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THE STATUS OF FRAMEWORK PROGRAMMES FUNDING OF THE SUSTAINABLE DEVELOPMENT OF THE ROMANIAN ENERGY SECTOR

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ABSTRACT: Currently, when the entire world faces an economic and financial crisis, the Romanian energy has mainly the following major problems:

- Lack of a viable and sustainable energy strategy for long term;
- Modernisation of the equipment and installations;
- Liberalisation of the energy markets;
- Interconnection of networks;
- Ensuring the protections and the safety of the national energy system and of the afferent labour system.

This paper highlights an opportunity that Romania has at its disposal through the funds of the main research funding instrument in the European Union to solve part of these problems and the way Romania has actually acted.

1. INTRODUCTION

The Seventh Framework Programme (The Seventh Framework Programme – FP7) for research and technological development represents the main European Union financing instrument of research for the period 2007- 2013; it is the successor of the 6th Framework Programme and it is part of a series of programmes launched for the first time in 1984. The FP7 takes place between 2007 and 2013 and it has a budget of 53.2 billion euro for the 7 years. FP7 naturally follows the previous programme, FP6, and it is the result of several years of consultations with the research community, both in the public and in the private sector, with participant from the economic area and with political decision factors from Europe. Thus, benefiting from the experience accumulated during the previous programme periods, FP7 has become a more extended, more comprehensive programme, but at the same time it is more flexible, owning a set of simplified procedures.

Through this programme the European Commission aims to attain the two major objectives that consist of: improving the scientific and technological basis of the European industry and encouraging the competitiveness of Europe at international level, promoting at the same time research for the support of the EU policies. FP7 with its 53.2 billion euro budget for the 7 years represents the Framework Programme that, until now, has the largest allotted budget. The future FP8 programme shall have an estimated budget of approximately 80 billion euro. (Figure 1)

2. PARTICULAR FEATURES OF THE FP7 PROGRAMME

The FP7 programme’s structure is made of five main branches: Cooperation, Ideas, People, Capacities and Nuclear research, every one of these branches representing specific research activities with a single, multi or trans-sectoral character. The FP7 is made of 4 main activity blocks that form 4 specific programmes, plus a special fifth programme for nuclear research. The priorities of FP7 are included in the following specific programmes:

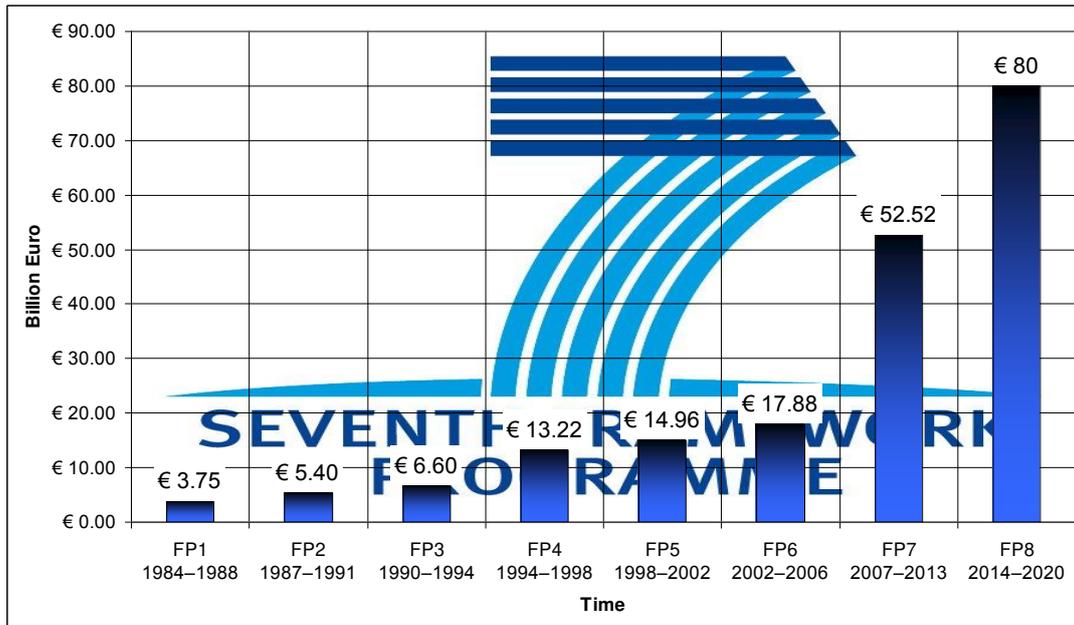


Figure 1 Evolution of the FP Framework Programme's budget

- ▶ *The cooperation programme* – it facilitates the cooperation between industry and the academic environment in order to achieve domination in the key technological areas;
- ▶ *The ideas programme* – it supports basic research at the science frontiers;
- ▶ *The human resources programme* – it supports mobility and career development both for researchers from Europe, and for those outside it;
- ▶ *The capacities programme* – it helps the development of capacities that Europe needs in order to become a flourishing economy based on knowledge;
- ▶ *The nuclear research programme (Euratom Programme)* – it develops Europe's nuclear fission capacities.

The „Cooperation” programme is the largest of the programmes include in FP7 and it has a budget of 32.365 billion euro, which represents approximately 61% of the total budge for FP7 and it supports the research activities in the following areas: Health; Food, Agriculture and biotechnology; IT&C; Nanosciences, nanotechnologies, materials and new production technologies; Energy, Environment (including the changes in climate); Transport (including aeronautics); Socio-economic sciences and the humanities; Space and security. Within the “Cooperation” programme support is granted in the field of scientific research of the international cooperation projects for the European Union and beyond its boundaries. In the ten theme areas, corresponding to the main areas of knowledge, the programme shall promote the progress of science and technology. The research shall be supported and consolidated in order to cope with the European requirements in the European social, economic, environment, public health and industry fields, and in order to serve the public interests and to support the developing countries. Thus the size of the budget allotted and the significance of this programme is justified.

The participation in the programmes of FP7 is open to a wide range of organisations and persons in any part of the world; they all have the opportunity to participate in FP7. Different participation rules are applied, in accordance with the research initiative.

The total budget (Figure 2) is broken down as follows: Cooperation – 32.413 billion Euro, Ideas 7.510 billion Euro, Human Resources 4.750 billion Euro, Capacities 4.097 billion Euro, JRC actions (non-nuclear) 1.751 billion Euro, Euratom (until 2011) 2,751 billion Euro.

Participation ion FP7 is open to universities, research centres, multinational corporations, SME, public administrations, private individuals anywhere in the world. The participation rules vary in accordance with the research initiative. Persons with an idea for a research project shall consult the rules of the programme, they shall look for partners abroad to cooperate with, and they shall send the

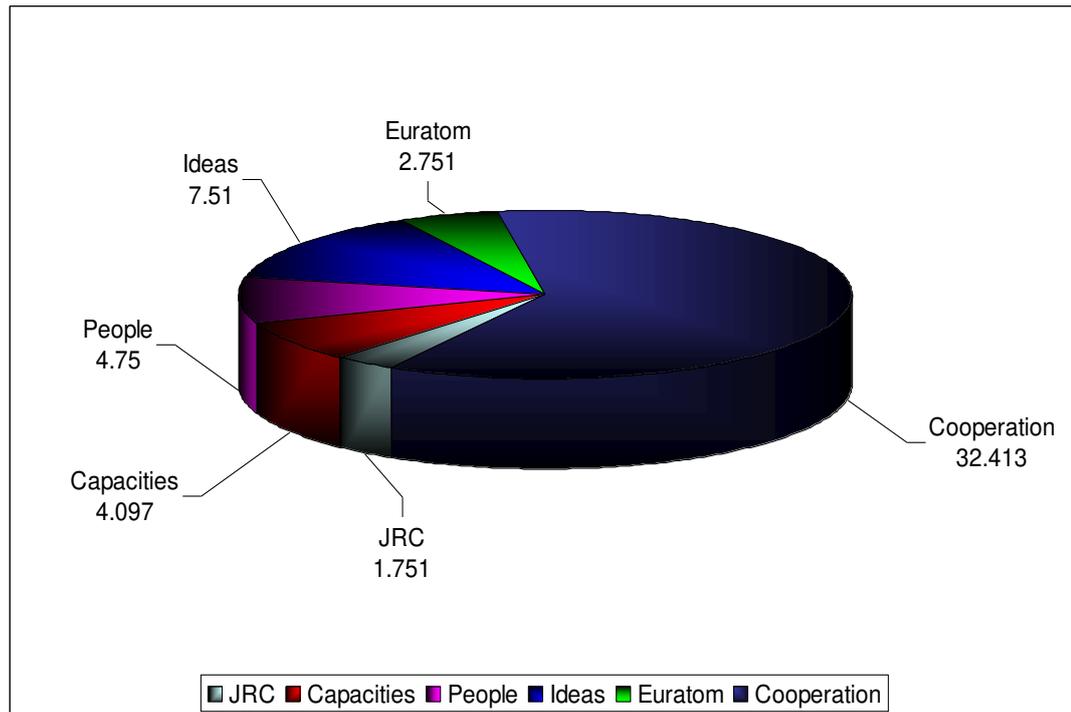


Figure 2 FP7 Budget broken down on programmes for Romania

application to the European Commission in accordance with the deadline provided in the Application form and with the work programme. The application shall be evaluated by 3-7 independent evaluators, who are experts in the area, and then the Commission shall notify the applicant regarding the result of the evaluation. If the result is positive, the negotiation of the contract shall begin, and after signature of contract the applicant may start the project. Payment may take two forms: reimbursement of eligible costs or total payment.

The participant in FP7 can, in theory, be located anywhere. But there are different categories of countries that may have eligibility for specific programmes: member states; associated states – that have protocols for scientific and technological cooperation and that involves contribution to the programme's budget; candidate countries; third countries.

The particularities by which FP7 *is different* from the previous research programmes of the EU are: - Increased budget – the budget for FP7 is 63% bigger than that for FP6 in terms of current price.

- Focusing on important research themes: health, ITC, space, etc. within the most extended component of FP7 - Cooperation – which makes the programme more flexible and more dedicated to the needs of the industry.

- The European Research Council – the first pan-European agency for financing of research, whose main goal is to finance research with a higher degree of risk and with a greater potential for gain from the scientific borders.

- Regions of knowledge - FP7 has established new regions of knowledge that bring together various research partners from universities, research centres, multinational companies, local authorities and Small and Medium Sized enterprises.

- Facilitation of financing for sharing risk in order to increase the help for the private investors in research projects, improving access to the credits of the European Investment Bank for large research activities.

- Common initiative for technology which is aimed at those problems that cannot be attained by the "Call for proposals" and at those areas of the research activity where cooperation and considerable investments are essential for the long term success.

- One single contact point the "Information service for research" acts as a first contact point for the potential participants, offering answers regarding all questions related to the EU funds for research and the new aspects concerning the participation in the programme.

3. ROMANIA'S PARTICIPATION IN THE FRAMEWORK PROGRAMME FP7

The general findings grouped into a synthesis based on specialty analysis show that:

- Romania ranks 22, with a number of 271 projects having participants from this country. In comparison with the first 5 countries (Great Britain – 20.749, Germany – 17.398, France – 14.870, Italy – 12.288, Spain – 8.968) having participants in the FP7 projects, the place occupied by Romania is unsatisfactory and the number of projects where Romania is involved is low.

- Romania was involved in the 271 projects as: coordinator in 138 projects and as participant in 133. (Figure 3)

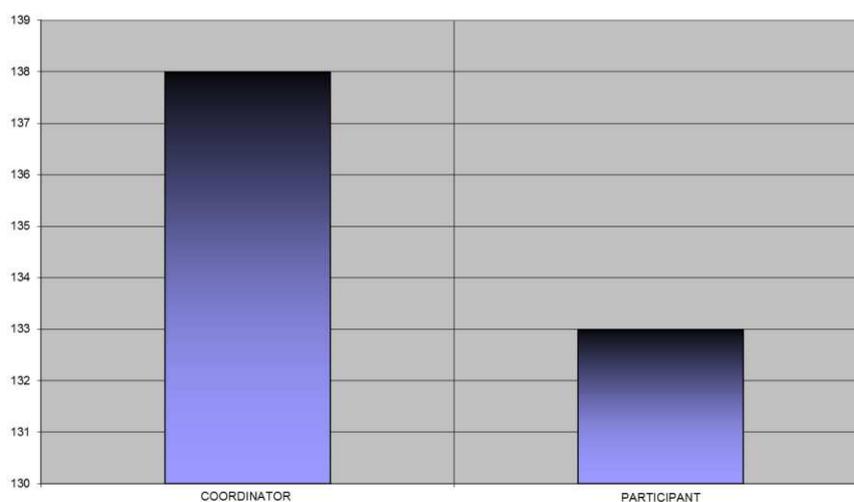


Figure 3 Distribution of projects with European funding in which Romania was involved, according to the position of "coordinator" or "participant" of the country

- Within the 133 projects where Romania was only a participant, on the first places France (25 projects), Germany (22 projects), Italy (17 projects) rank in accordance with Table no. 1 and figure 4, as countries in charge of the coordination of the projects.

Table no. 1 Situation of countries coordinating projects where Romania is a participant

Country	Number of coordinated projects
AUSTRIA	2
BELGIUM	6
BULGARIA	3
CZECH REPUBLIC	1
DENMARK	1
FRANCE	25
GERMANY	22
GREAT BRITAIN	15
GREECE	13
HOLLAND	6
HUNGARY	7
IRELAND	1
ITALY	17

LUXEMBOURG	1
NORWAY	1
POLAND	2
PORTUGAL	2
SPAIN	5
SWEDEN	1
SWITZERLAND	1
TURKEY	1

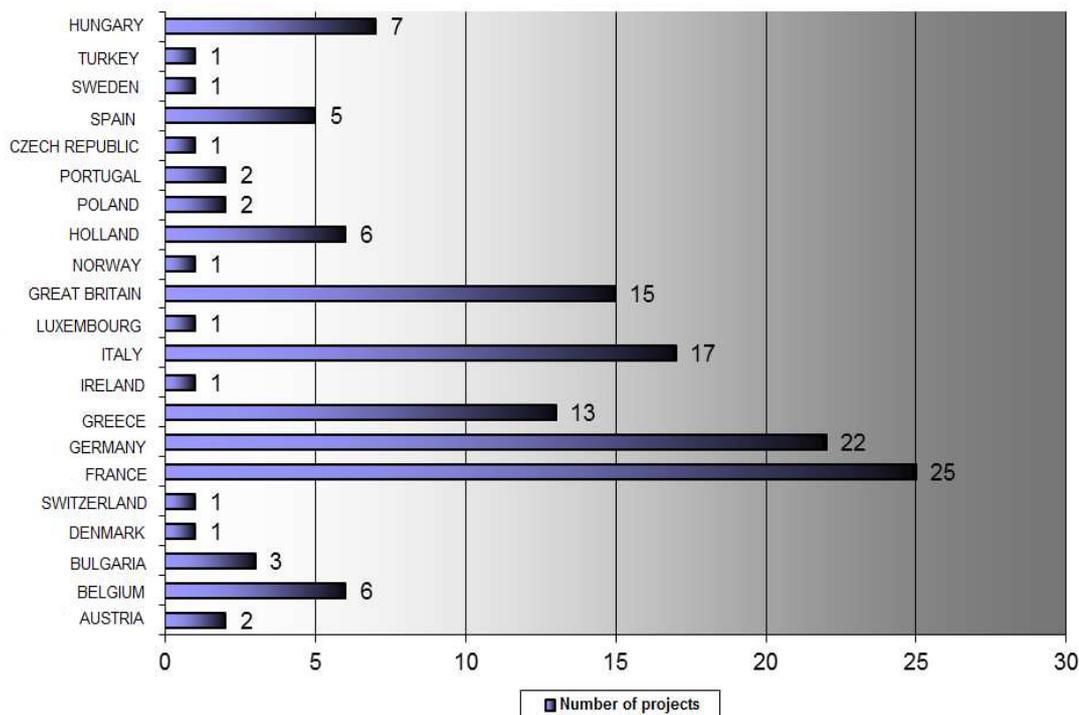


Figure 4 Projects where Romania was present as a participant, distributed in accordance with the coordinating country

- Romania ranks 24 with a number of 138 of projects coordinated by people from this country. In comparison with the first 5 countries (Great Britain – 17.116, Germany – 13.103, France – 12.380, Italy – 8.346, Holland – 6.312) having coordinators in the FP7 projects, the place occupied and the number of projects where Romania has coordinators are unsatisfactory and insufficient.

- The rate of absorption of European funds through the FP7 programme is extremely low, although Romania has a significant financial contribution to the European community funds. In spite of the fact that it was set up by the Ministry of European Affairs, which carried out duties in the area of coordination and management of European funds and in the area of European affairs, no significant improvement is observed in the attraction of European funds by Romania (also see chapter P.O.S.D.R.U.).

- In the “Governing programme 2012” of the Ungureanu cabinet, which establishes the “priorities for the year 2012”, under chapter 14 – “Informational society”, the „Stimulation of research, development and innovation in the IT&C sector by attracting new investors and IT&C equipment suppliers that innovate and/or manufacture in Romania and by increasing the absorption of FP7 funds” is located at the very bottom of the list.

- In figure 5 the projects where Romania was involved are presented, in accordance with the programme to which they belong. Up to now most of the projects were carried out through

the FP6 programme (74 projects), but Romania has not earned one single grant in the competitions financed by the “European Research Council” (ERC), or in the “*Advanced Research Grant*” financing scheme, nor in the case of “*Starting Research Grant*”.

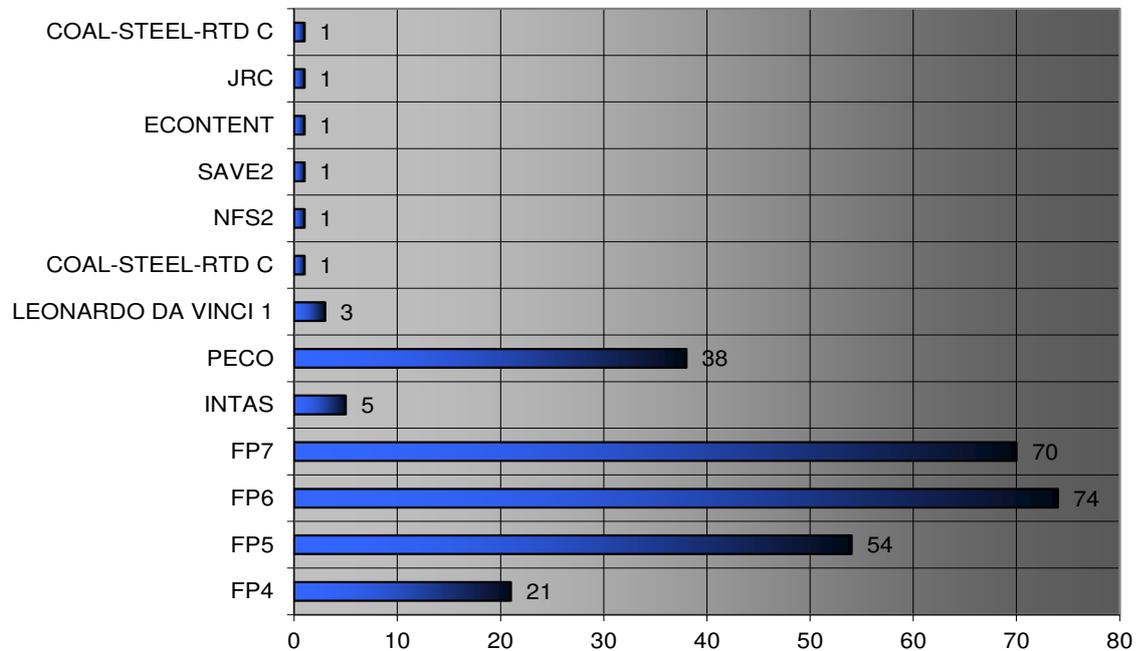


Figure 5 Projects where Romania was involved, in accordance with the programme to which they belong

- Not one Romanian university ranks amongst the first 500 universities of the world (e.g. the ARWU classification). This absence from the superior level of the classifications reveals not only the lack of competitiveness of the Romanian universities, but it also has negative consequences on the attraction of foreign students and on the training of the local human resources.

- Romania is on the last places in Europe regarding performance in research, if we take into account as landmark the international publications, patents or innovations. This affects all the levels of Romanian society, from the living standard to the economic and technological competitiveness.

The causes of these aspects are intimately linked to the lack of competitiveness of Romanian research at international level, and they are:

- The impact of Romanian research at international level is very low. There are many published works with minor impact in the international community, but there are very few works of Romanian researchers in top magazines showing major impact (such as *Nature*, *Science* etc.);

- The reply of the international academic community to the scientific publications coming from Romania is low. For instance, as number of quotation per article, Romania ranks 15 of 23 Eastern European countries, in accordance with Scimago source, for the period 1996-2009. A large part of these quotations are self-quotations or come from Romanian authors, which indicate a scientific isolation.

- There is an increasing trend in Romania to publish in magazines which, even if rated in *Web of Science*, do not ensure conditions of increased quality in evaluation, thus contributing to the maintenance of the scientific isolation.

4. FRAMEWORK PROGRAMMES FUNDING OF THE ROMANIAN ENERGY SECTOR

The research methodology consisted of inventorying and centralising of all projects on the site <http://cordis.europa.eu/projects/>, accessed on 5.05.2012. In which Romanian is found. Then, the projects were analysed and selected in accordance with the subjects of interest and key words. In the context of this paper the subjects of interest belonging to energy and related fields were: energy saving, energy storage, other energy topics, nuclear fusion, regional development, environmental protection and waste management.

Thus, a number of 81 projects (30 %) resulted that were or still are implemented with focus on the subjects of interest and with the specification that many projects have multiple "subjects" where Romania has benefited of the financial support of this funding instrument.

In figure 6 regarding the distribution of projects in which Romania was involved, in accordance with the presented subjects of interest it is found that regional development accounts for 33.33%, followed by environmental protection 25.93%, nuclear fusion 20.99% and 19.75% belongs to research in the areas: energy saving, energy storage, other energy topics, and waste management.

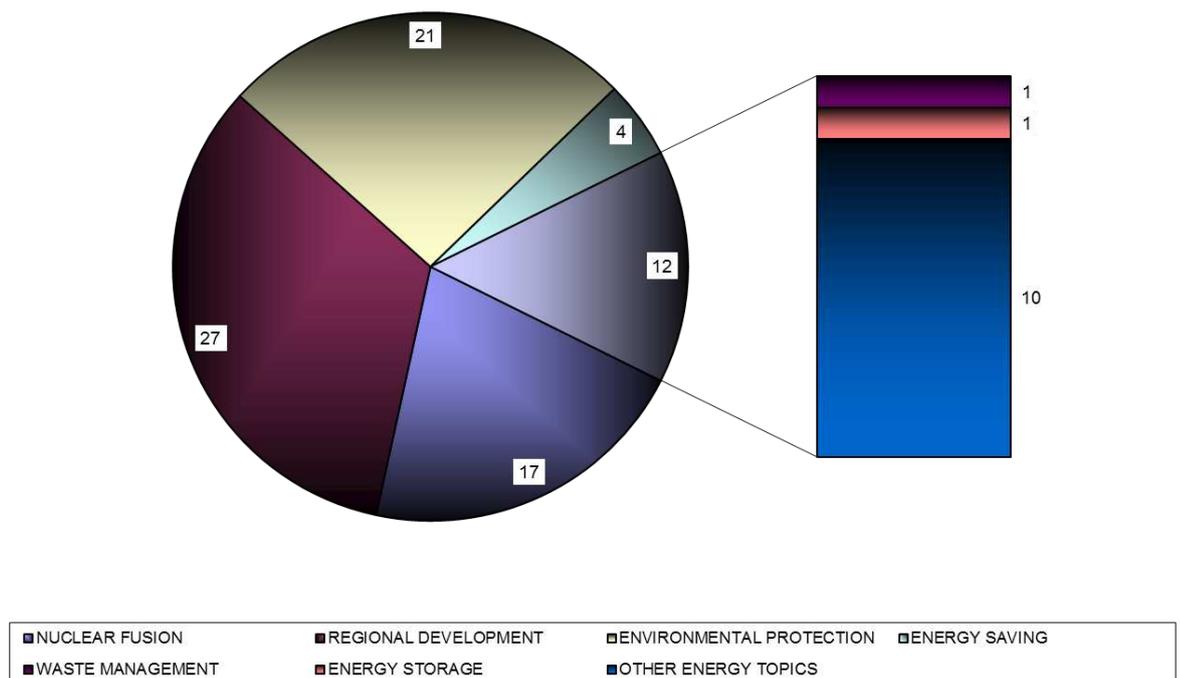


Figure 6 Distribution of projects in which Romania was involved, in accordance with the targeted subjects of interest

But, only 29 projects, representing 10.70% of the total of 271 projects in which Romania obtained financing and respectively 35.80% of the 81 projects on the subjects of interest targeted only research in the area of energy (Table no. 2 and figure 7).

Table no. 2 Situation of the number of projects in the energy area where Romania obtained funding

Energy area subject	Number of projects
Nuclear fusion	17
Energy saving	4
Energy storage	1
Other energy topics	7
Total	29

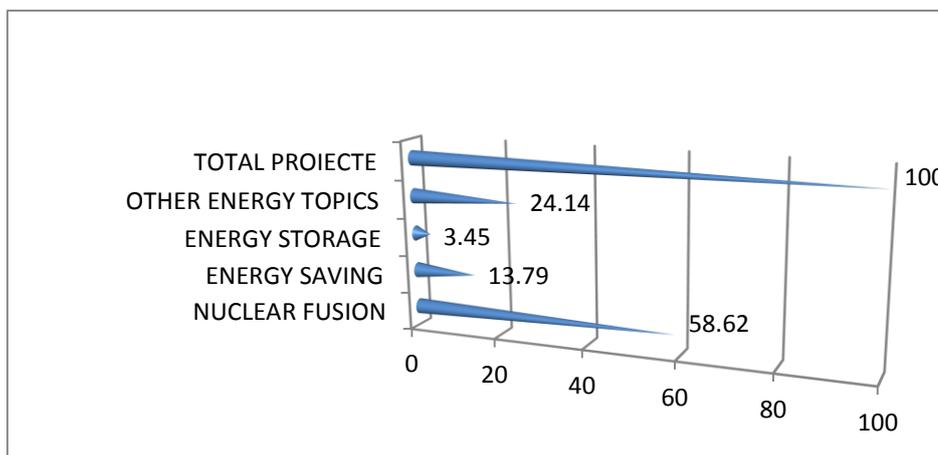


Figure 7 The share of energy projects by area

5. CONCLUSION

Romania has big gaps to recover in comparison with the European research, which would facilitate access to funds for financing and economic development. Reforms in all sectors of activity, including energy are possible if the Government will transmit clear signals for reform, starting with the related issues of good governance of the sector (independence and accountability of the regulator; abandonment of the subsidy practices of certain companies or sectors through contracts and preferential laws that drain the state owned companies from electricity and gas, and use of these additional resources to the budget to support those groups who really need social support). Funds provided by FP framework programs can provide poles of cooperation, best practice models and advanced, competitive technologies

Instead of going ahead with these damaging practices for the energy sector, Romania should first of all ensure the independence, depoliticising and responsibility of the regulator so that it should have a real capacity to punish even the state for its anticompetitive practices. All measures in the energy sector and the legislation for transposing the directives must be done through a real debate with all the affected factors, consumers, investors, the public, experts, instead of approving ad hoc various measures that favour the status quo and the current illegitimate interests in the sector.

In conclusion, FP7 is one of the programmes by whose projects done and absorbed funds the improvement of the general conditions in Romania can be achieved, and the maximization at the level of research, involvement, absorption and development is imperative in order to ensure the national welfare in the context of global performance and competitiveness. In this context it is increasingly obvious the fact that the overcome of the present level of national mediocrity in performance is a must.

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