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## THE IMPORTANCE OF DEVELOPING SKILLS IN THE FIELD OF RENEWABLE ENERGY RESOURCES

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**Abstract:** *By this paper we want to emphasize that training and improving workforce in renewable energy can be achieved by supporting both researchers and the formation of networks between universities, research centers and industry to promote innovation and the knowledge economy[4].*

*One of the steps taken in this directions is obtained by questionnaires addressed participants at the workshop organized individuals Naval Academy "Mircea" RES-Constanta - October 2011 have obtained information such as those related to individuals by category age [5].*

**Keywords:** *renewable energy resources, Romanian-Bulgarian cross-border area, higher education*

### 1. INTRODUCTION

The stringent need to reduce pollution, global warming and saving the planet are the primary problems of human existence. The special attention given to environmental protection has led to the development of a new industry segment dedicated to: "green" jobs. Studies show that within Europe there are over 20, 000 occupations in this field [1]. It is clear that in such a context, in Romania, the phenomenon of expansion of investment in renewable energy resources and development departments dedicated to the effective management of human resources involved in this field has resulted in large companies and will continue to increase the number of much needed jobs. The labor market shows that there are few specialists in human resources at this point involved in the process of employment, and they are convinced that the future belongs to those who choose to train to become true professionals in a field that aims to protect the business environment. Therefore, "green" jobs represent a true rescue bridge from this time of

great crisis and provide a powerful job market not only in Europe but also throughout the world.

In the progress of society as a whole, a vital composition generating a number of major concerns is the energy and how it is produced, especially in the situation we are in; to reduce resource exploitation is the primary reason for increased demand effort to improve the use of renewable energy.

### 2. THE FIELD OF RENEWABLE ENERGIES A CHANCE FOR EVERYONE

The security of supply, access to competitive energy prices and environmental sustainability are the three pillars of the EU's integrated approach in terms of climate policy and energy policy. Among the objectives of the European Union are those consisting of lower, with 20% of energy consumption

compared to projections for 2020 and used until 2020, renewable energy to 20%.

It is intended that in 2007-2013 to increase the use of renewable energy promoting them at the same time as drivers of innovation and growth. It is well known that the European Regional Development Fund and the Cohesion Fund can support trans-European energy networks in order to improve security of supply, the internal market, the integration of environmental and renewable energy development.

Activities focused on renewable energy have great potential in terms of stimulating economic development in the EU regions, creating new jobs and stimulate social development. This is clearly found that funds were allocated through cohesion policy, renewable energy for the period 2007-2013, exceed five times those for the period 2000-2006 objectives "Convergence" and „Regional competitiveness and employment ".

It is really necessary to point out that the Framework Programs for 2007-2013, 4.8 billion has been allocated for projects renewable (wind, solar, biomass, hydro and geothermal), € 4.2 billion for energy efficiency, cogeneration and energy management and 1.7 billion investment in traditional energy sources, of which 674 million for investment in trans-European electricity and gas [2]

### **3. RES-OP-DEV**

One of the problems Europe is to affirm the knowledge society and to face competition in the most efficient global economy. This is and will be possible by showing the existence of an extensive offer high quality education and training. Education policy is determined by each individual Member State. However, EU countries agree on common goals and share best practices and ideas in the field.

EU policy is to fund programs that allow citizens to build better opportunities for personal development and economic potential of the EU - through the study of the formation of continuous or volunteering in other countries [3].

The problem lies in the use of renewable energy among subjects approached of programs financed by the European Union, which is the theme that we have developed in our project "Romania-Bulgaria Joint Cooperation for sustainable development and long-term human resource young energy technologies sources, in order to overcome socio-cultural barrier and opening of joint opportunity or find a job and employment in the border area "with the National Research and Development Institute for Electrical Engineering ICPE-CA, as coordinator, University of Rousse "Angel Kanchev" Association "Municipal Energy Agency - Rousse" as partners. This project was among those activities and active information, lectures and thematic views, arguments and discussions of broad interest, targeted or general presentations of successful projects in this field, always insisting on the benefits, but considering the conditions development initiatives for improvement, with clear economic, social and environmental, short and medium term clearly proving that there is interest and opportunities in this field.

The project is part of the Cooperation Program Romania-Bulgaria 2007-2013, "Common borders. Common solutions "and is co-funded by the European Union through the European Regional Development Fund. The contracting authority in Romania is the Ministry of Regional Development and Tourism.

Duration of the project was for a period of 18 months, from July 8, 2011 till January 7, 2013. The total project value was EUR 945,837.18, of which financial assistance grant of Romanian and Bulgarian state amounts to 122,958.84 Euros and the contribution of the partners was worth 20,619.25 euros.

The target groups were represented by SMEs, universities and research centers with concerns and renewable energy activities but also individuals. A total of 240 people were covered by the end of the program training courses in renewable energy.

The objectives of the project were:

i) Cooperation of specialists from Romania and Bulgaria to achieve a common educational curricula and training programs for staff in SMEs, skills and knowledge to young human



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resource in the field of renewable energy technologies to create and strengthen the advantages and opportunities getting a job along the border area;

ii) Transmission of information on employment opportunities in the border area and the new evolving labor market in renewable energy technologies;

iii) Development in the border area of specific training for human resource hiring young labor market for renewable energy technologies;

iv) Developing links and cross-border exchange of experiences between educational centers and training centers.

**4. THE IMPORTANCE OF THE DEVELOPING SKILLS IN THE FIELD OF RENEWABLE ENERGY RESOURCES**

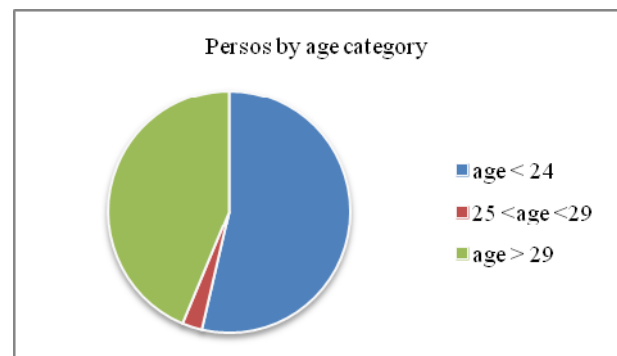
Development of people, their skills and talents is essential to ensure long-term competitiveness of Europe in the field of renewable energy. It is also a key element in promoting social cohesion, helping all citizens to receive a job offer more and better in this new field. The EU has a comprehensive set of policies aimed at addressing specific issues of professionalism and competitiveness. Many of these systems are designed to improve higher education and training in renewable energy, improve field workforce and strengthen the links between these new service providers, and industry training to ensure that skills taught are those who require companies working in the field, both currently and in the future.

Training and improving workforce working in renewable energy can be achieved by supporting both researchers and the formation of networks between universities,

research centers and industry to promote innovation and the knowledge economy [4]. One of the steps taken in this direction is obtained by questionnaires addressed participants at the workshop organized individuals Naval Academy "Mircea" RES-Constanta - October 2011 have obtained information such as those related to individuals by category age.

Total	Percentage age <24	Percentage 25 < age < 29	Percentage age >29
123	52,84%	4,06%	43,08%

age <24	25 < age < 29	age >29	Total
65	5	53	123

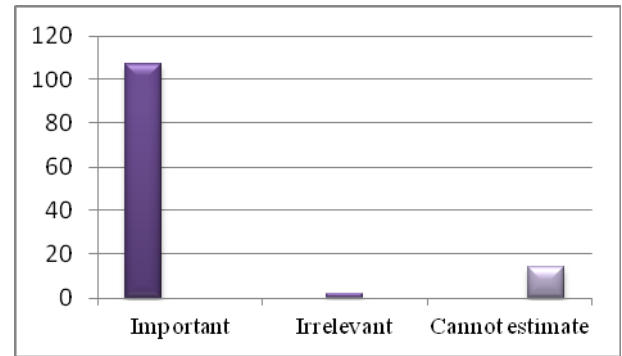
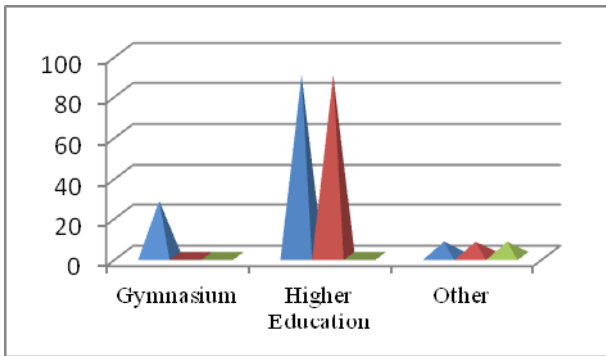


The second type of questionnaire was dedicated to the individuals belonging to the categories having completed research studies.

Gymnasium	Higher Education	Others	Total
27	89	7	123

Total	Percentage Gymnasium	Percentage Higher Education	Percentage Others
123	21,95%	72,35%	5,69%

The diagram for these results is:



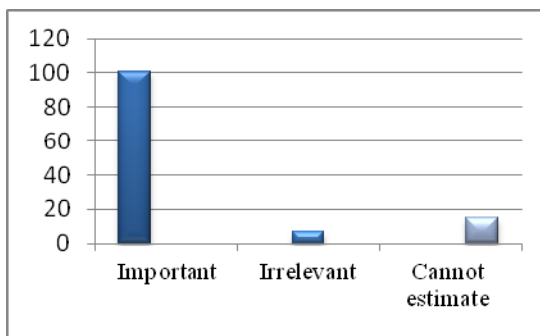
Next type the relevant questionnaire was related to the role of new technologies:

What role do new technologies related to renewable energy play in creating opportunities for creating new jobs?

The answers are:

Important	Irrelevant	Cannot estimate	Total
101	7	15	123

Total	Percentage Important	Percentage Irrelevant	Percentage Cannot estimate
123	82,11%	5,69%	12,19%



Another questionnaire was devoted to determining the role of professional reorientation and we have centralized the answers in the table below:

Important	Irrelevant	Cannot estimate	Total
107	2	14	123

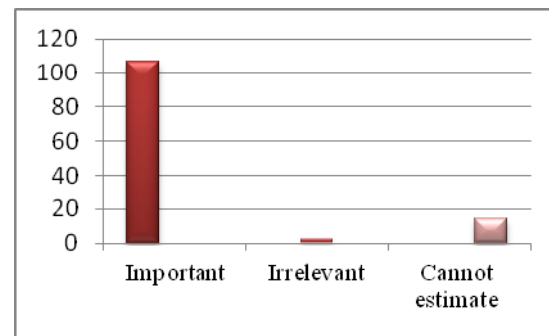
Total	Percentage Important	Percentage Irrelevant	Percentage Cannot estimate
123	86,99%	1,62%	11,38%

This time, too, we emphasize the results using by the next diagram:

Another questionnaire was devoted to determining the role of professional reorientation which has given us the next information:

Important	Irrelevant	Cannot estimate	Total
107	2	14	123

Total	Percentage Important	Percentage Irrelevant	Percentage Cannot estimate
123	86,99%	1,62%	12,19%



We have not overlooked important courses so the question: How many training courses attended after graduation? They responded according to data recorded below.

None	One course	Two courses	More than two courses
52	18	10	43

Total	Percentage None	Percentage One course	Percentage Two courses	Percentage More than two courses
123	42,27%	14,63%	8,13%	34,95%

For this questionnaire we have obtained the next diagram.

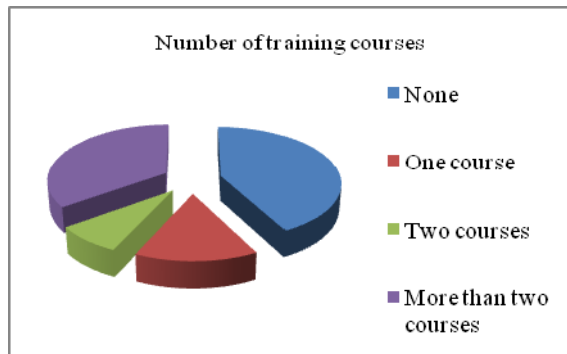


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## 5. CONCLUSIONS

The study showed that renewable energy shows an interest increased among higher education graduates, i.e. 72.35% of respondents are graduates of higher education institutions.

The importance of new technologies related to renewable energy in creating opportunities for the development of new jobs has reached a rate of 82.11%.

Regarding the importance of professional reorientation we have to achieve a rate of 86.99%.

These results are the strengths of the research conducted on a sample consisting of a total of 123 people who have expressed interest in training and specialization which means so important in the field of renewable energies.

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The present article is the result of research of the authors, members of the project team, "Romanian – Bulgarian cooperation for long-term and sustainable development of young human resources in the field of renewable energy technologies with the aim to overcome the social and cultural barrier and find new job opportunities in the trans-border zone" "RES-OP-DEV № .2 (3.I) -3.2-4 MIS-ETC CODE 222."