

## **DEVELOPMENT OF REGIONAL RENEWABLE ENERGY PROJECTS IN ROMANIA THROUGH PUBLIC-PRIVATE PARTNERSHIPS**

*Andreea ZAMFIR<sup>1</sup>*

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### **ABSTRACT**

*The aim of this study is to reveal recent research focused on the public-private partnerships as a possible solution for the development of regional renewable energy projects in Romania. Firstly, some arguments for developing regional renewable energy projects are revealed, and secondly, the responsibilities of local authorities in renewable energy projects, as well as some local measures for developing renewable energy projects are disclosed. The findings of this study reveal that there is a need for cooperation between the private companies and public authorities in order to put into operation regional renewable energy projects. The results of this study may be helpful for upcoming research in the area of implementing renewable energy projects at regional level through public-private partnerships.*

**KEYWORDS:** *renewable energy, regional projects, regional development, public-private partnerships.*

**JEL CLASSIFICATION:** *Q42, R00, O30, M10*

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### **1. INTRODUCTION**

Renewable energy sources can make a major contribution to regional economic development. Thus it is reasonable to involve the local public administration in renewable energy projects' implementation, and this can be done through public-private partnerships. In this context, the aim of this study is to investigate the public-private partnerships as a possible solution for the development of regional renewable energy projects in Romania. Therefore, this study briefly discloses firstly some arguments for developing regional renewable energy projects in Romania. Secondly, it explores the public-private partnership for regional development of renewable energy, with an eye to reveal the role of municipalities in renewabl/e energy projects, and some local measures for developing renewable energy projects. The findings of this study have shown that there is a need for cooperation between the private companies and the public authorities in this sensitive sector of the economy, the renewable energy sector.

The research was conducted using a large variety of sources, such as strategies, regulations, as well as research reports and articles. The research question was answered by analyzing and evaluating published sources, and by interpreting and reorganizing concepts. Answering the research question was difficult, due to the variety of approaches, concepts and definitions found in the literature.

### **2. ARGUMENTS FOR DEVELOPING REGIONAL RENEWABLE ENERGY PROJECTS IN ROMANIA**

Nowadays, various problems and requirements of the society and of the development of cities and regions may be solved by using renewable energy. Therefore, one of the prioritized areas that may

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<sup>1</sup> The Bucharest University of Economic Studies, Romania, zamfir\_andreea\_ileana@yahoo.com

be taken into account in the urban development of cities is the management of the renewable and alternative energy (Hernandez Moreno, 2009: 126).

In the complex picture of energy policy, renewable energy sector is the one energy sector which stands out in terms of ability to reduce greenhouse gas emissions and pollution, exploit local and decentralised energy sources, and stimulate world-class high-tech industries. There are at least four strong arguments for developing renewable energies: first, society relies mainly on fossil fuels, which are limited and non-renewable; second, fossil fuels will be exhausted in a foreseeable future; third, the use of fossil fuels has generated environmental effects that negatively affect social well-being beyond acceptable limits; and fourth, renewable energy sources could satisfy the needs of modern society in terms of consumption and environmental impact.

Policy frameworks and regulatory drivers play a significant role in stimulating the development of regional renewable energy projects. The opportunities for establishing economic growth through innovation and a sustainable competitive energy policy have been recognised. Therefore, the European Commission and the Member States should support national and regional development measures in the field of renewable energy, encourage the exchange of best practices in production of energy from renewable sources between local and regional development initiatives and promote the use of structural funding in this area (The European Parliament and the Council of the European Union, 2009: 16).

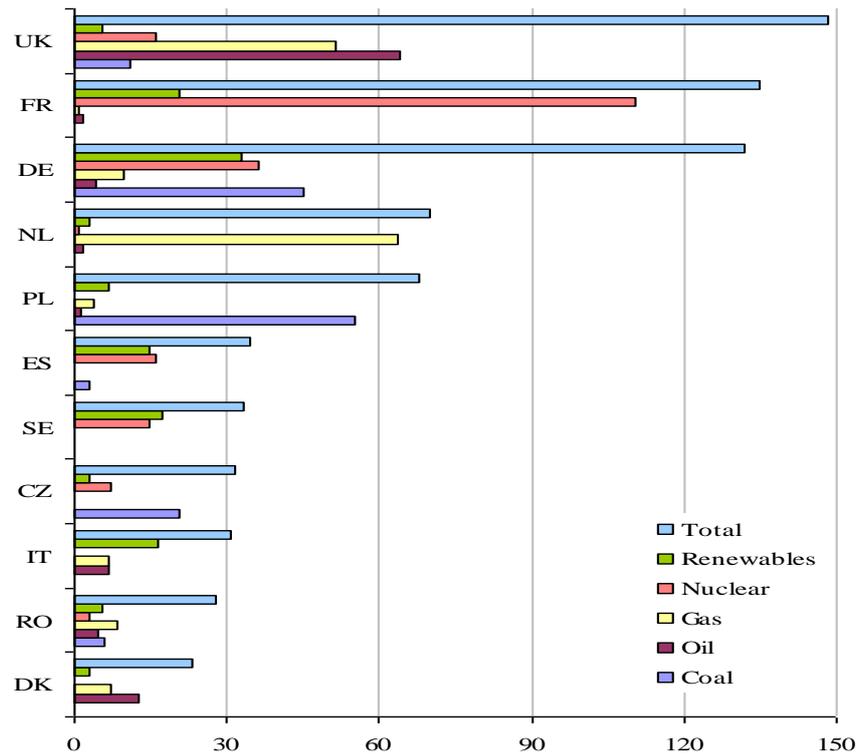
Renewable energy should be increasingly used because it may lead to long term economic growth and may contribute to sustainable urban planning. This statement is based on what Pîrlogea & Cicea (2011) found in their study regarding the ways of obtaining economic growth from energy consumption in urban areas. They investigated if there is a relation in the short and/or long run between economic growth and energy consumption by fuel in Romania. The only renewable source of this study was hydro energy and it has established a long term relationship with GDP, however the relationship is not valid in the short term (Pîrlogea & Cicea, 2011: 81).

Urban management in more prosperous advanced countries is rapidly and seriously transiting from conventional to sustainable energy technologies (Ingwe et al., 2009). Nowadays, a wide variety of technologies provide energy from different renewable sources, such as biomass, wind, solar, hydro, and geothermal sources that have their unique technologies which convert the energy of the resource into a usable form. The elements that differentiate those sources from the conventional ones is their strong spread of the exploitable potential over quite extended areas and the immediate dependence of the season and weather conditions.

The development and implementation of regional renewable energy projects may be based on the natural advantage concept, which is a process that integrates innovation and sustainability policies and actions at a regional scale. The natural advantage manifests in three overlapping areas: (1) policies and initiatives for ecological modernization and cleaner production in industry, government, and civil society; (2) conservation and restoration of natural systems and maintenance of ecosystem services; and (3) innovation, knowledge transfer and partnerships between public, private and community based organisations (Potts, 2010: 714).

A general tendency in European Union is that policies shift emphasis from research and development stimulation towards dissemination and market application of renewable energy technologies (Gan et al., 2007). Also, the European Union recognizes that demonstration and commercialisation phase of decentralised renewable energy technologies should be supported. The move towards decentralised energy production has many benefits, including the use of local energy sources, increased local security of energy supply, shorter transport distances and reduced energy transmission losses. Such decentralisation also fosters community development and cohesion by providing income sources and creating jobs locally (The European Parliament and the Council of the European Union, 2009: 16).

Romania is one of the main energy producers in the European Union (Figure 1), with a total production of 27.74 Mtoe in 2010, of which 5.68 Mtoe is the generation of renewable energy (European Commission, 2012: 17).



**Figure 1. Main energy producers in the EU-27 in 2010 (Mtoe)**  
 Source: European Commission, 2012: 17

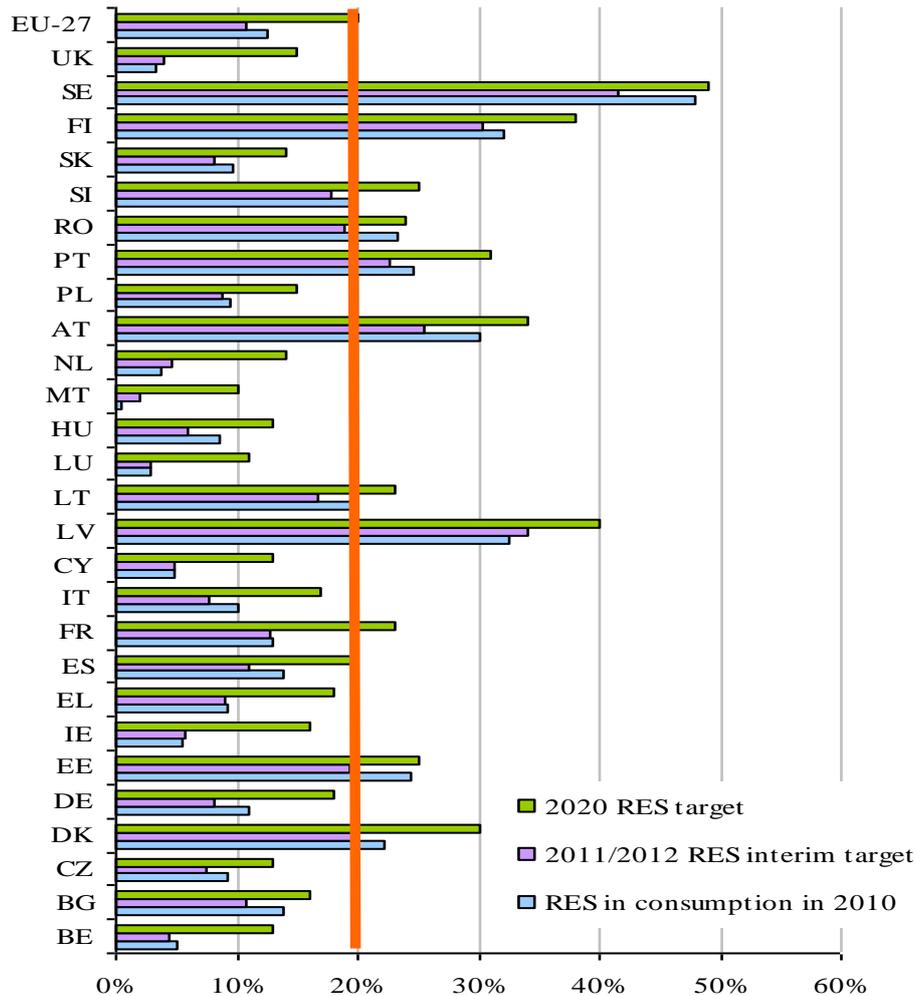
The development of regional renewable energy projects depends on the regional public policies, the infrastructure, specialized human resources and management of the plans and programs of urban development, in addition to other tools, such as methodologies and procedures that help their application. Furthermore, regulation and rules play an important role in the use and advantageous exploitation of renewable energy, as well as the way to apply public policies in the region does (Hernandez Moreno, 2009: 138).

Nowadays it is more or less acknowledged that renewable energy sources have a large potential to contribute to the sustainable development of specific territories by providing them with a wide variety of socioeconomic benefits (Del Rio & Burguillo, 2009: 1315), such as:

- Diversification of energy supply.
- Increased energy security.
- Enhanced regional and rural development opportunities.
- Creation of a domestic industry.
- Decrease of environmental impact.
- Employment opportunities.

Therefore, the development of renewable energy sources is increasingly planned at a regional and local level where needs and opportunities can more easily be taken into account, due to the decentralisation of energy supply which enables local and regional factors to play a more important role (Applica & Iseri Europa, 2011: 10).

The 2020 target for the European Union is of 20% share of renewable energy in gross final energy consumption (Figure 2).



**Figure 2. 2020 targets in renewable energy in the EU-27 (%)**  
 Source: European Commission, 2012: 23

As can be observed in Figure 2, Romania has established a target for 2020 of 24% share of renewable energy in gross final energy consumption, superior of the European Union target. Thus there is a need of developing renewable energy projects in Romania, and this goal may be achieved through partnerships between the public administration and private companies.

### 3. DEVELOPING REGIONAL RENEWABLE ENERGY PROJECTS IN ROMANIA THROUGH PUBLIC-PRIVATE PARTNERSHIPS

All European regions are now interdependent in terms of guaranteeing energy supplies, creating stable economic conditions and effectively combating climate change, taking into consideration the global dimension of the problem. All actors play an essential role in managing this change, at local, regional, national and European level. They have to embrace a new perspective and commit themselves to a sustainable energy policy (Frant & Minica, 2008: 2).

Public support is needed to reach the Community's objectives with regard to the expansion of electricity produced from renewable energy sources, in particular for as long as electricity prices in the internal market do not reflect the full environmental and social costs and benefits of energy sources used. To obtain an energy model that supports renewable energy there is a need to encourage strategic cooperation between Member States, involving, as appropriate, regions and local authorities (The European Parliament and the Council of the European Union, 2009: 19-20).

The ambitious European 2020 targets on energy and climate, and more particular for renewable energy, request an important mobilization of investments in the coming decade (ECOFYS, 2011: 143). Significant investments will be required (3% of cumulative GDP between 2010 and 2030) and the public sector alone won't be able to provide this level of investments (The World Bank, 2010), which means that there is a need to create a climate that is attractive for private investments and/or for public-private partnerships in this sector.

The local authorities and private companies are increasingly collaborating in the area of environmental policy and management, and public-private partnerships for regional sustainable development have been established in many countries (Von Malmberg, 2007: 1731). Public-private partnerships are usually seen as the most innovative interface between the public and the private sectors, being an essential legal instrument for the delivery of public services. Public-private partnerships are seen as a qualitative jump ahead, in the effort to combine the strong sides of the public sector and the private sector (Hodge & Greve, 2007).

The public-private partnerships are voluntarily initiated by public actors as parts of larger programmes and strategies for industrial development and regional restructuring. The goal of the public actors is to support the private companies in developing their organizational capabilities in environmental management, while simultaneously developing the regional economic and social structures to improve the basis for local and regional business development (Von Malmberg, 2007: 1731).

A successful public-private partnership should bring benefits for private sector, generating a profitable revenue stream or expanding market access. The integration of renewable energy projects into regional development process may create external positive effects concerning increased energy security and other regional development goals, such as the reduction of unemployment and the decrease of environmental impact (Klevas et al., 2009: 155). Although the distinctive potentials and contributions of renewable and efficient energy to sustainable and regional development have been recognized, its widespread implementation was delayed (Ingwe et al., 2009). Knowing that energy consumption and economic growth establish a connection, either on short or long term, the key is to decide what technology of energy efficiency to use, what renewable resource to exploit, how to decrease greenhouse gases emissions, how to enhance a green architecture by consuming less of those finite resources and more of renewable ones (Pîrlogea & Cicea, 2011: 81).

Technologies for exploiting renewable energy sources were developed so that their price began to fall and if to this fact are added the subsidies received, than an investment in energy from renewable sources can recover faster than sceptics consider: for geothermal power, payback period is between 6 and 7 years; for wind farms, depending on the type of technology used, the investment is recovered in 7-10 years; for solar farms, depending on their size, the investment is recovered in 6-10 years. These times are estimated for the industrial operation, may change slightly depending on each country, but are used and considered mainly the mentioned values (Pîrlogea, 2012: 22).

In order to implement sustainable regional renewable energy projects, some measures may be taken, such as: (1) encouraging the research and innovation activities, through public-private partnerships in the field of renewable energy; (2) encouraging local initiatives, through reducing bureaucracy and creating an efficient administrative framework; and (3) encouraging renewable energy generators and investors to develop more projects so as to increase the competitive advantage of renewable energy sources.

In the short term, the local authorities may take on the following measures: (1) to find investors for renewable energy plants; (2) to help companies, installers, consultants and actors in the renewable energy sector to establish businesses in the region/city; (3) to buy renewable energy; and (4) to educate the population so as to reduce the community resistance to renewable energy projects' implementation.

#### 4. CONCLUSIONS

This study has revealed that there is a strong need for a renewable energy partnership between public authorities, business community and civil society in order to achieve the regional development of renewable energy in Romania. The development of regional renewable energy projects depends on the regional public policies, the infrastructure, specialized human resources and management of the plans and programs of urban development, in addition to other tools, such as methodologies and procedures that help their application. Sustainable regional development can only be attained if both local public authorities and private companies work together, and if the public administration acts as a facilitator for renewable energy projects' implementation and development.

The partnership between public administration and private companies for regional development of renewable energy could be helpful in order to better address the problems encountered in supporting renewable energy projects by the local authorities.

The results of this study may be helpful for upcoming research in the area of implementing renewable energy projects at regional level through public-private partnerships.

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