regional Operational Programme 2014 – 2020. The official version of the Programme has been sent by the Romanian Government to the European Commission. The Programme is expected to be approved by the European Commission in mid-2015.

RoSEFF is a financing programme of 60 million EUR from the European Union and the European Bank for Reconstruction and Development. RoSEFF has been established with the purpose to help Romanian small and medium sized enterprises and housing associations invest in energy efficiency and renewable energy solutions.

So far, 185 RoSEFF investments, representing 37 million EUR of lending, are under-way or complete. The investments are in the following sectors: agriculture, metalworking, plastic production, wood processing, printing, food processing, hotels etc. The eligible measures and equipment include: electrical equipment, renewable energy equipment, gas boilers, burners and infra-red heaters, lighting systems, building renovation (external wall insulation, flat roof insulation and energy efficient glazing), cogeneration and tri-generation systems, compressors, heat pump systems etc.

The participating financial institutions at the RoSEFF financing line are: Banca Comerciala Romana (BCR), BRD Groupe Societe Generale, Banca Transilvania and Unicredit Tiriac Bank. The project consultant is a consortium led by Tractebel Engineering SA.



### **E. SUCCESSFUL ENERGY EFFICIENCY PROJECTS – EXAMPLES**

Most developers are currently investing in smart buildings with modern HVAC systems. Some examples of successful recent energy efficiency in buildings projects in Romania are shortly presented below:

1. Portland Trust has developed the **Floreasca Park** which is an eco-friendly office project located in Bucharest. Floreasca Park comprises two buildings with the total leasable area of approximately 37,500 sqm.

Due to the extensive underground geothermal heat pump system, Floreasca Park has received a BREEAM Excellent rating. This system generates significant financial savings to the tenants, as up to 40% less energy is used in heating and cooling.

**Floreasca Park** has won various awards: Best Office Building of the Year at the Central and Eastern European Quality Awards (CEEQA) in 2014, Office Development of the Year at the South Eastern Europe Real Estate Awards (SEEQA) in 2014 and Green Building Project of the Year at the ROGBC Awards organised by Romania Green Building Council (RoGBC) in 2014.





2. By March 2015, the **European Investment Bank (EIB)** has provided financing amounting to approximately 327 million EUR to finance the energy efficiency refurbishment of multi-apartment buildings in the Sectors 1, 2, 4 and 6 in Bucharest.

In March 2015, the EIB and the Municipality of Bucharest (Sector 1) have signed a finance contract of 22.6 million EUR (the second tranche of an approved EIB loan for a total amount of 136.5 million EUR) in order to finance the second phase of the programme to refurbish multi-family housing in the Sector 1 in Bucharest. The investments under the first tranche of 22.5 million EUR, signed in July 2014, are underway. The project is expected to result in approximately 50% savings in the heating energy consumption of the buildings.

3. The **Hermes Business Center** is an office building and commercial property complex of approximately 75,000 sqm located in Bucharest. The project is implemented in three phases. The first phase has been achieved in 2014 and all the offices are leased. The end of the second phase is scheduled for the first quarter of 2016. Hermes Business Center will be certified BREEAM “Excellent”.



4. **GDF SUEZ Energy Romania** has supported Habitat for Humanity Romania to rehabilitate 12 houses in the SOS Children’s Village in order to improve their energy efficiency. The renovation works have improved the living and learning conditions for over 134 beneficiaries of the programme. The project has taken place during 2013 – 2014. GDF SUEZ Energy has over 1.5 million customers and operates 18,500 km of network in Romania.

## **F. MODERN LIGHTING OPPORTUNITIES**

Romania has significant potential to reduce the energy consumption for lighting and the associated carbon emissions, the ultimate target being to achieve net zero-energy lighting in buildings. The future is represented by advanced optimised day-lighting and state-of-the-art electric lighting based on renewable energy sources.

The methods to achieve net zero-energy lighting include: to minimise lighting energy consumption, to minimise lighting loads, to use highly-efficient lighting technologies, to use adequate lighting controls, to maximise daylight use, to use advanced day-lighting techniques or to use renewable energy.

The modern lighting is a key solution to improve the energy efficiency and an important tool to increase the operational efficiency. Given the Romania's commitment to align to the EU standards in terms of the energy efficiency, the implementation of the modern lighting projects is a priority, especially in the segment of the public lighting.

In addition to the installation of the LED lighting systems, the Romanian authorities take into consideration the implementation of the control systems. Therefore, besides the improved energy efficiency, a significant reduction in the maintenance costs and an increased flexibility in terms of the management of the lighting systems are obtained.

According to representatives of the Public Lighting Department within the Bucharest City Hall, the electricity consumption has decreased by 25 - 40% annually in the areas in Bucharest where new LED luminaires have been installed.



## **G. ESCO OPPORTUNITIES**

A key role in the implementation of the energy efficiency measures in Romania is assumed by the Energy Services Companies (ESCO).

Some examples of main ESCO type companies operating in Romania are: Energy Serv, EnergoBit ESCO, TEB Energy Business, Servelect, EnergoEco, Eneas Romania etc. In 2013, they have recorded a cumulated net turnover of approximately ten million EUR.

Set up in 1996, Energy Serv offers services of technical and economic analysis in energy, thermal imaging, Therma-Chem FS-12 and high-efficiency cogeneration. The company targets to contribute to the reduction of the greenhouse gas emission through better energy efficiency and decrease of specific fossil fuel consumptions, efficient use and promotion of renewable energy sources and technologies. Some of the company's main clients are: Vaslui Municipality (local public administration), Rompetrol (refinery sector), Pehart-Tec (pulp & paper sector) etc.

Other examples of co-generation plants put in operation in the recent period by various ESCO firms operating in Romania include several projects in the BOOT system carried out by SE-GES:

- Sam Mills cogeneration plant - the first project for the Romanian milling industry
- Isovolta
- Zentiva
- URSUS cogeneration plant - a pilot project for the Romanian beer industry





## **H. HVAC OPPORTUNITIES**

The imports of the air-conditioning machines have recorded approximately 140 million EUR in Romania in 2014, up by some 13% compared to 2013.

The HVAC sector in Romania is heavily influenced by the activity in the construction field, with the majority of the sector income generated from HVAC installations in new residential and non-residential structures.

Some examples of main companies operating in the HVAC sector in Romania are:

### A. Producers of industrial fans and industrial heat-exchangers:

Ruck Ventilatoare, VP Industries Romania, Metalica, Alwo Therm, IAICA

### B. Importers and integrators of HVAC:

AVI Compact, Climalux Center, CEMS Tehnologii

These companies have recorded a cumulated net turnover of over 27 million EUR in 2013 compared with approximately 25 million EUR the previous year, this representing a y/y increase of some 9%.

Established in 2003, **AVI Compact** is one of the major companies supplying HVAC integrated solutions in Romania. Some of its main reference projects are:

- Crystal Tower Business Center (air conditioning and ventilation systems)
- Bucharest Financial Plaza (heating, air conditioning and ventilation systems)
- Cismigiu Hotel (air conditioning and ventilation systems)
- My Residence Complex (air conditioning and heating systems on a surface of 18,000 sqm)
- Iride Business Park (heating and air conditioning systems on a surface of 4,300 sqm)
- Alexandria County Hospital (heating and air conditioning systems)

**AVI Compact** forecasts turnover increases for the future in the context of the significant demand for projects of energy efficiency on the corporate segment.

**DAAS** is a major provider of professional equipment and services for hotels, restaurants and retail units in Romania. In 2014, DAAS has decided to develop a new line of business – HVAC - by providing ventilation and air conditioning installations to restaurants, hotels, office buildings, hospitals, cultural units etc. DAAS has recorded a turnover of approximately 3.1 million EUR in the first trimester of 2014, up by some 27% compared to the similar period of the previous year. Some of its main clients are Auchan, Mega Image or Rewe Group.

EXAMPLES OF RECENT PROJECTS / DEVELOPMENTS

The underground parking that serves the **Intercontinental-National Theatre complex**, located in downtown Bucharest, has been officially reopened in February 2015, after two years of revamping works. The works have included the total revamping of the ventilation, plumbing and electrical systems and the complete restoration of the floor, ceiling, walls and pillars. The parking has been equipped with license plate readers, automatic payment systems, systems that detects and signals vacant spaces, data-voice systems and CCTV.

The conversion works of the **Starlight Suites Hotel** in Bucharest into offices have been finalised in 2014, with total investments of approximately one million EUR. The conversion process has involved the replacement and reconfiguration of the air conditioning and ventilation systems and the electrical and plumbing installations.

The rehabilitation works at a beautiful historic building constructed in 1881 in Bucharest have been finalised in May 2014, with investments of approximately 1.5 million EUR. The building - **Noblesse Palace** - has been carefully tailored to the requirements of the modern times. Its rooms have been equipped with air conditioning systems, video projection and audio hi-fi.





## **I. BMS OPPORTUNITIES**

The segment of the Building Management Systems (BMS) has a significant growing potential in Romania.

Implementation of BMS has major benefits, such as:

- decrease of the electrical power costs
- decrease of the administrative costs and of the equipment maintenance costs
- increase of the building value (by becoming a “green building”)
- centralised building control and monitoring from dispatch and remote locations
- obtaining of the comfort parameters specific to the performed activities
- minimizing of the intervention time needed for damage repairs
- quick response to user requests and
- increase of the lifetime of installations and equipment

There are approximately 40 integrators of Building Management Systems (BMS) in Romania. Some examples are:

- Avitech Co – the company has recorded a net turnover of almost 27 million EUR in 2013, up by approximately 100% compared to 2012
- ETA2U – it has registered in 2013 a net turnover of 23 million EUR, up by some 4% compared to 2012
- I Wave Solutions – the firm has reported a net turnover of 1.5 million EUR in 2013, 53% higher compared the previous year

As examples of references in the BMS sector, the integrator I Wave Solutions has clients in the retail field (Galleria Mall in Arad, AFI Palace Mall in Ploiesti), office building area (AFI Business Park in Bucharest) and industrial field (Pirelli in Slatina).

Some recent projects with integrated BMS are:

- Amera Tower in Cluj-Napoca
- Hermes Business Campus Bucharest
- Hypermarket Cora Constanta
- Arion Green Bucharest
- RC Office Park Pitesti
- Floreasca Park Bucharest
- City Business Centre Timisoara

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Local developers that use BMS in their constructions include:

- Portland Trust Romania
- ModaTim Investment SA
- Raiffeisen Evolution
- Cora România
- Amera Group
- Search Corporation



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