



D6.9 Minutes to the final dissemination workshop - Romania

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## **“From ambitious design to implementation. An action plan for Romania”**

### **ENTRANZE workshop on stimulating building renovation in Romania**

#### *Renovating Romania*

#### *A strategy for the energy renovation of Romania’s building stock*

### **Introduction**

BPIE organised a workshop on April 4 in Bucharest to present BPIE’s analysis of the Romanian building stock to a large group of stakeholders including the Minister of Energy, Razvan Nicolescu. The event was moderated by Oliver Rapf (Executive Director BPIE) and was dedicated to discussing the Romanian renovation strategy, scenarios and policy recommendations. In context of the IEE project ENTRANZE, various policy sets and pathways to 2030 for renovating existing buildings were modelled.

This event came at an opportune time as Member States have to report their national renovation strategies by April 30, 2014 complying with Article 4 of the EED, entitled “Building Renovation”.

The event was an opportunity for stakeholders to learn about potential EU funding opportunities and approaches in other MS (e.g. to know the French experience in elaborating and implementing a renovation policy), presented by guest speakers from the EU Commission and the French “Plan Bâtiment Durable”.

The BPIE was very happy to welcome the Romanian Minister of Energy, Razvan Nicolescu, who reiterated that energy efficiency is a priority and launched a call for action to all the participants to actively contribute to the development of an ambitious renovation strategy and its implementation.

For a more comprehensive picture, representatives from the Romanian Ministry of Regional Development and Public Administration (MDRAP) presented the current Thermal Rehabilitation Programme for residential buildings and the upcoming developments relating to the investment programme that uses European Funds for the period 2014-2020. Cristian Stamatiade, General Manager at MDRAP, shared his concerns about recent seismic activity in Romania and the need to

firstly consolidate buildings before proceeding with renovation works. He also underlined the need for Romanian authorities to strike a balance between financing means and the impact of these rehabilitation measures.

Both the study - *Renovating Romania. A strategy for the energy renovation of Romania's building stock* – and the presentations lead to fruitful discussions with the audience (70 people) and received very positive feedback.

## More on the content

Reducing energy use in the building sector has become an issue of strategic importance, both nationally and internationally. To this end, EU policy addressing energy use in buildings has been strengthened in the last few years, firstly with the recast of the Energy Performance of Buildings Directive, EPBD, (2010/31/EU2) in 2010, and more recently with the new Energy Efficiency Directive, EED (2012/27/EU3).

In accordance with the requirements set out in the Energy Efficiency Directive (Article 4), *Renovating Romania* outlines scenarios and policy recommendations for the renovation of Romania's building stock.

The study was developed to assist the Romanian Government in fulfilling its commitment with regard to Article 4 of the EED, entitled "Building Renovation". The Directive requires all Member States to report their national renovation strategies by April 30, 2014. At the same time, the strategy is designed to stimulate debate among stakeholders, with a view to securing a broad consensus around the future direction of policies and initiatives addressing buildings energy performance in Romania.

*Renovating Romania* provides an opportunity to encourage the Government and other stakeholders to consider a level of ambition that would be appropriate to improve the quality of the nation's homes and workplaces, for the current and long term benefit of Romanian citizens and the good of the economy. To illustrate the scale of that ambition, this strategy proposes the renovation or rebuilding of all of Romania's homes, farmsteads, workplaces, hospitals, factories, retail premises and the myriad of other buildings, to high energy performance standards by 2050.

In the study development, BPIE took into consideration the feedback of national stakeholders who participated in its consultation event held in November 2013.

The study is split into two parts, the first (now available in EN and RO) outlines the actual strategy for the energy renovation of the Romanian buildings stock, and the second part (draft version available in RO, final version will be available in EN, summer 2014) showcases the results of the IEE project ENTRANZE on modelling the selected policy sets for Romania and pathways to 2030 for renovating existing buildings.

## Key facts on the Romanian building stock

1. Romania is the second largest country within the EU Member States from Central and Eastern Europe (after Poland). The housing stock in Romania consists of around 8.2 million dwellings in an estimated 5 million buildings. Up to 40% of dwellings are situated in urban areas in multi-family block of flats. The biggest share of single-family houses is in rural areas. The normal lifespan of buildings in the Romanian housing stock is often exceeded and in many cases the buildings are made with low quality materials. This is the consequence of past policies which focused on minimal investments (despite higher operating costs). Almost all residential dwellings (97%) are privately owned and inhabited by the owners. After 1989, residential dwellings in blocks of flats (mainly state-owned property until then) were sold by the state to their inhabitants and many old buildings which had been taken by the state under the communist regime were returned to their owners.
2. More than 50% of residential buildings were built before 1970 (more than 40 years old), and have a poor energy performance level (between 150-400kWh/m<sup>2</sup>). A feature of the building stock is the rather high number of buildings in urban areas connected to district heating networks: some 2.47 million dwellings, most of them apartments (approx. 2.4 million).
3. Public sector buildings represent an important share of the existing building stock (4.82 %) and have a large energy saving potential.
4. The estimated potential for energy savings is about 1.2 million TWh/year, and the CO<sub>2</sub> reductions could be 1.5 million tonnes CO<sub>2</sub> eq/year. To achieve such objectives, however, more ambitious programmes for the thermal rehabilitation of existing buildings would be required. The current economic crisis points to the need for making better use of EU Cohesion and Structural funds.

## The presentations

At a European level, the intervention of Tudor Constantinescu, Principal Advisor for DG ENER, shed some light on the challenges ahead, the funding available for Member States (MS) to promote energy efficient measures and the milestones to reach.

The major challenges in Europe relate to import dependency, high energy prices and decarbonisation. In order to overcome them the EU has provisionally proposed 2030 targets such as reducing greenhouse emissions by 40% and an EU level target of at least 27% as the share of renewable energy. To this end the EU reiterated that energy efficiency will continue to play a significant role in delivering the Union's climate and energy objectives. Reaching the EE goals depends on a few elements such as:

- Implementation of the existing framework

- Identify good projects
- Ensuring access to finance
- Define new objectives and policy measures for the future.

Concerning the EU framework, it is important to mention new developments relating to the 2030 targets. The current policy, Europe 2020 strategy, sets a non-binding target of a 20% improvement in EE: this means a 20% reduction of primary energy consumption compared to the hypothetical projected consumption for 2020, or a 13.5% reduction compared to 2050.

The Energy Efficiency Directive (EED) sets out requirements for Member States (MS), among them: renovation of public buildings, energy audits for large companies, an obligation for energy utilities to help customers reduce their energy use.

MS set their own indicative national targets. They had until April 2014 to submit action plans and until June 2014 to implement the provisions of the Directive. One of the key points mentioned during the workshop referred to the cost optimal methodology aimed at ensuring high ambition levels in the MS. The European Commission (EC) is now in the process of checking the renovation reports received from MS so far.

One of the challenges in shifting behaviour is to encourage investors to take a long term cost optimal view. To this end, the Energy Performance of Buildings Directive (EPBD) required MS to set out a cost optimal methodology for setting energy performance requirements. The cost-optimality methodology is the subject of many debates on how to drive investments from dwellers that don't yet have a clear grasp on the benefits and costs integrated in a life cycle approach. Short term thinking and decision making is still one of the main obstacles in the way of energy investments.

Another key point deals with the challenge of nZEB penetration at national levels and the limited progress that has been made so far. The EC released a study in early 2013 entitled "*Towards nearly zero energy buildings – Definition of common principles under the EPBD*"<sup>1</sup>. The main conclusions of the study were the subject of discussion between stakeholders. They revealed the following:

- Indication that mild climates and abundant solar irradiation make nearly zero energy buildings in southern Europe technologically feasible with global costs over 30 years equal to or lower than ordinary buildings built today.
- More challenging in northern climates.
- Smooth transition between cost optimality and nearly zero energy buildings is achievable

The conclusion of the discussion was that MS need more guidance.

The audience also showed a profound interest in the financing opportunities for sustainable energy that the EU could provide. These vary from Cohesion Funds, Horizon 2020, Connecting Europe

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<sup>1</sup> [http://ec.europa.eu/energy/efficiency/buildings/buildings\\_en.htm](http://ec.europa.eu/energy/efficiency/buildings/buildings_en.htm)

Facility to other European Structural and Investment (ESI) Funds, LIFE+ and COSME. There were a few implementation principles which were enumerated that are meant to help MS in their endeavours:

- Mainly private sector investment. Ensure public funding complements or triggers private investment, leveraging it and not crowding it out
- EE: Consider creating value for energy savings through market mechanisms before public funding (energy saving obligations, energy service companies/performance contracting...)
- Financial instruments to be used where potential for private revenue or cost savings is large
- For physical investment, grants to be used primarily:
  - to address market failures
  - to support innovative technologies
  - to support investments that ensure energy savings and GHG emission reductions above "business as usual", moving towards NZEB

The Minister of Energy, Razvan Nicolescu, stated that so far Romania was focused on producing energy but now we have to swift to consuming efficiently. Thus energy efficiency is a priority for the Ministry of Energy even if the general responsibility on this issue is split between different ministries and divisions. Concretely, the process of drafting the building renovation strategy started with a stakeholder consultation with the aim of answering key questions. The Minister reiterated the importance of heating and of involving every stakeholder in an open dialogue about the strategy. Both the financial and the social protection potential of energy efficiency measures are not neglected by the Romanian business sector which has shown interest in being included in talks regarding the strategy.

To add to what the Minister of Energy had to say, representatives from the Ministry of Regional Development and Public Administration (MDRAP), which works directly on the programme dealing with energy investments in buildings, intervened in the discussions with information on the past funding programme and what's to come.

The main point of discussion was the *National Programme for thermal rehabilitation and for the energy performance improvement of apartments in blocks of flats* (between 1950-1990) in order to reach <math><100\text{kWh}/\text{m}^2/\text{year}</math>. The scheme supposes a grant given from the national budget and the EU of 60% together with a grant from the local administrations or Home Owners Associations (HOA) – depending on incomes) of 40%.

The total budget for the pilot programme was 304 mil euro to be allocated in 2013 (~50/50 from national budgets/EU; +30% contribution from local/municipal budgets. The target of the programme is to reduce by 40% energy consumption in the rehabilitated flats. At this point, 108 applications to ask for funds were put forward for 733 blocks of flats (counting 84mil euro from the state budget and 40% from local administrations). For the next funding period the programme will have doubled its budget and will be developed around some priority guidelines and themes following the EU logic. There are two priority axes which are of particular importance:

- Energy efficiency in public buildings

- Urban development

Both aiming to support energy efficiency and renewable energy in the public infrastructure, including public buildings and housing.

There is also a call for stakeholders to intervene and give feedback to the current and future financing schemes.

## The French Case

One of the highlights of the workshop was the presentation of the French case study made by Jerome Gatier, Director of Plan Batiment Durable.

Best practice cases in policy implementation from Europe and beyond can encourage future programme development and their execution on the ground. At the end of September 2013, the French government reaffirmed\* its ambitions to significantly increase building renovation rates, with the overall goal to refurbish 500 000 buildings annually by 2017.

In France, the Environment Round Table (Grenelle de l'Environnement) set a target of reducing energy consumption in the existing building stock by 38% by 2020 (French NEEAP, 2011). In order to achieve this reduction, an ambitious target of 500 000 renovations per year over the period 2013-2020 was set. This target is supported by incentive measures to reduce the cost of work in relation to both the residential sector (for private individuals and social landlords) and the service sector. The measures are based on a national programme to support thermal renovation which was significantly strengthened within the framework of the Environment Round Table. Regulatory measures will supplement this mechanism. However, the actual framework has to be significantly improved in order to reach this target.

The national debate "Grenelle de l' Environnement" that took place in 2007 resulted in the creation of the 1st Loi Grenelle, which says explicitly that the French State has to reduce energy consumption in existing buildings by at least 38%, by 2020. The Loi Grenelle 2, a more detailed and applied law which complemented the first text, goes further by stating that energy retrofitting work has to be carried out on existing commercial buildings within 8 years, from 1st January 2012. Regarding building renovation, "Grenelle de l'environnement" has introduced as a main objective the creation of a plan for the large-scale energy and thermal renovation of existing buildings, with the aim to reduce the energy consumption of the existing stock by 38% by 2020. The main objectives related to building renovation defined by the "Grenelle de l'environnement" are summarised as follows:

- Renovate 400,000 housing units per year starting in 2013.
- Renovate the 800,000 most energy-consuming social housing units by 2020.
- Undertake work on energy efficiency in public and private tertiary sector buildings between 2012 and 2020.

- Start the energy renovation of State and public buildings before 2013”.

To help achieve this objective, a new plan was announced in March 2013, the Plan to Renovate the Energy of Households (PREH), in the frame of the Housing Investment Plan (Plan d’Investissement pour le Logement). Three axes were developed:

1. Encourage the decision making process with better support for home owners
2. Make renovation financing an easier process through the adaptation of support programmes
3. Mobilise professionals to ensure an affordable quality

What is of special interest to the Romanian stakeholders is the unique and original process which the Grenelle of Environment lays down. The plan foresees regular meetings between the stakeholders of the whole sector, in order to facilitate dialogue and stimulate the exchange of ideas and proposals. This exchange has been done without any budget, just based on common interest.

Following all the actions pertaining to the energy transition, France has some promising first results:

- Increase in awareness as regards the importance of energy savings in the building sector
- Anticipation of new rules in the field of new construction : low energy buildings
- Promising beginning in the renovation field
  - Over 350 000 housing units already renovated
  - 2012/2013 disappointing years : 200 000 homes renovated per year
- Boom in innovation, not only technological but also more global: organisational , marketing, service level.

In order for the Romanian building stock to go through this kind of changes, Jerome Gatier gave some advice such as:

- Think differently to push decision making : to embark on energy performance endeavours
- Mobilise the tertiary sector: obligation / voluntary move
- Put stress on low investment or no investment savings
- Debate a possible future obligation of investing in energy performance.

After this first wave of presentations a series of questions from the audience were raised. Among the main point raised, it is important to mention:

- Concerns about the quality of energy performance works
- Concerns about dealing with the vulnerability of the buildings in case of seismic activity before renovating
- The need for a strategy to sensitise home owners to the benefits of thermal rehabilitation
- The weight of bureaucracy is too heavy on HOA (Home Owners Associations) that want to be included in these programmes



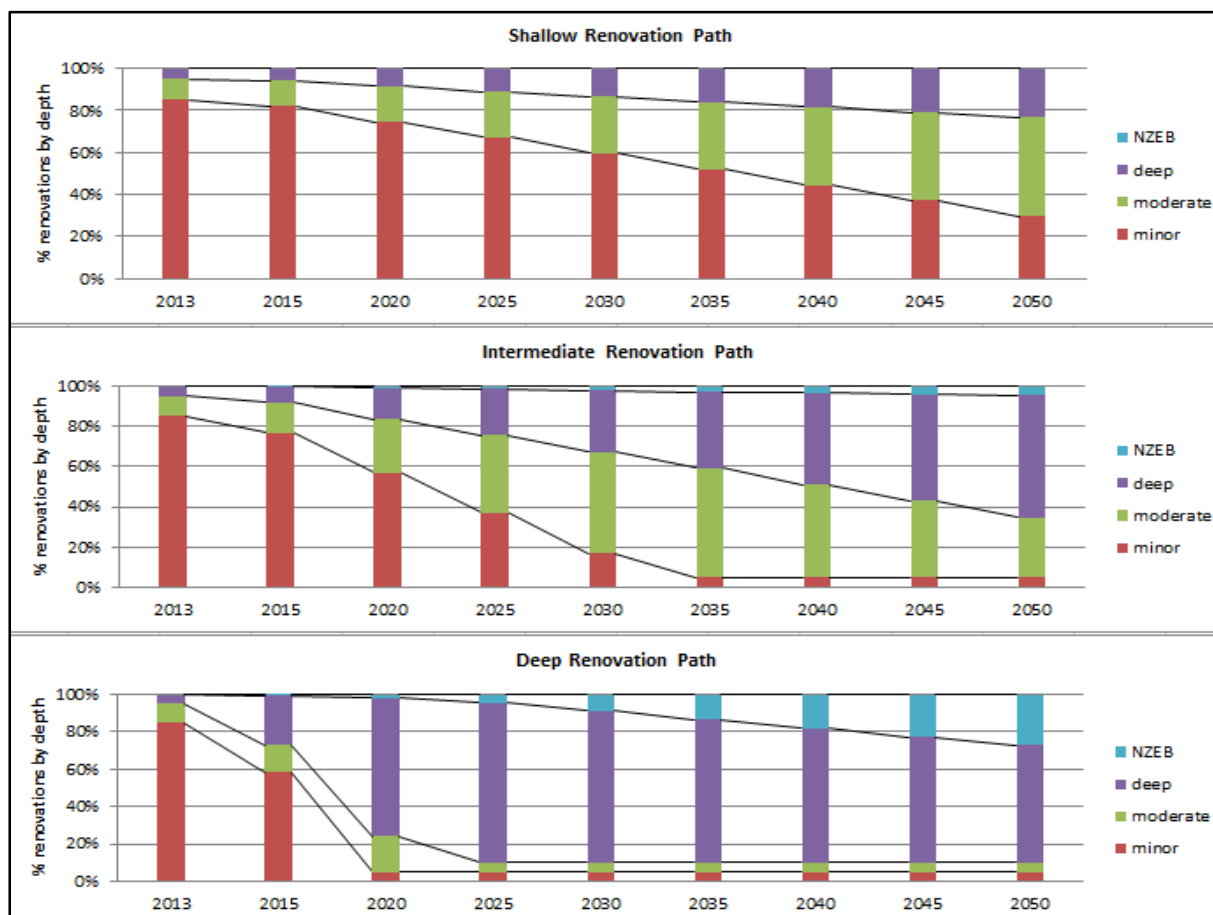
- Concerns about the monitoring systems of the rehabilitation programmes and works both at national and EU level
- Concerns about the lifespan of these national initiatives which have to survive electoral cycles.

## Renovating Romania

An ambitious reduction target in CO<sub>2</sub> emissions from buildings by as much as 80% by 2050 (compared to 2010) is both achievable and desirable in Romania.

BPIE found that this ambitious target could be achieved through a combination of energy efficiency measures and widespread deployment of renewable resources in and on buildings, in a multiphase approach described in the study *Renovating Romania*. This strategy was designed to stimulate debate among stakeholders, with a view to securing a broad consensus around the future direction of policies and initiatives addressing building energy performance in Romania.

Net energy cost savings for consumers of €20bn (after deducting investment costs) could be achieved by adopting the most ambitious policy scenario. When the wider benefits to society in terms of improved health, reduced import dependency, increased energy security, economic stimulus and environmental improvement are taken into account, the value to the Romanian economy resulting from a dedicated programme of building renovation would be well in excess of €100bn.



**Figure 1, Split of renovation type (depth) across three indicative renovation paths**

*Renovating Romania* provides an opportunity to encourage the Government and other stakeholders to consider a level of ambition that would be appropriate to improve the quality of the nation's homes and workplaces. To illustrate the scale of that ambition, this strategy proposes the renovation or rebuilding of all Romania's homes, farmsteads, workplaces, hospitals, factories, retail premises and the myriad of other buildings, to high energy performance standards by 2050.

In the study development, BPIE took into consideration the feedback of national stakeholders who participated to a consultation event end of 2013.

The study is split into two parts, the first outlines the actual strategy for the energy renovation of the Romanian building stock, and the second part showcases the results of the IEE project ENTRANZE on modelling selected policy sets for Romania as well as pathways to h2030 for the renovation of existing buildings.

SCENARIO		baseline	modest	intermediate	ambitious
<b>Energy Saving</b>					
Energy saving in 2050	TWh/a	8.5	31.1	44.8	63.2
Energy saving in 2050 compared to 2010	%	8.3%	30.4%	43.8%	61.8%
<b>Lifetime Costs and Benefits</b>					
Investment costs up to 2050	€ million (NPV)	2,084	5,486	9,224	16,540
Cumulative energy cost savings	€ million (NPV)	5,414	16,726	25,164	37,011
Net saving to consumers (@ 8% discount rate)	€ million (NPV)	3,333	11,248	15,954	20,496
Net saving to society (@ 4% discount rate)	€ million (NPV)	17,143	67,586	93,862	126,408
Internal Rate of Return	IRR	14.6%	14.4%	13.6%	11.4%
<b>Carbon Emissions*</b>					
Annual CO2 saving in 2050	MtCO2/a	3	22	24	25
2050 CO2 saved (% of 2010)	%	12%	79%	83%	89%
CO2 abatement cost	€/tCO2	-138	-40	-54	-70
<b>Societal Benefits</b>					
Employment generated	Average Jobs/year	4,403	15,854	24,888	39,736

**Figure 2, Results of scenario analysis**

To sum up the main points of interest of the renovation strategy, we need to change the way we approach the subject and encourage engagements from key stakeholders. The study also points out that within 10 years all renovation works need to be in depth and that at the current level we under-invest. Romania, like other CEE MS, needs to make the most of the EU funds available to increase depths and rates and take advantage of the lifetime cycle of buildings.

To continue, the second half was focused on ENTRANZE policy scenarios for Romania.

## Preliminary results of ENTRANZE for the Romanian case

The analysis covers the period between 2008 and 2030. The point of reference according to which the impact of the policy sets is estimated is 2008, chosen because it is representative of the situation before the financial crisis.

For Romania, the approach taken considers three scenarios:

- Policy set 1 – BaU scenario
- Policy set 2 – Growing-up scenario
- Policy set 3 - Market Transformation

The reference scenario is the one considering the situation in 2008 (“no policies scenario”).

Each policy set contains the following:

1. Technical regulations and requirements of energy performance
2. Training, education, clarification and quality/compliance control
3. Raising awareness, motivating and guiding
4. Primary energy, industry, RTD

For instance, the table below illustrates the proposed performance standards for three different building types which was presented during the workshop:

- Offices, schools and hotels
- Multi family houses (MFH)
- Single family houses (SFH)

Building type	Year	Policy set 1 – BaU scenario		Policy set 2 – Growing-up scenario		Policy set 3 - Market Transformation	
		New*	Renovation*	New*	Renovation*	New**	Renovation**
multi-family houses (MFH)	2015	90	100	80	100	70	90
	2020	80	100	70 SRE>30%	90	60 SRE>40%	70 SRE>20%
	2030	70	80	60 SRE>40%	70	40 SRE>50%	50 SRE>40%
single-family houses (SFH)	2015	150	180	130	150	90	110
	2020	120	150	100 SRE>30%	120	80 SRE>40%	90 SRE>20%

	2030	100	130	70 SRE>40%	90	40 SRE>40%	60 SRE>40%
offices, schools, hotels	2015	120	140	100	120	90	110
	2020	100	120	90 SRE>20%	100	70 SRE>30%	100 SRE>20%
	2030	80	100	70 SRE>30%	90	40 SRE>40%	60 SRE>30%
* only heating energy							
** EPBD scope (i.e. energy for heating, cooling, ventilation, hot water and auxiliary equipment + lighting in case of non-residential buildings)							

**Table 1: Proposed Minimum energy requirements for Romanian buildings (ENTRANZE) – kWh/m<sup>2</sup>/a primary energy**

General preliminary conclusions showed that:

- It is essential to ensure predictability in the medium and long term of policies dealing with energy efficiency by making sure they have multiannual budgets and by announcing in advance an ascending evolution of regulations on energy performance and a descending rate of public support.
- It is vital to ensure that there is a coherent and integrated legislative framework, based on regulations, information, education, demonstration, and integration with other support measures related policies (DH primary energy).
- It is important to establish final and intermediary objectives, as well as deciding upon roadmaps to accomplish them. A long term objective could be the transformation of the market and the reduction of financial support programmes.
- It is also imperative to exploit every EU financing opportunity as well as from other sources.

The conference ended with a panel discussion between all the speakers and the audience.

The audience very much appreciated the presentations and added a few ideas to the debate such as:

- Buildings are just a part of a more complex system thus it is also important to work at the level of the source of energy distribution.
- The level of revenues of the dwellers can be quite low so they had to improvise and appeal to other sources of heating because many were disconnected from the central heating sources.
- To consider in the strategy vulnerable consumers and the fact that the price of energy and gas is going to increase as subsidies are progressively withdrawn.
- Does the EU has a system of sanctions in place to keep the MS on track?
- Do we consider renewable sources in the strategy and the policy scenarios? To what extent?



In the end the workshop provided a great forum for discussion between key policy stakeholders, experts and industry. As a result, the Romanian authorities have taken into consideration both the BPIE study and the ENTRANZE findings in their report to the EC - where both sources are quoted.

## Participants

### ME

1. Ministry of Energy Razvan NICOLESCU

### MDRAP

1. General Manager Cristian Stamatiade
2. General Manager Diana Tenea

### ARACO

1. President Laurentiu Plosceanu
2. General Manager Adrian Florescu
3. Technical Manager Mircea Oros

### PSC

1. Vice-president Tiberiu Andrioaiei

### SUNE

1. President Nicolae Olariu
2. General Manager Manuela Draghicescu
3. Vice President Dan Ilie TEODOREANU

### Agency for Energy Efficiency and Environmental Protection

1. Executive Manager Ion Dogeanu

### Swiss Embassy

1. Marinela Ivan

## Municipalities Association from Romania

1. Daniel Dragulin CALARASI City Hall Mayor
2. Marian Gheorghe CALARASI
3. Luminita TRIFU CALARASI
4. Daniela GRADEA CALARASI
5. Adriana ZAICEANU BOTOSANI City
6. Raluca COVACI City Hall Sector 3 BUCHAREST
7. Georgiana Ion idem
8. Ilie BOLOGAN ORADEA City Hall Mayor
9. Spalatelu Lavinia Aurora SLATINA City Hall
10. Prina Andreea Livia

## AIIR

1. Vice-President Catalin Lungu

## INCERC

1. Horia Petran

## BASF

1. Rodica Margarit

## Arena Constructiilor

1. General Manager Gina Dadu

## Agenda Constructiilor

1. Ovidiu Stefanescu

## Association for Energy Efficiency

1. General Manager Aureliu Leca
2. Marian Stroe

## GDF Suez

1. Robert Ivan Executive Director



2. Diana Leonte

APMCR

1. President Claudiu

Geoexchange

1. President Robert Gavriiliuc

2. Radu Polizu

SGS

1. Deputy General Manager Mihaela Sarbu

ABR (Bank Association from Romania)

1. Cristian Alexandru Nae CEC Bank
2. Raluca Banuta CEC Bank
3. Ioana Anca Gheorghide BCR Bank
4. Makelo TERO EIB
5. Aurelia Cionga Vice President Raiffeisen Bank

Rockwool Romania

1. Emilian Grigore

Saint Gobain Romania

1. Director Cristian Ciucasu

League Habitat

1. President Mihai Mereuta

MDRAP-European Funds

1. Ionut Trinca
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#### TERMO SYSTEM PROGRAM

1. Andrusca Daniel Manager

Prof. Dan Constantinescu, Dr. Eng.

Passivhaus Institut Darmstadt

1. Ruxandra Crutescu

#### HOLCIM

1. Mihaela Odangiu
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#### PR

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1. Alexandru Petrovici Executive Director

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1. Roxana Andreea Protopopescu

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1. Monica Ardeleanu

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1. Mihai Ivascu General Secretary

Mihaela Georgescu Prof Dr. Eng.

#### GreenPartners

1. Flaviu Petean



EnEffect

Dragomir Tzanev - confirmed

Karmen Simeonov – confirmed

Zdarvico Genchev – maybe

Sofena

Zdravico Georgiev - confirmed

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