

Financing Energy Efficiency projects in Romania

October, 2017





BCR brand

- **Established in 1990** by taking over the commercial banking operations of the National Bank of Romania.
- Most important financial group in Romania, providing universal banking operations:
 - **Assets: EUR 14.8bn**
 - **Customers: 3.1mn**
 - **Market Share: 16.3% by total assets** → market leader
- BCR is the **most valuable financial brand in Romania**, according to level of **customer trust** and **number of clients**.



Integration into Erste Group

- Since **2006** BCR is a member of **Erste Group**;
- Erste Group was **founded 1819** as the first Austrian savings bank;
- Since 1997 Erste Group has developed through acquisitions and organic growth to one of the largest financial services providers in the Eastern part of EU in terms of clients and total assets;
- **47,350 employees, 16.2mn clients, 2,635 branches in 7 geographically connected countries**;



Commitment to Romania

- BCR is Romania's leading retail and corporate bank in terms of total asset, lending and savings;
- BCR has been the **main supporter of the Prima Casa program** (about 20% market share);
- **BCR co-financing in EU funded projects: EUR 1.7bn**;
- **2016 Erste Group Net Profit: EUR 1,265mn / H1 17: EUR 625mn**;
- **2016 BCR Group net profit: EUR 233mn / H1 17: EUR 67mn**;

Selected credentials

Energy Sector is a key interest for BCR and ERSTE Group, as it plays a very important role in the development, sustainability and security of Romania

Private sector

High Efficiency Cogeneration Projects:

- ▶ 42 MWe + 110 MWt



Renewable Energy Projects:

- ▶ 420 Mwe
 - 79.7 Mwe micro-hydro power plants
 - 304 Mwe wind power plants
 - 35.7 Mwe photovoltaic power plants
 - 1.5 Mwe biogas power plant



Energy Efficiency Projects:

- ▶ 48 loans of EUR 28 mio granted under EU/EBRD EEFF (Energy Efficiency Finance Facility)
- ▶ 34 loans of EUR 8 mio granted under EU/EBRD ROSEFF (Romania - SME Sustainable Energy Efficiency Financing Facility)

Public sector

Thermal Power Projects:

- ▶ 990 MWe producing only power
- ▶ 82,1 MWe and 1,151 MWt producing in cogeneration
- ▶ 90 MWt producing only heat





Energy Efficiency at European Level

- The Energy Efficiency Directive (EED 2012/27/EU) adopted on 25 October 2012 **had to be transposed by all Member States (MS) by the beginning of June 2014.**
- Common framework of measures for achieving the **Union's 2020 20 % headline target on energy efficiency**, aim at all stages of the energy chain: generation, transformation, distribution and final consumption; with focus on the public transport and **building sectors**, where the potential for savings is greatest.
- Under the Clean Energy for all Europeans package, **EU has committed to cut CO2 emissions by at least 40% by 2030.** The proposal has three main goals: **putting energy efficiency first**, achieving global leadership in renewable energies and providing a fair deal for consumers.

Energy Efficiency in Romania

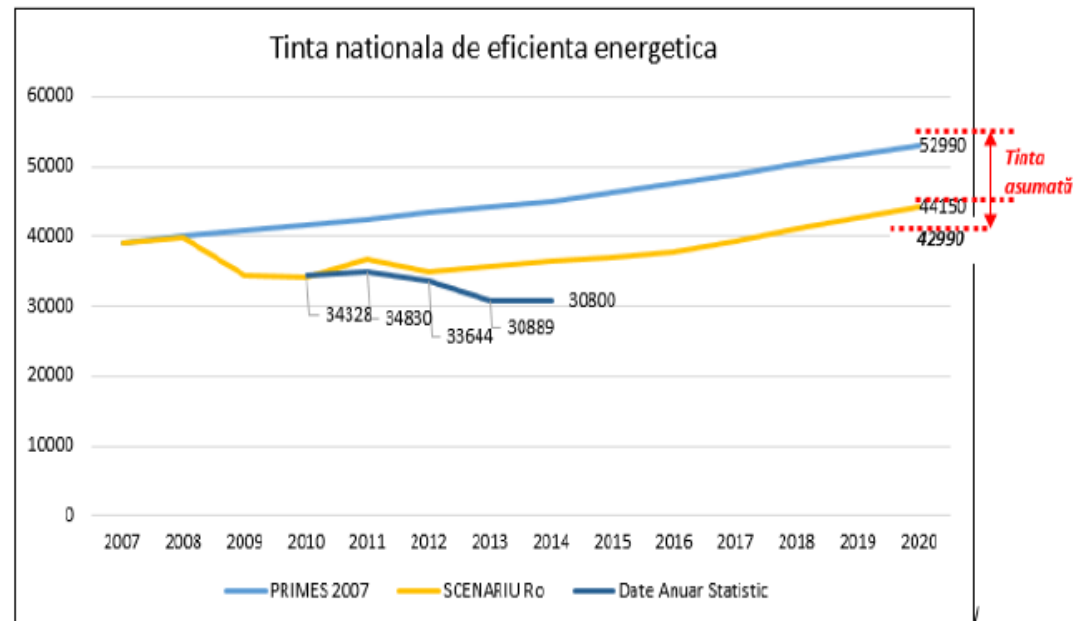
- The Energy Efficiency Directive was transposed in local legislation by Law 121/2014, further modified and amended by Law 160/2014, with an **indicative energy consumption reduction target of 19% by 2020.**
- Renewable energy support scheme set-up by Law 220/2008;
- Government Decision no 1215/2009 for implementing the support scheme on the promotion of high efficiency cogeneration based on the useful heat demand;
- **National Energy Efficiency Action Plan NEEAP (PNAEE 2014-20) of Romania** – approved by GO 122/2015

Energetic consumption

- Starting with 2013, Romania has experienced an abrupt reduction of the final energetic consumption especially in the industry, although the industrial production has increased. Many sectors underwent energy efficiency projects driven mainly by EU and state grants.
- Even though Romania has one of the lowest primary energy consumption in the EU: 1.544toe/capita compared with 2.973toe/capita (EU average), the energy utilization inefficiency ('primary energy intensity') is nearly 2 times higher (0.235toe/1000 EUR 2010) than the EU28 average (0.122toe/1000 EUR 2010) in 2014.
- But the energy intensity is decreasing by 4.5%/year vs the EU average of 2% reduction/year, Romania being the best performer over the period 2007-13.
- Other positive factors that drove efficiency upwards:
 - Closing of district heating networks
 - Reduction of industrial need for energy, either by decommissioning or by efficiency projects
 - Renewable energy target of Romania of 24% in 2020 was already achieved in 2015 with 24.8%

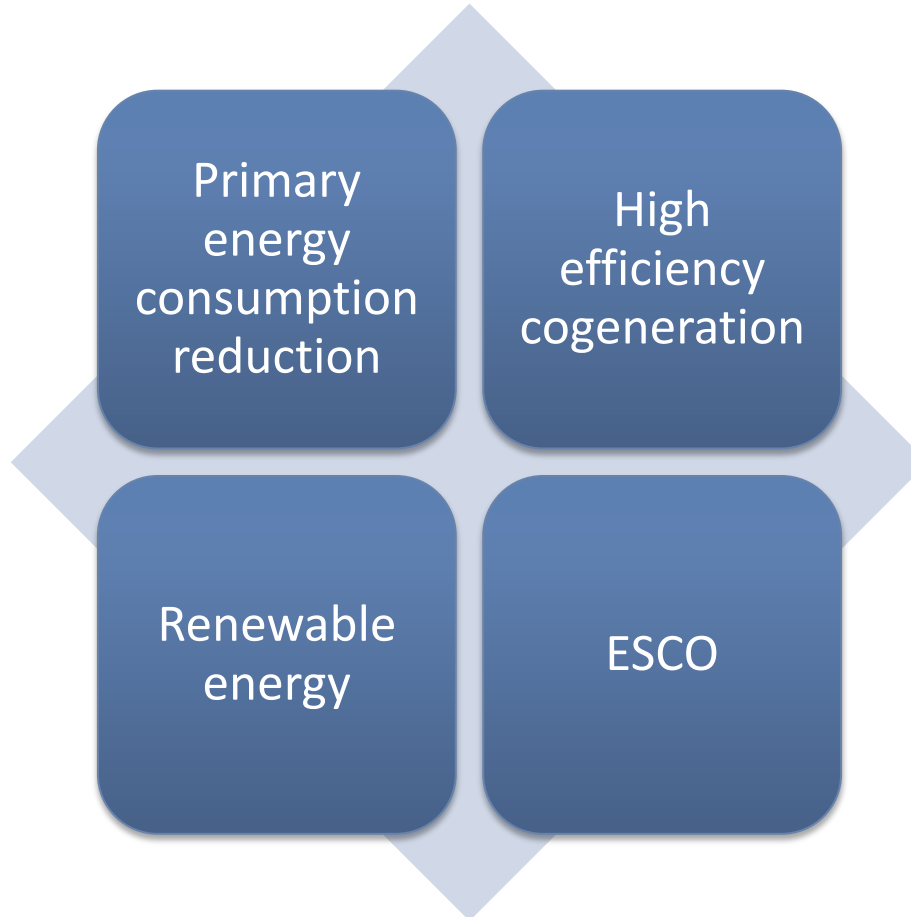
National targets

- National target of primary energy consumption is **42.92Mtoe in 2020**; **current consumption is 31.29Mtoe (2015)** that is 14.5% below the estimated trend, which shows that the assumed target can be attained easily.



Energy Efficiency

What is Energy Efficiency



▪ What is an Energy Service Company (ESCO)

- „**Energy Service**“ means the physical benefit, utility or good derived from a combination of energy with energy efficient technology or with action, which may include the operations, maintenance and control necessary to deliver the service, which is delivered on the basis of a contract and in normal circumstances has proven to result in verifiable and measurable or estimable energy efficiency improvement or primary energy savings
- “**Energy Performance Contracting**” means a contractual arrangement between the beneficiary and the provider of an energy efficiency improvement measure, according to which the payment for the investment made by the provider is in relation to a contractually agreed level of energy efficiency

▪ Energy Performance Contracting (EPC)

- Procurement of works and services on basis of NPV
- Contents: system analysis, pre-financing, design, implementation & optimized operation of entire building, controlling
- Payments based on achieved savings
- Requirement: long, stable use of building; Ideal application: public buildings

Mature markets

Tested legal framework
Longer tenors for EPC
Significant investments => unlocking the full savings potential
Well developed ESCO companies
Interest of equity and debt providers to invest

Best practices

New EPC markets

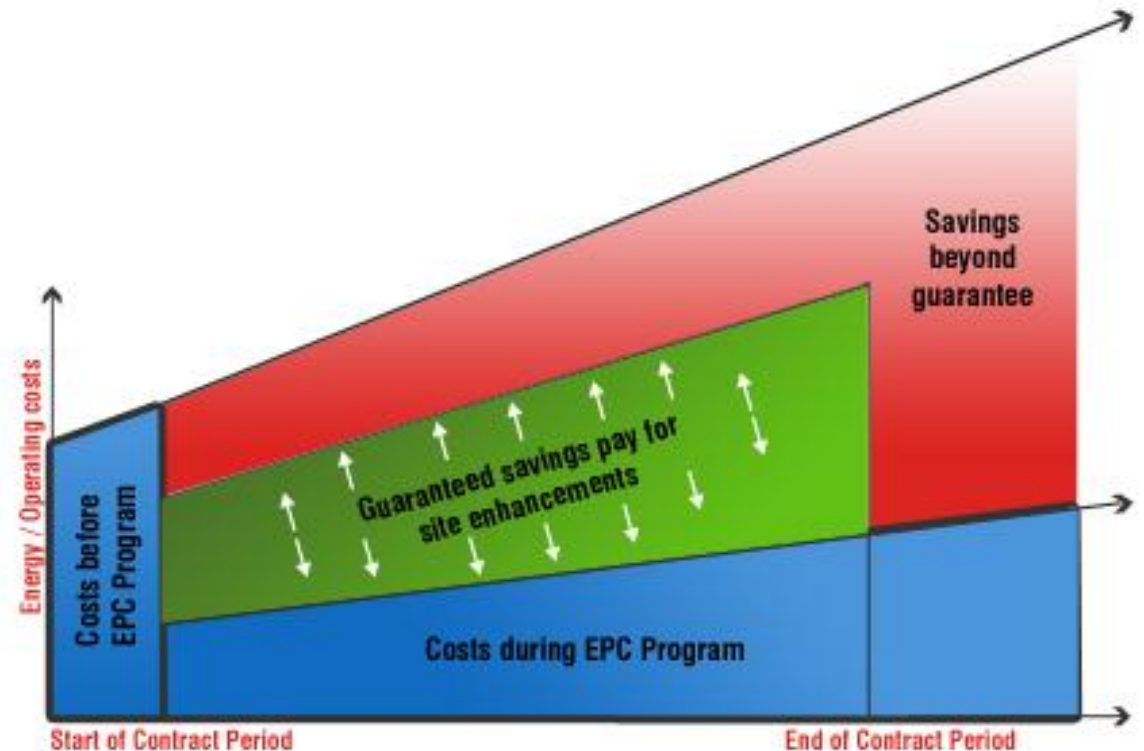
Legal uncertainties which are perceived as risks
Limited contract timeframes
Limited investments => limited savings
Thin balance sheet of ESCO companies
Limited understanding & willingness to invest by both banks and equity providers
Ambiguous and time consuming procurement process

Energy Efficiency

Energy Performance Contract

By definition, ESCOs conclude Energy Performance Contracts (EPCs) with clients, the core of which is the performance guarantee

- Lower energy bills and lower energy consumption
- No upfront capital for the beneficiary
- No increased leverage for the beneficiary
- ESCO to identify energy savings / modify existing inefficient systems
- The remuneration of ESCO is directly tied to energy savings
- Energy savings are shared between ESCO and beneficiary
- Payment schedule with a single-source responsibility
- Decrease operational load for the beneficiary (the energy management is provided by the ESCO)
- Expert support for the entire duration of the contract (typically 10-15 years)
- Positive impact on the environment



Energy Efficiency

Financing Energy Efficiency Projects

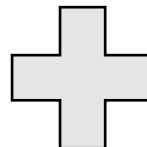
Private sector

Without ESCO

- The risk entity is the company (its performance is subject to market developments etc.)
- EE not the core business of the company, lack of expertise
- Financial standing of the company is important
- Leverage limitations

With ESCO

- Two risk entities: the company & ESCO (performance risk)
- Financial standing of both entities is important
- Contamination with other projects developed on the same ESCO
- Collateral limitations depending on ownership transfer
- In case of many EE projects, ESCO might become too leveraged at some point



Public sector

With ESCO

- Unclear and unaligned regulatory framework
- No support from the State due to public debt limitations
- EUROSTAT interpretation of the impact of EPC contracts on the government accounts as public debt => the only advantage is that there no cash outs for the public entity
- Off-set of payments to ESCO with unpaid taxes
- In some cases the energy savings are not enough to cover the investment
- No hard assets as collateral (building insulation) and difficult to be enforced
- ESCO services (building insulation has also a visual effect => Higher contribution from the State)

Complexity

Market size and potential development

- EPC market is stagnant, measuring EUR 3-5 mil, despite the measures put in place for promoting the ESCO market.
- Theoretically, the remaining saving potential via ESCOs is very large, because of the obsolete state of buildings and facilities, which are still untapped - but the technical saving potential is almost zero.
- According to the JRC survey, there is a EUR 780 mil/year potential investment for both private and public sectors.

ESCO's development

- In 2016, close to 20 ESCOs operate in Romania, but only 7 have been certified by ESCOROM, the ESCO Association. They are consulting and engineering firms, equipment producers, manufacturers and retailers, facility managers and energy suppliers – mostly small companies. The ESCOs mainly operate in the industrial and co-generation sectors, but also in street-lighting projects.
- Still, linking payment to performance is not fully applied, because of the reluctance causing performance-linked ESCO projects to be remunerated only if a certain economy is achieved over a short period of time.

Technical assistance from IFIs

- EBRD provides free technical assistance to municipalities to prepare energy efficiency projects in public buildings. Currently, there are 4 pilot projects under EBRD program, but the implementation has been delayed so far.

Challenges and barriers

- Despite the introduction of the EPC definition, the legal landscape is vague for the practical implementation, since the legal and procedural frameworks – also a model contract template – are missing.
- There are sometimes problems with the payment behavior of the beneficiaries, and payment guarantees are not well developed.
- The procurement process is still too ambiguous and time consuming for local ESCOs, and the fact that EPC is not regulated in procurement contracts makes bid for energy rehabilitation and public street lighting systems non-accountable.
- Project preparation is difficult, due to insufficient and unclear data (especially baseline for consumption) and the lack of coherence between the procedures of the different institutions (ANRE, ANRSC, ANAF, and others).
- In the case of bank financing, availability and cost of long-term debt to match EPCs with long repayment profiles might be very high, affecting ESCOs cash flows.
- Finally, the EUROSTAT accounting and its understanding results that EPC projects are added to the value of the government debts, which are, on the other hand, limited by the EU legislation (Directive 2011/85/EU on requirements for budgetary frameworks of the Member States and related regulations).

Financing the ESCOs

Standard Lending Principles

Conditions

Strong ESCO

Strong beneficiary

Strong terms of EPC

Minimum Equity Level

Permitting, if the case

Technology, if the case

Off-take Agreements, if the case

Clean legal & technical DD, in the case

Insurance

Other

Details

Capabilities to sustain the project, extensive track record, excellent financial standing.

Full transparency over the Beneficiary activity; strong financial standing proving the capability to continue its activity for the EPC duration.

Long term binding EPC, providing for sufficient guarantees and a balanced risk allocation between parties.

20 - 30%, but subject to debt sizing criteria (min. DSCR level).

All needed permits and authorizations in place.

Only proven technologies supplied by reputable suppliers with proper maintenance program in place.

Long term off-take agreements with reputable parties accepted by the lender.

Review of technical specifications, performance parameters, yield forecast, permitting, real estate, corporate, legal framework and project contracts.

Suitable insurance package, with reputable insurers.

In some cases market reports, environmental studies etc. are also required.

Thermal system in Romania

Overview

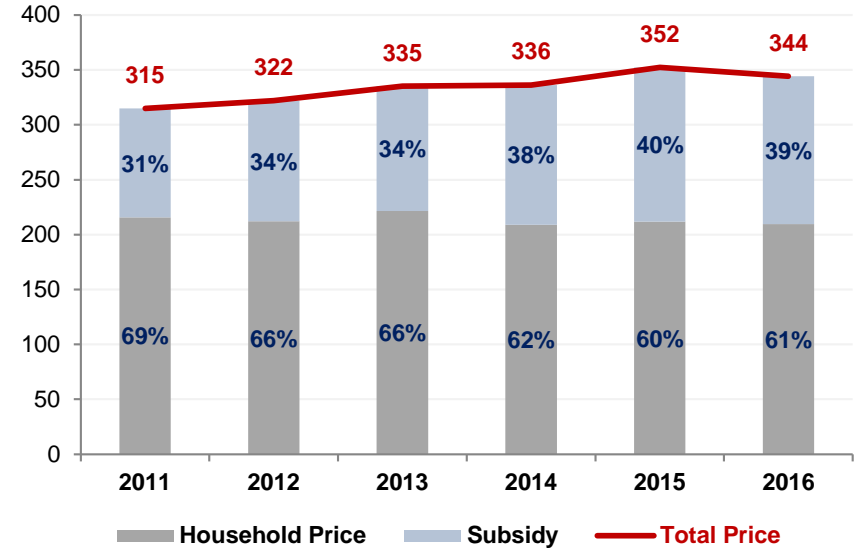
Evolution:

- 1989 ▶ 4,000MW and app. 2.7 mil households connected
- 2016 ▶ 2,300MW and app. 1.2 mil households connected
(more than 200 cities abandoned the DHS during 1989 - 2014)

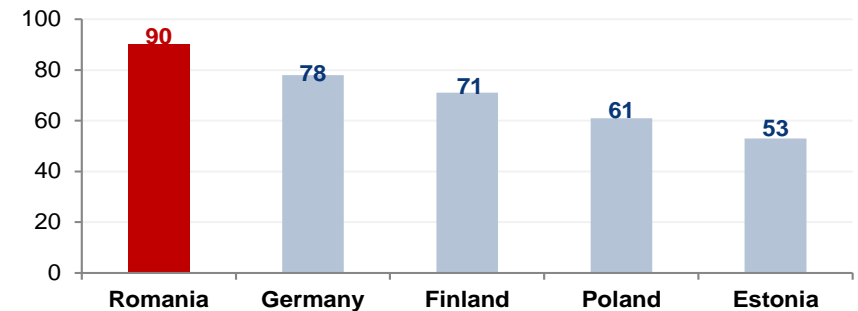
Issues:

- ▶ Oversized Installed Capacity in Romania;
- ▶ Massive Disconnections (every year 2-5% of total number of flats turn to Individual heating systems);
- ▶ Cogeneration used in only 20 out of 64 Cities with DHS;
- ▶ Regulated Prices in order to protect the Consumer;
- ▶ Subsidized System, maintaining the inefficiency;
- ▶ Obsolete CHPP and Distribution Networks with Technological Losses of 35-77%;
- ▶ Lack of Funds from Local Authorities for DHS Rehabilitation;
- ▶ New Environmental Constrains from 2016.

Average heat supply price (RON/Gcal)



Heat price - EU comparison (USD/Gcal)

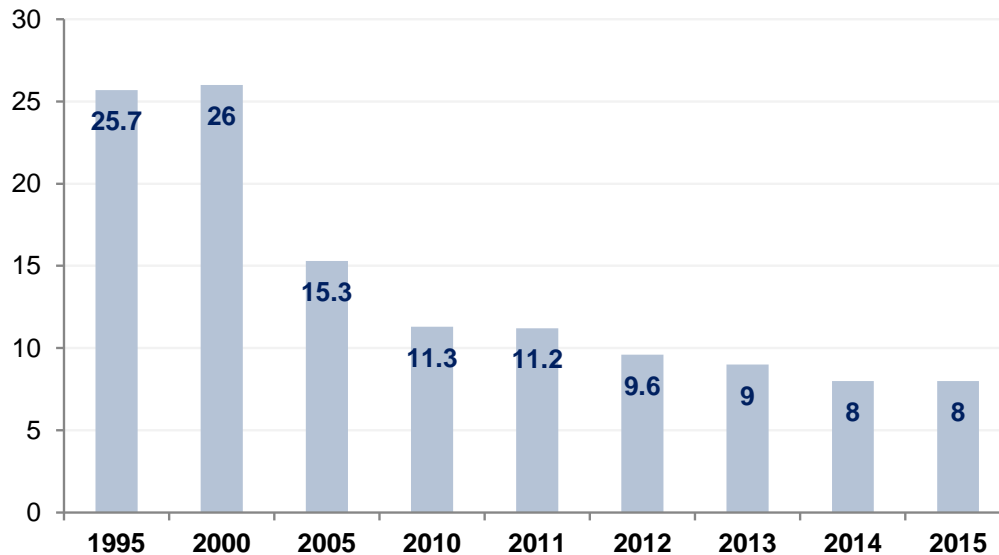


Thermal system in Romania

Overview

- **Total Heat Consumption decreased from 59 mil Gcal in 1992 to 13 mil Gcal in 2015** due to industry contraction and disconnections of residential consumers (switch to individual heating solution boomed 2000-2004)
- **Frequent Insolvency and Bankruptcy for both Heat Producers and Distributors:** Braila, Bacau, Piatra-Neamt, Suceava, Galati, Brasov, Iasi, Drobeta Turnu Severin.
- According the ANRSC (2015) the thermal system in Romania is close to bankruptcy: **Cumulated Debt is of app RON 5.4bn vs. Cumulated Receivables of app RON 1.7bn.**

DH Household Consumption (million Gcal)



Connection Rate to DHS

City	2008	2016
Bucharest	82%	81%
Timisoara	72%	48%
Ploiesti	92%	72%
Giurgiu	95%	25%
Zalau	5%	0%
Resita	17%	0%
Paroseni	27%	0%
Braila	35%	0%
Average	65%	58%

Thermal system in Romania

BCR financing approach for cogeneration power projects in Romania

Advantages

- ▶ High unutilized potential (especially for small gas plants);
- ▶ Reliable energy source (high load factor);
- ▶ Low technology risk (proven technology);
- ▶ Stable energy production;
- ▶ High efficiency → responsible use of energy sources.

Main risks

- ▶ Complex operation phase;
- ▶ Disconnections;
- ▶ Obsolete heat network due to lack of investment;
- ▶ Oversized heat network => inefficiency;
- ▶ Regulatory risks associated to incentive schemes;
- ▶ Poor collection rate for the producer (non-payment from end users, losses, subsidies paid with delays).

Critical success factors

- ▶ Strong Sponsor committed to the project able to cover any adverse change in the regulatory scheme;
- ▶ Strong EPC Agreement – experienced constructor, and supplier of technology;
- ▶ Clean legal and technical due diligence performed by the Bank's consultants;
- ▶ Performance Guarantees and Maintenance Agreement from technology supplier;
- ▶ **A.** Long-term Off-take Agreements for heat (financial standing and minimum number of connections of the heat distributor) **OR**
B. Integrated business where the producer also operates the grid;
- ▶ Upgraded grid with reduced losses;
- ▶ Guaranteed payments from the supplier to the producer (from the local municipality, escrow accounts etc.);
- ▶ Insurance cover during construction and operation for project company and construction & technology suppliers.

Renewable electricity market in Romania

Renewable Energy market

Generous incentive scheme granted by the Romanian State for RES Projects that boosted investments

Indicative Overall RE National Target for 2020 has been fulfilled from 2015

5,145MW installed of RE Projects as of 31 Dec 2015

As a result the law has been amended: from predictable annual E-RES quotas until 2020 to annually ANRE set quotas

The quotas set by ANRE are lower with the aim to limit investments and limit the impact of GCs in the electricity bills of final consumers

15% from GCs issued in 2016 remained unsold at the end of reporting period

Solvency Problems for Existing RE-Projects

Law amendment to increase GCs annual absorption and improve industry profitability and decrease volatility

Team and Contacts



Cristina Ghimbovshi

Banca Comerciala Romana
Head of Infrastructure and Specialised Lending
Bucharest, 15 Calea Victoriei, 3rd District

Tel.: +40 373 516 653

Mobile: +40 785 252 993

cristina.ghimbovschi@bcr.ro



Oana Roxana Mogoi

Banca Comerciala Romana
Energy Infrastructure Coordinator
Bucharest, 15 Calea Victoriei, 3rd District

Tel.: +40 373 516 524

Mobile: +40 726 168 576

[oanaroxana.mogoi@bcr.ro](mailto: oanaroxana.mogoi@bcr.ro)



Raluca Georgiana Badau

Banca Comerciala Romana
Energy Infrastructure Specialised Finance Manager
Bucharest, 15 Calea Victoriei, 3rd District

Tel: +40 373 515 597

Mobile: +40 784 240 872

ralucageorgiana.badau@bcr.ro



Mihai Dorin Voican

Banca Comerciala Romana
Energy Infrastructure Specialised Finance Manager
Bucharest, 15 Calea Victoriei, 3rd District

Tel: +40 373 516 525

Mobile: +40 733 040 225

mihaidorin.voican@bcr.ro



Sebastian Mihai Stacu

Banca Comerciala Romana
Energy Infrastructure Specialised Finance Manager
Bucharest, 15 Calea Victoriei, 3rd District

Tel: +40 373 515 571

Mobile: +40 784 242 375

sebastianmihai.stacu@bcr.ro