Public-Private Partnership for Regional Development of Renewable Energy

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Abstract. This study investigates the public-private partnership as a possible solution for regional development of renewable energy. Firstly, the study reveals the strong connection between renewable energy and sustainable regional development, and secondly, the study discloses some reasons for developing renewable energy through public-private partnerships in Romania's regions. The findings of this study reveal 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. The results of this study may be used for upcoming research in the area of implementing renewable energy projects through public-private partnerships in order to achieve sustainable regional development.

Keywords: renewable energy, regional development, public-private partnership

JEL Code: Q42, R11, L32, M10

1. Introduction

Nowadays there are at least four reasons 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; fourth, renewable energy sources could satisfy the needs of modern society in terms of consumption and environmental impact. Therefore, this study investigates the public-private partnership as a possible solution for regional development of renewable energy. Firstly, the study reveals the strong connection between renewable energy and sustainable regional development, and secondly, the study discloses some reasons for developing renewable energy through public-private partnerships in Romania's regions.

The research was conducted using a large variety of sources, such as articles, research reports, as well as policy documents. The research question was answered by analyzing published sources, by reorganizing concepts, and by evaluating and interpreting evidence.

2. Renewable energy and sustainable regional development

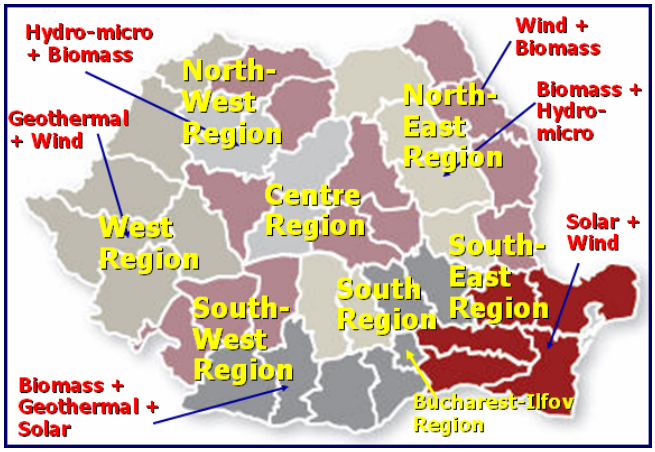
Taking into account the current economic crisis, energy policy should be designed so that energy conservation measures do not negatively affect economic growth. Renewable energy should be increasingly used because it may lead to long term economic growth and may contribute to sustainable urban planning. This statement is based on what Pîrlogea and 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 and Cicea, 2011: 81).

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, including diversification of energy supply, enhanced regional and rural development opportunities, creation of a domestic industry and employment opportunities (Del Río and Burguillo, 2009: 1315). 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 and Cicea, 2011: 81).

Renewable energy sources have a large potential in Romania and moreover, each development region benefits from at least two renewable energy sources that might be exploited (figure 1). Therefore, it is not surprising that the "National Renewable Energy Action Plan" stipulates the promotion of energy production from renewable sources so that the share of electricity produced from such sources out of the total electricity gross consumption to be of 35% in 2015 and 38% in 2020 (Energy Research and Modernising Institute – ICEMENERG, 2010: 13).

Figure 1 **Map of renewable energy potential in Romania**



(*Source:* adapted from Roland Berger Strategy Consultants, 2010)

Sustainable energy development in regional scale needs organizing and implementing institutions, actors, support measures and procedures, etc. Municipalities may play an important role by promoting renewable energy because local authorities are fulfilling their functions in the energy sector through a number of tasks (Klevas et al., 2009: 165). The local authorities play an important role in providing funding for the investments in renewable energy, though many companies have to invest themselves, and substantial support may be provided by grants (Von Malmborg, 2007: 1735).

The development of material infrastructures (transportation, environment, telecommunications, and energy) offers a long range of advantages, but also medium range economic advantages such as the major investments that lead to economic grown and urge the development of adjacent economic activities (Isărescu, 2009; Romanian Government, 2006).

As renewable energy sources have a large potential in Romania, investment projects can be developed to ensure a green energy production, necessary for a sustainable future (Pîrlogea, 2011: 139). However, there are many challenges for both local governments and developers (investors) in the field of renewable energy and its regional development. On one hand, the policy challenge for local governments is to further stimulate and enable the development of renewable energy projects in their regions, in agreement with the national agenda, without compromising local social cohesion. On the other hand, the main challenge for developers is to tackle social resistance without diminishing the profitability and/or the legitimacy of their projects (Rebelgroup, 2011: 4).

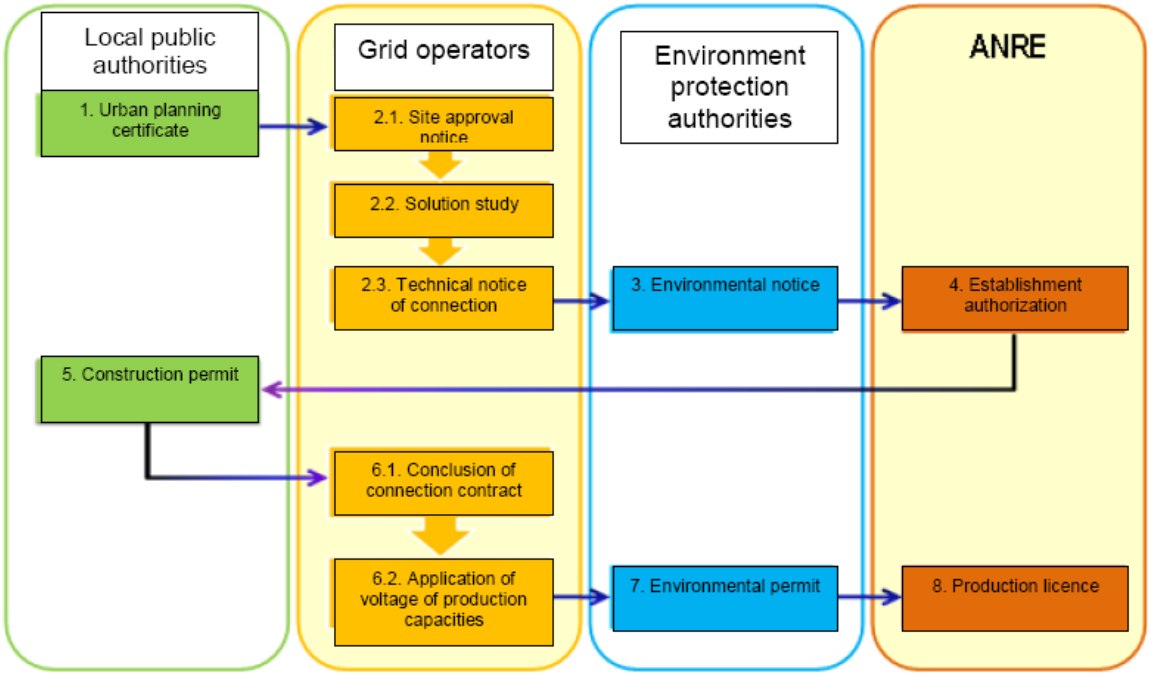
3. Reasons for developing renewable energy through public-private partnerships in Romania's regions

The medium and long-term economic development of countries may be based on the development of renewable energy projects, having in mind that the renewable energy sector is highly dynamic and has enormous growth perspectives around the world (Del Río and Burguillo, 2009: 1325). There are some relevant stakeholders in regional renewable energy projects, such as: (1) the local population, (2) the local non-governmental organizations (NGOs), (3) the local government, (4) the generators and investors in renewable energy, and (5) other actors outside the region. On one hand, there

are interrelationships and interactions between the stakeholders in regional renewable energy projects, and on the other hand, the renewable energy project has an impact on the stakeholders, but the interests and strategies of actors may also affect the viability of the project itself (Del Río and Burguillo, 2008: 1339).

As mentioned before, the local government plays an important role in supporting renewable energy and providing funding for the investments in renewable energy. However, in the same time, the local government may be seen as an administrative barrier to the development of investment projects in renewable energy, on the basis that such a project would have negative impact on tourism and due to local population's disagreement, or because of the influence of groups in the energy field (Pîrlogea, 2011: 136). Another administrative barrier to the development of investment projects in renewable energy is the number of authorities involved in licensing procedures (Pîrlogea, 2011: 136). For instance, local public authorities, grid operators, environment protection authorities, and Romanian Energy Regulatory Authority (ANRE) are all authorities which provide the set-up authorisations and licences for the production capacities using renewable energy sources (figure 2).

Figure 2 **Stages of carrying out and commissioning a production capacity using renewable energy sources**



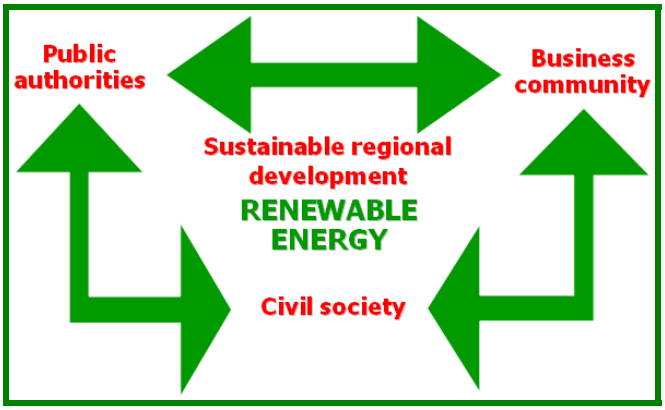
(*Source:* Energy Research and Modernising Institute – ICEMENERG, 2010: 41)

In order to set-up the production capacity for a producer of electricity from renewable sources, the following documents are necessary: (1) documents issued by the authority of the county or local public administration: (a) urban planning certificate, which includes specifications on all the approvals to be obtained, and (b) building permit; (2) documents issued by the electricity grid operator to which the installation is to be connected: (a) building site approval notice, and (b) technical connection approval notice; (3) documents issued by the environment protection authority: (a) environmental notice, and (b) environmental permit; and (4) documents issued by the Romanian Energy Regulatory Authority (ANRE): (a) set-up authorisation**,** only for energy units having installed power higher than 1 MW, (b) E-RES production licence, and (c) qualification for priority electricity production (Energy Research and Modernising Institute – ICEMENERG, 2010: 40-41).

Therefore, 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 (figure 3). In the past decade we have witnessed all over the world an increase in the public sector's interest for signing public-private agreements, a new way of managing and governing organizations that deliver public services, including the ones in the field of energy. Public-private partnerships popularity is due to the fact that governments are more and more eager to increase the quality and efficiency of public services, but in the same time they face insufficient budgetary resources to cover investment needs, coupled with public spending restrictions (European Commission, 2003). Public-private partnerships are

usually seen as the most innovative interface between the public sector and the private sector, being an essential legal instrument for the delivery of public services.

Figure 3 **Public-private partnership in the field of renewable energy for sustainable regional development**



The growing popularity of public-private partnerships projects is due to the advantages it may bring, such as: (1) rapid infrastructure delivery; (2) cost reduction for the public sector; (3) efficiencies gained in task allocation of large and complex operations; (4) stability gained through commitment to long-term projects; (5) accountability established through involvement of a wider range of stakeholders; (6) use of private management, experience and know-how for service delivery, that could imply service restructuring in order to make it competitive; (7) risk sharing and improved risk allocation; and (8) improvement of service quality (Hodge and Greve, 2007).

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 Malmborg, 2007: 1731).

In order to implement sustainable regional renewable energy projects, some long term 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 local population resistance to implementation of renewable energy projects.

The investment in regional and local production of energy from renewable sources may enhance the opportunities for growth and employment in the Member States and their regions. Therefore, national and regional development measures in those areas may be supported, the exchange of best practices in production of energy from renewable sources between local and regional development initiatives may be encouraged, and the use of structural funding in this area may be better promoted (The European Parliament and the Council of the European Union, 2009: 16). Moreover, extending the cooperation between the public and the private sectors may bring the advantages of a low opportunity cost for learning from the collaborators' experience and for using their resources (Popescu and Corbos, 2011: 34). In the future, the development of sustainable green cities and regions may encourage a paradigm shift that leads to visionary, creative and inclusive urban management. As for now, any action, program or public-private partnership in the field of renewable energy for the development of cities and regions in Romania is very welcomed, because it may be a starting point for raising their competitiveness and transforming them into sustainable green cities and regions.

4. Conclusion

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. Public-private partnerships are usually seen as the most innovative interface between the public sector and the private sector, being an essential legal instrument for the delivery of public

services. If both local public authorities and private companies work together in order to implement renewable energy projects, than sustainable regional development can be attained. In addition, the public administration may act as a facilitator for renewable energy projects' implementation and development.
The results of this study may be used for upcoming research in the area of implementing renewable energy projects through public-private partnerships in order to achieve sustainable regional development.

5. Acknowledgments

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6. References:

1. *Del Río, P. and Burguillo, M. (2008), "Assessing the impact of renewable energy deployment on local sustainability: Towards a theoretical framework", Renewable and Sustainable Energy Reviews 12(5): 1325-1344.*
2. *Del Río, P. and Burguillo, M. (2009), "An empirical analysis of the impact of renewable energy deployment on local sustainability", Renewable and Sustainable Energy Reviews, 13(6-7): 1314-1325.*
3. *Energy Research and Modernising Institute – ICEMENERG (2010), "National Renewable Energy Action Plan", Bucharest, last accessed September 27, 2011, <http://ec.europa.eu/energy/renewables/transparency_platform/doc/national_renewable_energy_action_plan_romania_en.pdf>.*
4. *European Commission (2003), Directorate- General for Regional Policy, "Guidelines for Successful Public-Private Partnerships", Brussels.*
5. *Hodge, G. A. and Greve, C. (2007), "Public-Private Partnerships: An International Performance Review", Public Administration Review, 67(3): 545-558.*
6. *Ingwe, R., Inyang, B., Ering, S. and Adalikwu, R. (2009), "Sustainable Energy Implementation in Urban Nigeria", Management Research and Practice, 1(1): 39-57.*
7. *Isărescu, M., (2009), "Criza financiară internațională și provocări pentru politica monetară din România (II)", in TopBusiness online, No 756, March 2009, last accessed August 20, 2011, <http://www.topbusiness.ro/romania/archive/article/Criza+financiara+internationala++%BAi+provocari++pentru+politica+monetara+din+Rom%E2nia+%28II%29.html>.*
8. *Klevas, V., Streimikiene, D. and Kleviene, A. (2009), "Sustainability assessment of the energy projects implementation in regional scale", Renewable and Sustainable Energy Reviews 13(1): 155-166.*
9. *Pîrlogea, C. (2011), "Barriers to Investment in Energy from Renewable Sources", Economia. Seria Management, 14(1): 132-140.*
10. *Pîrlogea, C. and Cicea, C. (2011), "Obtaining Economic Growth from Energy Consumption in Urban Areas", Theoretical and Empirical Researches in Urban Management, 6(3): 73-83.*
11. *Popescu, R. I. and Corbos, R. A. (2011), "The Brand of Bucharest – A Generator of Opportunities or Competence Needed in the Urban Competition?", International Journal of Energy and Environment, 1(5): 29-38.*
12. *Rebelgroup (2011), "Benefit Sharing Mechanisms for Renewable Energy Sources (RESHARE)", final report 2011, last accessed June 25, 2011, <http://www.reshare.nu/athena/site/file_database/Reshare_outlinenewFINAL.pdf>.*
13. *Roland Berger Strategy Consultants SRL (2010), "Green Energy in Romania", last accessed October 17, 2010, <http://rbd.doingbusiness.ro/ro/5/articole-ultima-editie/1/373/green-energy-in-romania>.*
14. *Romanian Government (2006), "Post-adhering Strategy 2007-2013", Bucharest, December 2006, last accessed October 20, 2009, <http://www.guv.ro/obiective/200701/strategie_post_aderare.pdf>.*
15. *The European Parliament and the Council of the European Union (2009), "Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC", last accessed June 25, 2011, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0028:EN:NOT>.*
16. *Von Malmborg, F. (2007), "Stimulating learning and innovation in networks for regional sustainable development: the role of local authorities", Journal of Cleaner Production 15(17): 1730-1741.*