FACTORS INFLUENCING LOCAL RENEWABLE ENERGY INITIATIVES IN DIFFERENT CONTEXTS

Comparative analysis: Italy, Romania and the Netherlands

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August 2014,
Enschede, the Netherlands

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Abstract

There are many local energy initiatives in Europe aiming to introduce renewable energy. In order to see how these initiatives can be spread across Europe, a critical first step is to see what factors influence or might determine the development of local renewable energy initiatives. Therefore, this paper explores the stimulating factors for these developments, based upon an analysis of the factors affecting these initiatives in Romania, Italy and Netherlands respectively.

A step carried for this purpose was a literature review. Moreover, based on the research developed by Boon (2012), for the assessment of the fostering and hindering factors in the Netherlands, an assessment framework was developed. This framework was transformed into a checklist of factors that was given for further assessment to the people affiliated with initiatives in Romania and Italy. This was done with the help of interviews, with founders or closely involved persons in such initiatives. In this manner the factors were empirically tested and additional insights were added. This led to the discovery of factors that foster the development of local renewable energy initiatives more clearly and specifically, to each context and major differences and similarities were highlighted.

Key words: local renewable energy initiatives, key fostering factors, Italy, Netherlands, Romania

I. Introduction

I. 1.Problem statement

In recent years, in the European Union there has been a growing concern over climate change as a result of human activities. Given that our production and use of energy plays a significant role in this, the push for more sustainable energy systems is gaining momentum. A low carbon economy is now central to the European policy and there are climate and energy targets set for 2020, known as the 20-20-20 goals. By promoting renewable energy production, the EU wants to combat climate change, secure its energy supply and to increase its competitiveness in the energy sector (European Commission, 2014).

Moreover, this not only implies radical changes in the dominant idea of a centralized energy system, but also building new relationships within and between communities, opening up the doors for a new mode of infrastructure and governance (Mazini, 2006). The transitions to low carbon societies require a shift in behavior that go hand in hand with changes in infrastructure, governance mode and its institutions, and cannot be seen as isolated from the context where it emerges.

In this respect, the local renewable energy initiatives are seen as a step further in this direction. The reasons behind researching on this topic rely in the fact that generating energy from renewable sources not only reduces the CO2 emissions and avoids environmental degradation, but it also stimulates the local economy by creating jobs. In this way it can contribute to raising the living standards and can combat poverty. Developing these initiatives at the local level, close to the citizens, can also contribute to changing the citizens' behavior towards more sustainable practices (Local renewables, 2014).

However, despite the associated benefits, the transition towards renewable energy across Europe varies from country to country. Some countries take the lead, and build capacity, while others follow suit. An assessment over five regions in Europe made by Krozer (2012) confirms that there are large differences in energy developments not only between countries but also within countries. As Tabellini (2005) argues it is also necessary to take into account the culture and the current economic development, in order to deploy these types of developments. The institutions, economics, the politics and the possibilities vary enormously depending on the context. At the same time, they face similar challenges, and lessons can be learned from cross-country experiences.

Therefore further research in this area can provide good insights on how to spread these initiatives. A line of research would be to discover the key elements of success associated with local renewable energy initiatives. It is necessary to see what the connections are between the factors affecting them and to determine what levers are involved.

Therefore, this paper explores the stimulating factors for the development of local renewable energy initiatives, based upon an analysis of the factors affecting these initiatives in different countries. This is done through a cross-country comparison that will highlight the incentives met in each country and might reveal factors that would remain unnoticed otherwise. To

better understand the incentives in local renewable energy initiatives, a study in Romania, Netherlands and Italy is proposed.

I.2. Research objective

The goal of this thesis is find out what are the fostering factors in developing local renewable energy initiatives in different contexts, by analyzing the existing initiatives in three European countries. Looking at countries with different economic and cultural backgrounds can help highlight the most important factors that need to be taken into consideration for these sorts of developments or to identify new aspects that were previously ignored.

I.3. Research questions

The aim of this research is to identify which explanatory factors fostered or hampered the emergence of local renewable energy organizations in Romania, the Netherlands and Italy in the recent past. I am going to reflect on related theories and existing local renewable energy initiatives (L.R.E.I.) in the three countries under investigation.

It also aims to test a set of factors affecting the development of the initiatives. Furthermore, this assessment will help explain whether these factors actually explain the emergence and development of L.R.E.I. in the respective countries.

Main research question:

Which factors influence the development of local renewable energy initiatives in different contexts, based on a comparative analysis of the existing initiatives, in the Netherlands, Italy and Romania?

Research sub-questions:

1. What are the key factors for the emergence and development of local renewable energy initiatives that can be derived from the existing academic literature?

An answer to this question is generated from the literature review. Referring to Boon's (2012) work for the assessment of fostering and hindering factors in the Netherlands, a framework will be developed that is used to assess the initiatives from the other two countries, Italy and Romania respectively.

2. What are the relevant factors identified on the basis of analysis of the existing initiatives in Romania and Italy?

The fostering factors are identified from practice, by testing the assessment framework through expert interviews or people affiliated with initiatives from Italy and Romania. Upon analyzing the existing initiatives in the two countries, the common factors influencing positively the dynamics of local renewable energy initiatives will be derived.

3. What are the recommendations and lessons that can be learned in order to foster the development of local renewable energy initiatives in different contexts?

Based on the findings from the three countries, the distinctive factors are summarized, forming the basis for discussion and conclusion.

II. Methodology

This chapter presents the research methodology. It describes the research strategy, purpose, approach and methods. At the end it analyzes the limitations that could have restrained the present research.

II.1. Research strategy

To begin with, the researcher completed a literature review to find out what the other authors in the field had to say about the subject. The findings in the literature review revealed that there is a need for empirical data. Therefore in order to gather this data, the main instrument for this purpose, in this research, is the interview. In order to provide a comprehensive analysis both methods of data collection, qualitative and quantitative, converge in this interview. This means that the data is collected at the same time and then integrated in the interpretation of the overall results.

The research is separated in three different steps:

The 1st step is a literature review carried out in order to provide an answer to the first research question. Moreover, at this stage an assessment framework is developed, based on the one (See Figure 1 from the Appendix) developed by Boon (2012) for the assessment of the fostering and hindering factors in the Netherlands. This framework is transformed into a checklist of factors that is given for further assessment to the people affiliated with initiatives in Romania and Italy.

The 2nd step of the research consists of the actual interviews, with founders or closely involved persons in such initiatives. They are asked to add additional insights from their own experience and to offer background information. Moreover, the theoretical framework will be empirically tested through these interviews. This will lead to the discovery of factors that foster the development of local renewable energy initiatives more clearly and specifically, meaning that it will confirm or reject certain variables from the preexisting framework.

The 3rd step consists of identifying and summarizing the common factors from the three countries, identifying major differences and similarities.

Finally, there will be an analysis focused on the factors found along the study that influence these developments. This forms the basis for recommendations and discussion for local renewable energy initiatives developments in different contexts.

II.2.Research purpose

This thesis aims at developing exploratory, explanatory and descriptive knowledge. Firstly, this thesis explores the concept of local renewable energy initiatives and the factors affecting them. Furthermore, it tests the validity of these factors in different contexts, therefore, it explains which factors are common for different contexts. It is descriptive by aiming at

making a comparison between three different countries, highlighting similarities or differences that affect these developments.

The thesis does not aim to give an exhaustive assessment of the barriers and incentives for local renewable energy, but rather to highlight the major factors for the development for these types of initiatives and whether these factors explain their development level in different contexts.

II.3. Research approach

This thesis uses mainly a qualitative research approach, however, some of the information is also interpreted in a quantitative manner. This approach is chosen since the researcher wants gain insight and understanding of the phenomenon in question, but also wants to see if generalizations can be made.
The qualitative approach draws on the analysis of the existent literature in the field, collecting information from the scientific literature, various reports, and newspaper articles. This part was necessary as the researcher had little previous knowledge about the subject; therefore it was necessary to understand it first, to see where there is little research and how to develop further the study. Furthermore, the findings from the desk research are completed with information that is collected with the help of interviews. The first part of the interview has an exploratory approach and wants to complete the general view regarding the development of L.R.E.I. The second part of the interview is designed in the form of a questionnaire and assesses the information in a more quantitative manner. This aims at collecting more detailed information about specific factors influencing the development of L.R.E.I. . This part wants to test the influence of the specific factors and measures their validity numerically. In the end the findings from the interviews are correlated and conclusions are drawn.

II.4.Research method

For this research the data is collected in two ways: through literature review, for developing a research framework and through interviews.

II.4.1. Introduction to the interview

What is the interview about? Why is the interview carried out?

The desk research revealed that the there is little literature concerning fostering factors for the development of L.R.E.I. in different contexts, therefore, the researcher needed to collect its own data. The research method used for this purpose is the interview. The main reasons for choosing this method is because in this manner the interviewed people can go to the roots of the problems, give more information or clarify certain aspects.

Moreover, the reason for conducting the interviews is twofold. For this purpose it is separated in two parts. The first part is dealing with more **general**, **open questions** about the development of L.R.E.I. in each context. The second part, deals with **specific**, **closed questions** with fixed answers that addresses directly the assessment of the fostering factors for the development of L.R.E.I. This part of the research is therefore a mix between qualitative and quantitative data.

First part: general overview

The aim of the **first part** is to gather relevant information in order to develop a general overview over the developments of L.R.E.I. in each country. The data gathered in this manner completes the desk research, with information from a practical perspective. The questions are put in an open manner in order to encourage the interviewed experts to express openly and elaborate on their answers and in this way gather more relevant data (Saunders, 2009, page 337).

The first part aims at gathering qualitative information, to better understand the initiatives in question. Some information can be specific only to certain contexts and it cannot be obtained if questions are put only in a closed manner. This information can make easier to understand why certain factors are more relevant in certain contexts than in others. Correlations can be made between the general level of development for these types of initiatives and a certain degree of influence of the tested factors.

Therefore, six open questions are asked in the first part of the interview. As the answers can be very different depending on the respondent, in order to analyze and compare the data in a systematic manner, it is collected and analyzed in six clusters (Saunders et al. 2009, p.482 and 492). These clusters are defined by the questions at hand. Gathering the information themed under the questions provides the advantage of not only comparing the respondent's answers across countries, but also to make correlations between the themes themselves.

The questions used are based on the research developed by Boon (2012) for the research carried out for the development of L.R.E.I. in the Netherlands. The main reason for using this framework is to test the validity of the factors he analyzed in other contexts as well. Moreover, it means that a sound base for comparison is also developed.

1. The first clusters deals with the approximate **number of initiatives** and is built around the following question:

Could you estimate how many local renewable energy initiatives are active at the moment in your country?

The experts are inquired to provide an estimation of the number of initiatives existing in each country, according to the given definition for this research. This is necessary in order to see the general level of development of these L.R.E.I. in the context of interest. Another aim is to see if there are differences or similarities between the respondent's answers among and between countries. This also helps assess later why in some countries this number is bigger or smaller.

2. The second cluster deals with the **reasons for development** and is built around the following question:

Can you give some reasons why these initiatives were developed on a local scale?

In order to see how these initiatives can be fostered and why in some contexts are better developed than in others, it is necessary to know first of all what their main drivers are.

3. The third cluster deals with the **success elements** that characterize these sorts of initiatives and is based on the following question:

What makes a local renewable energy initiative successful? Can you give examples and contact details?

The answers to this question should provide a better and deeper understanding over the development of L.R.E.I..; to discover what actually drive these initiatives, what the end goals or interests are for these sorts of initiatives. Furthermore, as it is an exploratory study, the researcher takes the chance to find out about more successful initiatives that could be further inquired or investigated.

4. The fourth cluster deals with the **development level** of these sorts of initiatives in the respective countries, and in order to see if their number decreased, stagnated or increased, the following questions are asked:

What was the growing rate of these kinds of initiatives in the recent past?

What was the growing rate of these kinds of initiatives in the future?

5. The fifth cluster gathers the **decisive factors** that are influencing the development of L.R.E.I.. Therefore, the following question is asked:

What are the most decisive factors in the diffusion of these kinds of initiatives?

The researcher wants to let the respondent express openly its opinion on what he considers to be the relevant factors. This comes to complete the factor's assessment in the second part of the interview. The researcher wants to leave open the possibility that other factors than those submitted for evaluation can be of importance. This can add more interesting insights, and can provide a deeper understanding over the fostering or hindering factors for the development of L.R.E.I..

Second part: The assessment of the factors

The factors submitted for evaluation are extracted from the framework developed by Boon (2012) for the research in the Netherlands. In this way the researcher wants to test the validity in other contexts as well.

Table 1 from Appendix B shows the list of factors and how they are submitted for assessment. The respondents are asked to choose from a scale assessing the factors with: 'no support', 'limited support', 'moderately supportive', 'supportive' and 'very supportive'. Therefore those marked by limited or no supported are evaluated as having an irrelevant or negative impact (-1). Those marked with moderately supportive(''0'') are considered to have a neutral impact and those marked as being supportive or very supportive are considered to have a positive influence (+1)over the development of L.R.E.I..

The relevance of the factors in fostering the development of L.R.E.I. are calculated as follows:

-1 *number of respondents + 0*number of respondents + 1 * number of respondents > 0→ the factor is confirmed

-1 *number of respondents + 0*number of respondents + 1* number of respondents < 0→ the factor is rejected

Who are the interviewed people?

The targeted actors for the interviews are people from various organizations across the countries. Among the consulted experts, there are people affiliated with NGOs, local energy agencies, universities, research centers, civil initiatives or energy associations. Moreover, the researcher tried to encompass diverse opinions over the development of L.R.E.I., therefore people from different regions across the countries were contacted. This was in order to avoid the bias of collecting responses only from a particular region or group of people.

Interviewees were selected after scoping a range of websites in connecting to L.R.E.I., identifying potential organizations or contact persons. This list was extended through information gathered as the interviews progressed, using the snowball method. Some of the interviewed people recommended other persons or initiatives that could be of interest.

After contacting a number of people and organizations affiliated with these sorts of initiatives, see Table 2 from Appendix C and Table 3 from the Appendix D, the final number of respondents was reduced to 9 in Italy and 12 in Romania. In Italy there were 5 respondents affiliated with citizen-led initiatives and 4 respondents affiliated with institutional-led initiatives. In Romania there were 4 respondents affiliated with citizen-led initiatives and 8 affiliated with institutional-led initiatives. Tables 4 from the Appendix E and Table 5 from Appendix F show the details about the respondents and the affiliated organizations.

When and where was the interviews carried out?

The interviews were carried out over a period of four months, starting in April and finishing in July. Table 4 and Table 5 from the Appendix E and F respectively show the dates of the interviews.

How were the interviews carried out?

Due to efficiency reasons, personal visits were not possible; therefore the interviews were carried out either **by mail or phone.** In order to limit the bias represented by language as much as possible, the researcher was able to translate the interviews into Romanian for an easier communication. However, this was not possible for the interviews carried out in Italy, hence they were carried out in English.

After making a selection for the persons that could be of interest for the research, notification e-mails with the interview were sent. Most of the respondents were available to respond by

mail, but some were also available for a phone interview. Table 4 from Appendix E and Table 5 from Appendix F show the method of contact.

II.5. Quality standards: Limitations

There are several limitations to the applied methods. First of all the countries selected might not be a representative sample, therefore the significance of the findings is limited. The number of interviewed persons is as well limited and this can provide insufficient insights for a more general understanding of the phenomenon.

The selection for the interviews was done through Internet platforms and this might have left out initiatives that are not registered online. At the same time it can be said that these initiatives are the ones worth taking into account since these are successful enough to be advertised online. Also since the researcher had troubles reaching some contacts, the snowball method was also used to reach more persons. However, this might have affected to an extent the overall results. This part of the sampling is heavily reliant upon the recommendations made by the respondents and this might not be representative for the targeted area.

Moreover, the data gathering by means of interviews proved to be a rather challenging process, since it was time consuming and in some cases inefficient. Some respondents responded after a long period of time, not respond at all or gave incomplete answers. Mail reminders were sent and, where possible, the persons were directly contacted through phone. However, this did not always guarantee the success. In the case where the respondents have not replied after the first mail, a reminder mail was again sent. In some cases, where possible, the persons were directly called, this leading to diverse situations when they would either agree to respond immediately or they would agree to send the answers to the questions by mail at a later stage, causing delays in the research process. Because the questions were presented beforehand to the respondents, this had on one hand the advantage of accommodating the persons with the questions, but on the other hand this could have discouraged genuine answers.

Another disadvantage is that the data might have been biased by the person's knowledge about the subject, the will to divulge this knowledge and the ability to transmit this knowledge in a foreign language. Language did indeed limit to a certain extent the research. If the interviews could have been translated in Romanian for an easier communication and understanding, this was not possible for Italy. Since the interviews had to be carried out in English, this could have limited the data gathering.

In the end the phone interviews proved to be richer in content, but this was not always possible to arrange, either because there was no access to the respondent's phone number or they preferred to answer the questions by mail. Therefore, the research and its quality were highly dependent on the respondent's willingness to respond and to provide the necessary information. As a result, the data collection process was more constrained than previously predicted. On the other hand it was an advantage to have the answers to the questions written by the interviewed persons themselves, avoiding in this way the chance of biasing the interviewer's response through transcription.

III. Literature review

The literature review has three aims. The first one is to clarify and to define the concept of local renewable energy initiatives (L.R.E.I.). Secondly, it aims to find out more general information about these initiatives, such as reasons for development or successful outcomes. This has a correspondent in the first part of the interview. And thirdly it aims to find out about specific factors affecting these initiatives. This has a correspondent in the second part of the interview.

The concept of L.R.E.I.

After immediately diving into the existing literature it became visible that there is a diversity of interpretations and flexibility when discussing the concept. Forming an overall picture about its definition and a broad consensus over its meaning, is still in an infancy stage (Walker& Divine-Wright, 2008).

Different definitions are given on grounds of practicality, strategy or norms (Walker et al 2006, page 10). This liberty in interpretation, although seen as problematic by some, it gave at the same time the opportunity to tailor it to different requirements and needs.

To some authors, the L.R.E.I. concept is often related to the community concept, and refers to these sorts of initiatives as community energy initiatives (Smith, Seyfang, Walker, 2007, 2008). Through community we understand in this context therefore, the group of people that live in the same place.

Walker and Devine Wright (2007, 2008) were the authors that recently highlighted the debate over the definitions for community energy initiatives. They used two big lines to define community renewable energy. One is concerned with the process that takes place and the second one deals with the outcome. The first one defines how people are involved and how the process unfolds. The second meaning refers to the outcome dimension and looks more at how the benefits are distributed locally. Analysing from this perspective, three main types of community renewable finally emerged. The first view is based on a high degree of involvement of local people in the planning, setting and running the project. The second perspective is drawn from how the benefits and outcomes are distributed at the local level. The third view is a combination of the two and wants to offer a closer perspective to a real life situation, tackling the complexities that arise in the process (Walker and Devine-Wright, 2007).

Moreover, Walker (2007, page 8) distinguishes between two types of participation, “open, local and participatory” and “closed, distant and institutional”. These have two different outcomes: “local and collective” and “distant and private”, respectively.

The present research uses this interpretation to form the basis for the definition. Therefore, the analysis will distinguish between initiatives that are developed by the citizens themselves, called **citizen led initiatives**. These are developed entirely by citizens, from a desire to make a difference at the local level by using renewable energy technology. While on the other hand,

there are initiatives that are developed by or with the help of local authorities or other regional bodies. These initiatives will be named **institutional led initiatives.**

The citizen led initiatives can be better understood if it is related to the concept of 'prosumer' or to the concept of user led innovations.

The *user-led innovation* concept perfectly exemplifies the benefits of citizen involvement. In this concept, citizens are user-innovators at the centre of the process, which get to develop products or services how they want, without the help of an outside party. Usually these users share their knowledge inside their community freely, increasing in this way the speed of diffusion of renewable energy technologies (Harhoff, Henkel,von Hippel, 2003).

Also, Toffler (1980) talks in his book the "Third Wave", about the rise of the "prosumer", the consumer that is actively involved in the improvement of products or services, who begins to perform services for them. In this way there is a shift in production where 'do-it –yourself" movement is taking the place of conventional production (Toffler, 1980, p. 267). He also talks about the rise of diversified and decentralized, new technologies, such as renewable energies and new methods of production. Here, users tend to engage in different forms of cooperation, whether more formal or informal organizations. This type of approach is emphasized as a way to speed up the diffusion of technological innovations.

The REScoop can be given as an example in this sense since this form of organization supports the active involvement of 'prosumers'. The REScoop (renewable energy sources cooperatives) are a ''group of citizens, cooperatives or community-based organizations that cooperate and develop activities in the field of renewable energy sources'' and develop the following activities: ''the production, supply and/or distribution of renewable energy, as well as the provision of other support services to members'' (Rescoop Action Guide, n.d., p.4)

Why do these initiatives develop?

Across Europe localities have started to respond to the challenges posed by non-sustainable production and consumption. The reasons behind these developments are multiple. It can reside in challenges posed by environmental or ecosystem problems met in human communities, such as pollution from conventional sources of energy; more and more people want to make the transition from fossil or nuclear power to renewable energy sources. Other motivations are triggered by political and economic factors, such as the dependence on finite, non-renewable energy sources that are the source of rising and acute political tensions. It can be motivated by the rise in energy prices or energetic shortages. Other times it can be a result of the liberalization of the energy market or a combination of all of reasons presented above (REScoop 20-20-20, n.d.).

Key factors affecting the development of L.R.E.I.

The literature approaches the concept of renewable energy development from economic, technical, institutional, political, and behavioural perspectives. Some researchers focus on countries as a unit of analysis, some on regions and some on systems built around certain technologies (Jacobsson and Johnson, 2000). In this research the literature review is

developed around six clusters of analysis: organizational aspects, economic, technical, macro, market and society and government. This structure is related to the framework used in Boon's (2012) research for the assessment of the hindering and fostering factors in the Netherlands. This represents an integrative framework that can be applied to understand the development of innovations, such as L.R.E.I. (Boon, 2012, p. 15). This structure is also reflected in the second part of the interview.

The organizational characteristics cluster gathers aspects related to the organization of the initiative, such as the people involved, the size of the organization or the business plan. In terms of economic characteristics, the literature was scrutinized in order to find factors that could affect the development of L.R.E.I. from a financial perspective, such as investment costs or subsidy availability. The technological cluster aims to gather factors that are related to the technical side of the projects and that could influence the development of L.R.E.I., such as the renewable energy equipment or its aesthetics. Apart from this, the governmental clusters looks for factors that could influence these developments from an institutional or policy level perspective. The market and society cluster looks for societal aspects that could impact these developments, such as the existence of a pro-environmental culture or supporting organizations that promote the usage of renewable energy. The macro cluster deals with the developments in society at large, such as the level of environmental awareness within the society or the developments related to the energy system, such as the existence of a centralized or decentralized system.

Organizational characteristics

Looking from an organizational perspective, **s**ome initiatives put much emphasis on involving the citizens, whereas some do little or nothing to involve the citizens, to empower them or to share the benefits among the citizens (Walker,et al., 2007). However, having a lack of citizen involvement is often seen as a barrier for the successful deployment for these initiatives (Willey, Hester, 2001, Neuhoff, 2005). Researchers have found that the development of L.R.E.I. depend on an effective mobilization of the local people. This is often seen as a precursor towards starting an energy initiative. Moreover, having attitudes and perceptions towards collective action and towards sharing the benefits with the local community is an incentive towards these developments (Bomberg and McEwen, 2012).

Loring (2007) also states that higher levels of citizen participation, increases the support towards these projects at the local level, helps develop trust and creates the necessary networks of support and acceptance for these developments. It also gives the opportunity to control the project locally, meaning that the projects can be tailored according to the local context (Walker, 2008, p.4402). Citizens working together and sharing a *community identity* is often seen as a way to overcome obstacles met in the development path (Bomberg and McEwen, 2012), such as a negative perception towards renewable energy technology (Walker, et al., 2007).

Moreover, projects that are partly or fully owned by the community have higher chances of being accepted at the local level, to receive easier planning permissions or to obtain the

necessary funding for their development. Also citizens can procure equipment and materials collectively, which can lower the purchase costs (Walker, 2008).

Looking at the size of the initiative, large-scale projects are found to have an advantage in terms of cost saving (Warren and McFadyen, 2010) although a smaller size is preferred since it is easier to manage or to diffuse the necessary knowledge (Walker, 2010). Another reason is that if projects are easy to control, they can be replicated a lot easier. Therefore, managing multiple small-scale projects often poses fewer difficulties than managing a single, large-scale complex project. Moving fast and being successful on small-scale projects is seen as a better way to attract the interest of more people (Rescoop 20-20-20, n.d.)

Of course, it is not to assume that all local initiatives are integrated harmoniously, but the idea behind this reasoning is to offer room for more integration and cooperation, which are factors found to encourage such developments. The initiatives should not be a source of fragmentation or opposition within the locality and the case where a vested elite dominates a certain project for the sole reason of financial profit, should be avoided (Scheyvens, 1999). If the gains are restricted only to a small group of people, this might bring controversies that would affect negatively the community's cohesion and integration, and thus the L.R.E.I. developments.

The type of business model can differ from case to case. This can range from just focusing on producing, on selling the energy or can be a combination of both. Moreover, it was found that diversifying the services, having a combination of business models, or having alternative business models, can strengthen the resilience of the initiative and can assure its survival in case one line of the business fails (Rescoop 20-20-20,n.d.).

Economic characteristics

Other factors that affect the development of renewable energy on a local scale is represented by financial aspects. High costs for investments and long payback periods (Sidiras, Koukios, 2004; Willey, Hester, 2001; Walker, 2008) are many times seen as hindering factors. Therefore, many times financial assistance, in the forms of grants and subsidies, is needed (Balcombe, Rigby, Azapagic, 2013). The support infrastructure, through various funds, from European, local authorities, charity or from private funders, play a big role in stimulating the growth of these initiatives. Usually, there are three types of financial mechanisms that foster the deployment of renewable energy: the feed in tariffs, green certificates and tenders. It can also be through tax incentives or grants. Subsidy programs are found to be crucial for the development of renewable initiatives, as sometimes the projects would not even have started without the existence of external funding (EREC, n.d.).

However, many times getting access to funding can be a complex process (Walker, 2007**,** p.6). Therefore it is important to have the right tools to attract this funding, meaning a flexible organization and the necessary skilled people that attract the funding. Also, it is often difficult to secure private finance, since the performance of the system is difficult to assess (Sozer, Elnimeiri, 2003) or it is difficult to forecast revenue streams with accuracy (Weerawardena, Mort, 2004). It can also be the case that the necessary funding is inconsistent or can stop

therefore, finding other means that reduce the dependency on external funding is seen as a step forward for the development of such initiatives (Bomberg, McEwen, 2012). Generating additional income by selling the energy produced can be a solution (Sauter & Watson, 2007).

Economic deprivation can be a driver for these initiatives, with the condition that they are aimed at local regeneration or address the need to solve a fuel poverty problem (Bomberg, McEwen, 2012;Walker, 2007).

Technology

Looking from a technological perspective, a factor that affects the development of L.R.E.I. is the accessibility to the grid (Müller, et al, 2011), since the whole energy produced or the surplus of energy needs to be exported into the market. There are many differences in the energy market across Europe and the market structure can differ from one country to the other, frequently because of historical reasons. Therefore, before developing a project, it is important to know whether the grid can support the electricity produced and whether there can be made the necessary investments to secure the connection to the grid (Rescoop 20-20-20, n.d). Sometime, because the projects are small, the building of the necessary infrastructure to support them can be considered too expensive only for this sole reason and therefore, will not be built (Neuhoff, 2005, Heiman, Solomon, 2004; Foxon, Gross, Chase, Howes, Arnal, Anderson, 2005). On the other hand, other authors argue that smaller scale projects are more advantageous since they avoid making expensive upgrades to the grid or it avoids a grid voltage overload (Walker, 2008, p.4402).

Besides this, a powerful incentive for choosing renewable energy technologies is the desire to be autonomous and disconnected from large traditional energy companies. Working in autonomous small groups can provide the liberty and the flexibility for a better and quicker organization. Moreover, being autonomous from a centralized energetic system provides the freedom to pursue the best interests of the citizens/members of the project and those interests that fit the locality the best, instead of following the interests of a big company (Rescoop 20-20-20, n.d.).

Another incentive is that through the adopted technology, there can be achieved an improved management of the local energy demands (Walker, 2008, p.4402). However, the installations need to be easy to install and to maintain. It was found that if too much maintenance is required, the technology is difficult to install or it does not add value to the property, this could be turned into barriers towards adopting the renewable energy technology (Faiers, Neame, 2006). Also, trained personnel are required since the deployment of the technology does not only depend on the availability of the technology itself, but on the available human capital as well. It has been noted that the number of trained personnel in renewable technology needs to grow, since the experience on the market with the embedded technology is already bigger and exists for a longer period of time (Painuly, 2001; Smith, Fressoli, Thomas, 2012; Willey, Hester, 2001).

Seyfang (2010) also stresses the importance of the end user in the development and diffusion of renewable energy technology, since he might accept or not the new technology. In this

sense the visibility of the technology is often put into discussion. Some see it as an incentive, since this can add to the green image that the adopters want to promote or achieve (Balcombe, Rigby, Azapagic, 2013). Others use this visibility to increase the adoption and accessibility towards renewable energy technologies (Devine-Wright, 2005). However, other authors state that the aesthetics of the renewable energy technology can be hindering, and it can often meet local opposition towards adopting the respective technologies (Sidiras, Koukios, 2004). This happens since many times the project initiators have to deal with the misperception of wind turbines that is caused by negative publicity against wind turbine projects. This critique is usually based on either the negative effects that it is said to have on the landscape or on the local environment (Rescoop, 20-20-20, n.d.).

Market and society

In terms of societal influences, it was found that an existing pro-environmental culture within the society was also found to be important in the development of these initiatives. However, it can be the case that even in an environment with low environmental awareness, a single or a group of persons can start an initiative, through which it can be further propagated (EREC, n.d.).

Moreover, it was found to be a barrier in the development of L.R.E.I., if the consumers are not informed or do not understand the externalities that the conventional energy has (Brown, 2001, Willey, Hester, 2001). However, change can be achieved incrementally with the aid of supporting institutions, by informing and helping the citizens in their projects, through local agencies, municipalities or NGOs. This can be further enhanced by the involvement of people in the actual projects, demonstrating in this way the social, economic and educational benefits (Walker, et.al., 2007). Networking and share experiences platforms or promoting positive examples and successful initiatives, can also help at spreading the existing knowledge and provide learning mechanisms that can foster the dissemination of initiatives (Hilscher, 2013; Walker, 2008; McCormick, Busch, 2014).

Also, it was found that many times it is difficult to deploy renewable energy technologies since actors from the political arena, that have either commercial or political interests (Painuly, 2001, Walker, et.al., 2007) can put pressure in favour of the old system and can try to obstruct the emergence of the new technology (Jacobsson & Johnson, 2000).

Macro issues

Looking from a macro perspective, it was found that a lot of projects are hindered by the fact that the electricity market is designed for the conventional, centralized power plants (Neuhoff, 2005; Painuly, 2001). Also certain inertia of the system in integrating only incremental technological changes (Fuchs, Arentsen, 2002) or the lack of competition in the existing energy market (Painuly, 2001) can be hindering for renewable energy developments. Therefore, the liberalization of the energy market can help in overcoming such problems (Joskow, 2008).

Highlighting the environmental benefits that come from renewable energy production is often regarded as a decisive factor in the deployment of local scale energy generation. Many of the adopters want to reduce the greenhouse gas emissions and to produce energy in an environmentally friendly way **(**Balcombe, Rigby, Azapagic, 2013). However, the fact that the costs or externalities for energy from fossil fuels are not internalized, creates an inadequate comparison between the costs of renewable energy and the costs of fossil fuels (Sonneborn, 2004). Some consider therefore that the social and environmental costs need to be internalized in the price of conventional energy (Heiman, Solomon, 2004) through for example, taxes for pollution.

Government

In terms of institutional aspects it was found throughout the literature that the development of local energy projects is fostered or hindered by the political environment in which they operate (Bomberg, McEwen, 2012). Governments can help in providing access to information and technology, building institutional capacity, developing research and creating an environment that enables investment. Therefore, through the enacted policies governments can foster or hinder these developments (Painuly, 2001; van Rooijen & van Wees, 2006).

Another prominent issue is the availability of grants and subsidies, since the high investments required for renewable energy is often seen as a limitation (Brown, 2001; Faiers, Neame, 2006). Therefore, projects are particularly advantageous not only when they can reduce energy costs with the installed technology, but also when grants are obtained in order to lower the investment costs (Walker, 2008, p.4402).

Moreover, it is important that the local authorities balance the national targets with the local needs (Loring, 2007). This can be done through the right institutional support that helps put actors together and with local organizations that promote renewable energy production (Walker, Gordon, Evans, Bob, Devine-Wright, Patrick, Hunter, Sue and Fay, Helen, 2007). Failing to put into places the necessary learning mechanisms or integrating these initiatives into long-term governmental programmes or goals can slow down or hinder the development of L.R.E.I. (Walker, 2007).

Changes in the supporting policy for renewable energy are seen as a barrier for the whole renewable energy market, and this is especially for the small organizations that are affected more heavily. Moreover, unclear or slow bureaucracy can hinder the development of L.R.E.I., since the initiators might not have the necessary expertise or capacity to deal with complex regulations concerning renewable energy projects (Rescoop 20-20-20, n.d.).

A good collaboration between the government and its citizen groups can help spreads L.R.E.I.. This is particularly important in the case of local government, which can give more attention to these types of initiatives and offer the setting that stimulates them, though for example an efficient bureaucratic procedure (Rescoop 20-20-20, n.d.).

IV. The findings

Before presenting the findings, a few facts about the renewable energy sector is given from each country. The information collected under this section is not meant to offer an exhaustive overview, but rather to give more coherence and make understandable the data collected from the empirical findings.

IV.1.Background of the countries

The Netherlands

In terms of promoting renewable energy, the main goal for the Netherlands is to increase the share of renewable energy to 14%, by 2020 and to achieve a 37% share of renewable electricity (EREC, 2011, p. 76). In order to speed up the developments, besides stimulation policies in the country, the liberalization of the green energy markets is aimed at increasing the share of renewable energy. At the local level the usage of renewable energy is promoted by local municipalities, but also through grass-root actions of the citizens. Although there are a wide variety of local renewable energy organizations in the Netherlands, the deployment of local renewable energy generation is still rather limited. Moreover, it seems that the target cannot be achieved with the current system in place, since the renewable energy in the national consumption was only 4% in 2010 (Boon, 2012, p.8)**.** There was also observed the need for more stability and certainty in the support schemes for renewable energy in the long term (EREC, 2011).

The main instrument used in the country for the promotion of renewable energy production is the SDE+ premium feed-in scheme. Also, tax exemptions and loans encourage renewable energy technology purchase (Legal sources on renewable energy, 2014).

Italy

The main objectives for Italy is to achieve the 17% total share of renewable energy target and a 26, 4% share for renewable electricity by 2020 (EREC, 2011, p.61). On the local level, local municipalities promote renewable energy production, though programmes such as the Covenant of Mayor movement. But there are also grassroots movements, where citizens collaborate and form energy cooperatives, such as REScoops type of projects (see Rescoop, 20-20-20).

In Italy, the quota system (‘Certificati Verdi’) is the main promoter of electricity generated out of renewable resources. Other main support schemes are the feed-in tariffs, which in general focuses more on photovoltaic, and the tax regulations mechanisms, which implies that photovoltaic and wind energy plants are eligible for VAT reductions (Legal sources on renewable energy, 2014).

It was found that the current legal framework for renewable energy is a mix of laws that are not always connected to the renewables. Another problematic is related to the clarity of the rules, which sometimes do not have the same meaning in different territories of the country. The grid is incapable to support the big number of requests from renewable energy projects

and this happens frequently in remote areas. Also the incentive system for renewable energy developments suffered drastic restructuring in the last two years, resulting in a cut from the excess amount of green certificates in the market. This caused uncertainties and insecurities in the renewable energy market, which hindered severely investments in this sector (EREC, 2011, p.64).

Romania

The main objective for Romania is to achieve 24% renewable energy and a 42,1 % share of renewable electricity in the national consumption (EREC, 2011, p.85).

In Romania, the main instrument for promoting renewable energy usage is the quota obligation. This is based on the green certificate trading system (Legal sources on renewable energy, 2014). This was the main instrument that helped achieve the 2020 target. The 38% target imposed by the European Commission was surpassed in 2013, when the production of electricity out of renewable energy was of 41%. However, the green certificates have caused large political disputes, as it disfavored some industries and the end consumer, as a result of the excess certificates in the market. As a result, starting 2013, the subventions have been reduced (Ionascu, 2014).

On the local level the promotion of renewable energy is done through national programs such as The "Casa Verde" (Green House) Programme, which provides financial assistance for installing solar collectors, biomass heating systems heat pumps in residential, governmental and public buildings (Casa Verde, 2014). Also, across Romania local and regional authorities are involved in the development of renewable energy resources through the Covenant of Mayors European Movement (Covenant of Mayors, 2014).

It was also found that in Romania there is a need to have a more transparent process concerning the approvals for the grid connections, while there was also noted the need to have a more reliable legal system in this respect (EREC, 2011, p.86).

IV.2. L.R.E.I. in Romania

This section gathers all the data collected with the help of the interviews. The information is organized following the structure of the interview: first, presenting the general findings and secondly, the assessment of the factors.

The findings will be categorized and analyzed from a citizen level perspective and from an institutional level perspective. Table 5 from the Appendix C shows the details about the respondents affiliated either with citizen led or institutional led initiatives.

IV.2.1.General Findings

This section presents the findings in Romania as a result of the interviews with the people affiliated with L.R.E.I. The information is gathered under clusters concerning: the number of existing initiatives, the reasons for their development, their success and decisive factors, as well as their development trend in the future and recent past. As mentioned in the beginning, there has been noted a difference between citizen and institutional led initiatives, therefore the

data gathered from the interviews is separated according to the respondent's affiliation to the respective initiatives.

The total number of respondents affiliated with citizen led initiatives in Romania was 4 and the number of respondents affiliated with institutional led initiatives was 7.

1. Number of initiatives in Romania

Citizen-led initiatives

Concerning the number of L.R.E.I. active at the moment in Romania the respondents affiliated with citizen led initiatives could not provide an answer.

The respondents also gave several reasons why these estimations could not be made. One reason was that most of the local renewable energy initiatives developed in the country are not initiated by citizens, but by the local agencies or municipalities. The citizen led initiatives that exist are in the form of small private installations, but this number cannot be estimated, since the citizens are not obliged to declare their private installments (Andronescu, 2014). Moreover, Dumitrescu (2014) also underlines that when making an estimation of the number of initiatives, it is important to make a difference between the ones that are actually useful for the citizens and the ones that are initiated by those with vested interests, who are driven only by marketing or by quick profit purposes.

Institutional-led initiatives

The respondents from the institutional level could not give an exact number to answer this question either.

One reason is that the agencies themselves have problems with identifying these initiatives, since there is no inventory at national level (Caba, 2014). Olariu (2014) roughly estimated that 60-70% of the localities existent in Romania have developed different sorts of renewable energy projects. Moreover, to find out about the number of these initiatives, different databases need to be researched since the projects of the local authorities concerning renewable energy are categorized depending on the financial aid that they are receiving (Topliceanu, 2014). For example, there is the "Covenant of Mayors" European movement, in which local authorities across Romania are involved (Rimbu, Topliceanu, 2014). In 2014, there were registered 40 Sustainable Energy Action Plans (the document that sets out the plan for achieving energy targets or for implementing measures related to CO2 reduction) out of which 23 are already approved (Rimbu, 2014). Other respondents referred to the many citizen initiatives developed through the 'Casa Verde' ('Green House') Programme. But a number could not be given since these initiatives are not categorized and a centralized system of information in this respect does not exist (Andronescu, Rata 2014).

2. Reasons for L.R.E.I. development

Citizen-led initiatives

The respondents from the citizen level motivated the developments by diverse reasons. The financial incentives are seen as the main drivers for these developments. Olariu (2014)states that the existance of European funds encouraged significantly the development of renewable energy installments. Moreover, the international pressure for sustainable development (Maruntelu, 2014), the unfeasibility of the current energetic system (Maruntelu, Dumitrescu 2014) the growing awareness for the environment protection (Comsuta, Dumitrescu, 2014) or the necessity to build sources of energy in remote or inaccessible areas (Maruntelu, 2014) were also given as reasons for development. A different perspective was offered by Dumitrescu (2014) who mentioned that a reason for developing these kinds of initiatives is the passion of those who develop research and methods in the citizen's best advantage, and not for those with vested interests.

Institutional-led initiatives

The developments at an institutional level were underpinned by financial reasons (Nicolae, Rimbu, Albu, 2014), highlighting the importance of funds for reducing technological and installments costs (Rimbu, Caba 2014). Two main aiding instruments were identified in this sense: the ''Green Certificates Scheme'' and "Casa Verde" Programme (''The Green House'') (Rata, Andronescu, Caba, 2014). Also the desire for higher quality standards was mentioned, since the development of these sorts of initiatives contribute to a cleaner environment, as well as to providing a more secure and independent energetic system (Rimbu, Magureanu, Caba, 2014).

3. Success factors for L.R.E.I. development

Citizen-led initiatives:

A high degree of citizen's involvement in the development and implementation of the initiatives was considered a success (Maruntelu, 2014). Making usage of the local energy potential is another important aspect (Maruntelu, Olariu, 2014). Moreover, it is considered even a greater success if marginal terrains, such as those affected by inundations or erosion, are used for the purpose of renewable energy installments (Olariu, 2014). Interestingly, another respondent said that the answer to success lies in more research that would bring the investments costs down. Because there are still high investments costs for implementing renewable energy technology, very few initiatives can be regarded therefore successful (Dumitrescu, 2014).

Institutional-led initiatives:

One of the respondents from the institutional level mentioned that it could be considered a success when an L.R.E.I. is integrated in a long-term strategy and vision for local development (Andronescu, 2014). Moreover, satisfying the local population through these initiatives by involving the citizens in the development process (Rimbu, Nicolae, 2014),

achieving a higher standard of living (Nicolae, Rimbu 2014), upgrading old heating systems (Caba, 2014) or lowering the energy costs (Nicolae, Rata, 2014) were also mentioned.

4. The development trend

Development trend in the recent past

Citizen-led initiatives:

At a citizen level, most of the respondents answered that the trend in recent past has been increasing (Comsuta, Maruntelu, 2014), motivated by one respondent, as a result of an easier access to information in the last decade (Dumitrescu, 2014). Interestingly two respondents stated that the number has rather stagnated as a result of the changes in the legislation (Olariu, 2014) or lack of financial instruments (Rata, 2014).

Institutional-led initiatives:

Most of the respondents answered that the trend has been increasing (Nicolae, Andronescu, Magureanu, Albu, Rimbu, Caba, Topliceanu, 2014). This was motivated by some as a result of the growing interest of municipalities to develop renewable energy projects at the local level or by the possibility to acess funds (Topliceanu, 2014).

Development trend in the recent future

Citizen-led initiatives:

Most citizen led initiatives expect to grow (Comsuta, Maruntelu, Dumitrescu, Olariu, 2014).

This growth was motivated by the support of programmes at national and local level (Olariu, 2014) or the support of European funds (Maruntelu, 2014). However, Maruntelu (2014) states that there will be differences in growth, depending on the type of renewable energy used. For example, if the number of wind energy initiatives is expected to stagnate, the number of solar energy initiatives is expected to increase. An even higher potential is seen for the biomass developments, since these developments are in an incipient stage.

Institutional-led initiatives:

Some of the respondents from the institutional level expressed that there will be an increasing trend in the development of local initiatives (Andronescu, Nicolae, Magureanu, Rimbu, Caba, 2014). One of the main reasons for a growing trend is represented by the European funds allocated for these types of projects (Andronescu, 2014) or by the international pressure for sustainable development (Rata, 2014). However, other two respondents had a different opinion, stating that there will be a period of stagnation (Albu, Nicolae, Topliceanu, 2014).

5. Decisive factors for the development of l.r.e.i.

Citizen-led initiatives:

Some respondents stated that a decisive factor for the diffusion of these initiatives is the external pressure caused by European and national energy policies targeted at using alternative sources of energy or environment protection (Maruntelu, Comsuta, 2014). Moreover, the development of agricultural or construction projects, that integrate renewable energy installments, helped develop these sorts of initiatives (Olariu, 2014).

Institutional-led initiatives:

The respondents mentioned the European and the national energy policy requirements (Albu, 2014). Accessing external funds or governmental support schemes, such as "Casa Verde" ("Green House") Programme (Rata, Andronescu, Caba, Topliceanu, 2014), together with achieving cost reductions for the installments or the energy used (Rimbu, Nicolae, Magureanu, 2014) were decisive factors for the development of the existing initiatives.

IV.2.2.Assessment of the factors

This section presents the findings concerning the factors submitted for evaluation in the interviews. For an easier evaluation, these are clustered into six themes: organizational characteristics, technological characteristics, economic characteristics, market and society, macro developments and government.

In order to see if there are differences, similarities or exceptions that need to be taken into consideration when assessing these factors, the separation between the respondents affiliated with citizen and institutional led initiative is maintained for this part as well.

Organizational characteristics:

Detailed analysis of the responses from the citizen level:

Most of the respondents agreed that having a shared ownership among citizens, having the citizen's involvement and a fair distribution of benefits among the citizens has a positive impact upon the development of L.R.E.I. However, since a large size of the organization was regarded by half of the respondents to have a negative impact and the other half had an impartial opinion about its influence, this factor was rejected. Moreover, although most of the respondents were rather indifferent towards having a sound business plan, one respondent regarded this as a relevant factor.

Detailed analysis of the responses from an institutional level:

Most of the respondents at institutional level evaluated that having a shared ownership among citizens, having the citizen's involvement, a fair distribution of benefits among citizens and developing strong interactions between locals as irrelevant for the development of L.R.E.I. However, most of the respondents agreed that having a sound business plan has a positive impact upon the L.R.E.I. developments. Despite that having a large sized organization

received opposite opinions, the respondents inclined more towards viewing this factor as influencing positively the development of L.R.E.I. .

Economic characteristics:

Detailed analysis of the responses from the citizen level:

The data collected from the citizen led respondents shows that having low start-up costs for the development of L.R.E.I. did not have a high relevance as expected, since more than half of the respondents had an indifferent view upon this factor. Furthermore, half of the respondents are also indifferent towards having a short payback time, while the other half confirms this factor to have a positive influence. Also the respondents confirm the positive influence of grants and subsidies. Interestingly, having non-monetary gains, such as a green image, were rejected as positively influencing these developments. Moreover, most respondents also rejected having a strong regional economy.

Detailed analysis of the responses from an institutional level:

Having low start-up costs, a short payback time and an autonomy from financial institutions was found to have a positive impact upon the development of L.R.E.I. by the rough majority of the respondents. However, it needs to be mentioned that having a short payback time and low startup costs were regarded as irrelevant by one respondent, who stated that many times there are no cost benefit analysis before developing a projects by the local municipalities, and most of the times these projects would not survive without external finance (Magureanu, 2014). Interestingly, the strong dependency to external financing can be further supported by the fact that all the respondents unanimously agreed upon the importance of grants and subsidies. Remarkably, all respondents confirmed also having the support of a strong regional economy unanimously.

Market and society characteristics:

Detailed analysis of the responses from the citizen level:

Most of the respondents agreed that having the support of external experts, of similar organizations, the involvement of suppliers and installers and a pro-environmental culture were factors assessed to positively influence the development of L.R.E.I. However, the existence of competitors and of organizations that encourage the development of renewable energy usage were rejected as factors that influence positively the development of L.R.E.I..

Detailed analysis of the responses from an institutional level:

All the factors presented under this cluster: the support and advice from external experts, of organizations that encourage the renewable energy usage, of similar organizations but also having the involvement of suppliers and pro-environmental culture, were all found to positively influence the L.R.E.I. developments from an institutional level perspective.

Technological characteristics:

Detailed analysis of the responses from the citizen level:

For the respondents at citizen level, having reliable energy equipment and being autonomous from a large-scale energy system proved to be the only relevant factors.

Detailed analysis of the responses from an institutional level:

Interestingly, most of the respondents at institutional level confirmed all the factors under this cluster: being independent from the large scale energetic system, the esthetics of the renewable energy the reliability of the renewable energy equipment, the existence of smart meters and the influence of the geographical characteristics upon in the region upon the type of renewable energy technology used.

Macro characteristics:

Detailed analysis of the responses from the citizen level:

Having a high environmental awareness within society and a fluctuation of energy prices were confirmed as factors that influence positively the development of L.R.E.I.. However, most respondents rejected the existences of a non-differential tax system and of a centralized energy system.

Detailed analysis of the responses from an institutional level:

Most of the respondents agreed that the existence of a centralized energy system, the fluctuation of energy prices and a high environmental awareness, influence positively the L.R.E.I. developments. Also even though there are a significant number of respondents that find a non-differential tax system rather irrelevant, the majority of the answers incline to confirm this factor as having a positive influence.

Governmental characteristics:

Detailed analysis of the responses from the citizen level:

The majority of respondents agreed that having a stable policy and an efficient bureaucratic procedure have a positive impact upon the development of L.R.E.I. Also having a good disseminating knowledge about renewable energy seems to be an important factor, since all the respondents unanimously agree upon its relevance. When it comes to assess the influence of the corruption in the country, this factor is rejected. However it is interesting that the opinion over its influence is dived in two: one part considers this as a hindering factor, while the other side considers this element a fostering one.

Detailed analysis of the responses from an institutional level:

Having a stable and consistent policy, a good dissemination of knowledge about renewable energy and an efficient bureaucratic procedure were all regarded as relevant factors by the

majority of respondents. Looking at the corruption level in the country, the rough majority agreed that it has a negative influence upon the development of L.R.E.I..

Table 1 provides an overview over the assessment of the factors influencing the L.R.E.I. developments in Romania.

Table 1. Assessment of the factors: Romania

Factors/	**Citizen level**			**Institutional level**			**All initiatives**	
Number of respondents	‘’-‘’	‘’**0**’’	‘’**+**’’	‘’-‘’	‘’**0**’’	‘’+’’	**Rejected**	**Confirmed**
Organizational characteristics								
Sharing the ownership among citizens	1	1	2	5	2		X	
Involving the citizens	1		3	3	2	2	X	
Benefits distribution among the citizens	1		3	4	1	2	X	
A large size of the organization	2	2		3		4	X	
Strong interactions between local citizens	1	1	2	5	1	1	X	
Sound business plan		3	1		2	5		X
Economic characteristics								
Low start-up costs		3	1	1	2	4		X
Short payback		2	2	1	1	5		X

time								
Non-monetary benefits	2		2	2	2	3		X
Autonomy from financial institutions	1	1	2	2	1	4		X
Grants and subsidies		2	2			7		X
Strong regional economy	2	2				7		X
Market and society characteristics:								
Support and advice from external experts	1	1	2	1		6		X
Similar organizations	1		3		3	4		X
Existence of competitors	2		2		4	3		X
The existence of organizations that encourage r .e. usage	1	2	1		1	6		X
Involving the suppliers and installers		1	3	1		6		X
A pro-environmental culture		1	3	1	1	5		X
Technological characteristics:								
Reliable renewable energy equipment		1	3	2	1	4		X

Esthetics and visibility of the renewable energy	1	2	1	1	2	4		X
Technical adaptations	1	2	1	1	1	5		X
Autonomous from the large scale energy system			4	1		6		X
Smart meters	2		2	1		4		X
Geography of the region	2		2		1	6		X
Macro characteristics:								
A centralized energy system	2	2		2	1	4	O	
Non-differential taxes	2	1	N.a.	3		4	X	
A high environmental awareness	1		3	1	2	4		X
Fluctuating energy prices			3 N.a.	2	1	4		X
Governmental characteristics:								
Stable and consistent policy		1	3	1		6		X
A good dissemination of knowledge about r.e			4	1	1	5		X
An efficient bureaucratic		2	2	1		6		X

procedure								
Corruption in the country	2		2	5	1	1	X	

*‘’O’’= the general score is o, neither rejected, nor confirmed, but there are differences in the respondent’s opinion.; n.a.=no answer; one of the respondents did not provide an assessment of the whole factors submitted for evaluation

IV.2.3. Conclusions for the findings in Romania

Although full overview over the exiting number of initiatives was not possible, as the respondents could not give an answer to this question, four citizens led and seven institutional led initiatives were assessed. The economic aspects were most relevant, represented mostly by the access to funding or the achievement of reducing the energy costs. It was also found that the initiatives are considered successful if, through these developments, the citizens are involved, the local energy is used or the costs for energy are reduced. Asking about the development trend of L.R.E.I. in the recent past, differences in opinion were found. While most of the respondents stated that there has been an increasing trend for these developments,there were also respondents that stated that it rather stagnated. Also, looking at the forecasts made by the respondents, most of them stated that these numbers will increase. However, what needs to be mentioned is that many of the respondents corelated the trend with the EU, national or local funding available for L.R.E.I. developments. Moreover, although diverse reasons were given, many of the respondents mentioned that the existence of external funding and the cost reductions for the energy were found to be also major decisive factors for both types of initiatives.

Differences between the two types of initiatives:

For the citizen led initiatives some organizational aspects are more important than for the institutional led initiatives. For citizen led initiatives developing strong interactions between citizens, having the citizen’s involvement or sharing the benefits and the ownership among the citizens are important, but not relevant at an institutional level. Another difference was noted in terms of the size of the organization. Since at a citizen level, having a large sized organization can be hindering, for the ones at institutional level this proved to be rather supportive.

For the respondents at institutional level gaining non-monetary benefits such as a green image proved to be influencing positively the development of L.R.E.I., while this was rejected by the respondents at citizen level. Also, if for the respondents at institutional level the support of a strong regional economy received a unanimous agreement, the respondents at citizen level assessed this as irrelevant.

While all the technology associated factors were confirmed to have a positive influence by most of the respondents at the institutional level, for the respondents at citizen level only two factors were found relevant: having a reliable renewable energy equipment and the fluctuation of the energy prices.

Looking from a macro perspective, for the respondents at citizen level the existence of a non-differential tax system and of a centralized energy system was considered irrelevant, while for those at institutional level these aspects were relevant.

Similarities between the two types of initiatives:

Looking at the organizational aspects, although some respondents from the citizen level were rather indifferent towards the importance of a sound business plan, this element proved to be the only common organizational factor for both types of initiatives.

From an economic perspective, most of the respondents at both institutional and citizen level, confirmed that being independent from financial institutions, having low startup costs and a short payback time was influencing positively the development of L.R.E.I..

Analysing the governmental factors, most of the respondents agreed that having a stable policy, a good dissemination of knowledge about renewable energy usage and an efficient bureaucratic procedure are important factors that positively affect the development of L.R.E.I..

To conclude, looking at the assessment of the factors influencing the developments at *citizen level* two priorities were noticed: *being autonomous* from the centralized energetic system and *having a good dissemination of knowledge* regarding the renewable energy used. While at an *institutional level*, having the *support of grants and subsidies* was found to be a priority.

IV. 3. L.R.E.I. in Italy

IV.3.1.General findings

This section presents the findings in Italy as a result of the interviews with the people affiliated with L.R.E.I.. The information is gather under clusters concerning: the number of existing initiatives, the reasons for their development, their success and decisive factors, as well as their development trend in the future and recent past. As mentioned in the beginning, there has been noted a difference between citizen and institutional led initiatives, therefore the data gathered from the interviews is separated according to the respondent's affiliation to the respective initiatives.

The total number of respondents affiliated with citizen led initiatives in Italy was 5 and the number of respondents affiliated with institutional led initiatives was 4.

1. Number of initiatives in Italy

Citizen-led initiatives:

Most of the respondents could not provide the number of the existing active L.R.E.I. in Italy. However, the Rescoop types of initiatives are closely monitored and an exact number was given: 85(Zanoni, 2014).

Institutional-led initiatives:

Most of the interviewed experts could not give an exact number of the initiatives (Di Pietro, Di Mario, Stancari, 2014). However, one of the respondents was able to approximate the number at a local level, approximately 10 in the region of Mantova (Stancari, 2014) or have focused on giving more specific examples from the local level, such as Rivoli Veronese and Retenergie, from Modena region (Avella, 2014).

2. Reasons for development

Citizen-led initiatives:

Some of the respondents motivated that the NGOs or the local associations contributed to the development of these initiatives. Many times these initiatives are also developed with the help of specialized banks, such as the National Ethic Bank (Banca Etica, see www.bancaetica.it), that give special loans. Many times there are collaborations between these banks and NGOs, (for example, one NGO is''Legambiente'') which work together in order to be bring attractive financial solutions (Da Via, 2014).

Another respondent reasoned the development of these types of initiatives as a result of testing out new ideas and different models of organization. One such model is the cooperative model for energy production, the REScoop. One main reason for opting for a cooperative model at the local level is an economic one. It represents a feasible method for those who cannot afford to make an investment on their own. This form of organization lowers upfront costs, since the initial investment is generally low and most of the work is realized with the help of volunteers. Also in this manner, the dependency on external funding is avoided and a strong resilience to the outside environment is built. For example, loans are needed only when there are more 'professional' projects to invest in or in the case where a project needs more funding for scaling up. Moreover, this type of organization allows having a democratic approach to the production and distribution of energy. Members can actively participate in the process, sharing the responsibility in this way (Zanoni, 2014).

Other respondents motivate the development of L.R.E.I. on the fact that the local community becomes more solid, people can develop trust, communicating is easier and the process is, therefore, more effective. For example, Battaglia (2014) clearly states that "Collective participation initiatives are possible only where the citizens trust their neighbor and people know each other. For these reasons the local scale is perfect.".

The availability and potential of local resources were also important motives. Moreover, it is important that these resources can be controlled and distributed at a local level (Passariello, 2014). The local processes are also developed aiming towards the improvement of market conditions in terms of supply and services, while it also helps with the creation of green jobs (Da Via, 2014). Environmental and ethical reasons are also taken into consideration, since the energy can be produced without harming the environment (Da Via, Di Mario, Zanoni, Zanchini, 2014).

Institutional-led initiatives:

The interviewed people affiliated with institutional initiatives, revealed multiple reasons for the L.R.E.I. development. The help of the local agencies in becoming independent from the centralized energetic system or fossil fuels (Stancari, 2014) was mentioned.

Also, the support of policy mechanisms through feed-in tariffs contributed to the development of these initiatives (Avella, 2014). Mutual trust was another highlighted reason, since previous collaboration often leads to the development of these kinds of initiatives (Di Pietro, Di Mario, 2014). The availability and potential of local resources were also important factors (di Mario, 2014)**.**

3. Success elements

Citizen-led initiatives:

Some of the successful elements identified were in relation to financial aspects, such as the achievement of reducing energy costs (Da Via, 2014) or avoiding big upfront costs, as in the case of Rescoops (Zanoni, 2014). Other successful elements were represented by the involvement of local people (Zanchini, 2014) or by the involvement of local municipalities (da Via, 2014). Moreover, achieving a strong community feeling (Battaglia, 2014), helping the community (Zanchini, 2014) sharing the ownership among the citizens, and achieving an open and democratic participation (Zanoni, 2014) were successful elements identified by the consulted people. Other success elements were represented by the fact that these initiatives not only create jobs, but also protect the environment at the same time (Zanchini, DaVia, 2014). Moreover, making an initiative grow or consolidate its know-how was also regarded as successful outcomes. In this respect, Retenergie was given as a successful example, since the initiative has managed to differentiate its activities and started selling the energy to private users (Avella, 2014).

Institutional-led initiatives:

Achieving an economic feasible initiative and an effective communication at local level was considered as successful elements (Stancari, 2014). The involvement of the local municipalities (di Pietro, di Mario, Stancari, 2014) was considered another relevant factor.

Achieving cost reductions for the citizens were also seen as successful elements for these initiatives. A given example is “Operatione fotovoltaico” promoted by the local authorities which collects the demands from citizens and searches or negotiates for the best market prices (Da Via, 2014).

Offering support and advice in order to make use of national incentives is also seen as a success factor. An example in this sense is the ”Fotovoltiamoci” initiative, developed by AGIRE, the local energy agency in Mantova region. This was initiated in order to provide feasibility studies for the applicants and to make use of national incentives for installing PV panels, such as “Conto Energia”(Stancari, 2014).

Achieving a shared ownership or offering the opportunity to buy bonds was also given as a success story. This is represented by Rivoli Veronese initiative (Avella, 2014).

4. Development trend

Development trend in the recent past

Citizen-led initiatives:

The respondents had slightly different opinions concerning the growing trend in the recent past concerning these initiatives. After registering an initial overall fast growth, the trend plummeted because of the instability of the governmental RES support schemes (DaVia, 2014) or because the supporting grants and subsidies stopped (Zanchini, 2014). Another respondent stated that while the photovoltaic investments increased, the wind energy initiatives stagnated (Passariello, 2014).

Institutional-led initiatives:

Here, the respondents made a difference between the national and local level, depending on the government attention to this issue. For example, Stancari (2014) states that the number has been decreasing in the recent past, since the agency shifted its attention to more profit seeking initiatives; therefore the citizen's initiative growth number was stagnating (Stancari, 2014). However, other interviewed experts stated that there has been increasing even despite the economic crisis (Di Pietro, Di Mario, 2014).

Development trend in the future

Citizen-led initiatives:

Most of the respondents forecast an increase in the number of initiatives (Zanchini, Zanoni, Da Via, 2014). Different reasons were given. The importance of ethical involvement is expected to keep the trend growing, but this will also depend on the consistency of the national policies or other external factors (Da Via, 2014). Zanchini (2014) sees that the local support for finding grants and subsidies will help increase the number of initiatives. Battaglia (2014) also sees an increasing trend since the micro-generation and smart grids will slowly replace the current energy market. This will be further supported, since the "sharing and collaborative economy is booming" and the "social entrepreneurship is gaining momentum", which are predicted to revolutionize the energetic system (Zanoni, 2014). Another respondent sees differences in growth, depending on the type of renewable energy used. Passariello (2014) predicts that the usage of PV systems will stagnate, while the wind energy initiatives are expected to increase.

Institutional-led initiatives:

Some of the respondents were reserved from making a forecast (Avella, 2014), while others stated that there would be an increase in the number of initiatives (Stancari, Di Pietro, Di Mario 2014). Di Pietro (2014) states that the easy access to information, with the help of the

Internet, helps reduce the gap between people, and thus builds more effective communication necessary for these developments.

5. Decisive factors for diffusion

Citizen-led initiatives:

Among the respondents several factors were found important for the development of these initiatives. The existence of funding and the aid of mission-oriented banks that offer loans for social or environmental investments are supportive for these developments (Da Via, 2014). The increasing price of energy (Battaglia, Passariello, 2014) combined with the desire to be independent from fossil fuels was another decisive factor mentioned (Battaglia, 2014). Otherwise, Zanchini (2014) stressed that gaining access to information about the projects, building transparency and openness in the process were also decisive factors.

Institutional- led initiatives:

An important factor that was regarded as a strong incentive for the development of the initiatives was the presence of a stable law frame (Stancari, 2014). Moreover, developing an effective communication, having a good knowledge of the stakeholder's needs and being aware of the environmental problems, were factors stressed as crucial (Di Mario, Stancari, 2014).

The help of the different catalyzers such as NGOs or associations were considered strong supporters for the development of these initiatives (Avella, 2014). The community spirit (Di Pietro, Di Mario, 2014), the local knowledge of the territory and the interest for continuous local improvement through projects were also presented as stringent factors upon which these developments are built (Di Pietro, 2014).

IV.3.2. Assessment of the factors

This section presents the findings concerning the factors submitted for evaluation in the interviews. For an easier evaluation, these are clustered into six themes: organizational characteristics, technological characteristics, economic characteristics, market and society, macro developments and government.

In order to see if there are differences, similarities or exceptions that need to be taken into consideration when assessing these factors, the separation between the respondents affiliated with citizen and institutional led initiative is maintained for this part as well.

Organizational characteristics:

Detailed analysis of the responses from the citizen level:

Most of the respondents confirmed all the factors presented under this section: having a shared ownership among citizens, having the citizen's involvement, a fair distribution of benefits among the citizens, a large sized of the organization, developing strong interactions between local citizens and sound business plan.

Detailed analysis of the responses from the institutional level:

With the exception of a large sized organization, most of the respondents confirmed all of the factors under this section.

Economic characteristics:

Detailed analysis of the responses from the citizen level:

Roughly all the respondents agreed upon the positive influence represented by a short payback time, by grants and subsidies and by non-monetary benefits such as a green image. Obviously having low start-up costs was found to have a positive impact on the development of L.R.E.I. by all of the respondents. However, the opinion over the independence from financial institutions or influence over a strong regional economy diverged considerably therefore these factors are rejected.

Detailed analysis of the responses from the institutional level:

All the respondents from the institutional level unanimously agreed on the fact that having low start-up costs is a factor with a positive impact. This demonstrated clearly its high relevance for these sorts of developments. Also, looking at the other factors: achieving a short payback time, being autonomous from financial institutions, gaining non-monetary benefits or having the support of grants and subsidies, were considered to have a positive influence by most respondents. Looking at the influence of a strong regional economy, the opinions diverge significantly therefore this factor was rejected.

Market and society:

Detailed analysis of the responses from the citizen level:

Most of the respondents agree that: having the support of similar organization, of external experts, of organizations that encourage renewable energy usage and the involvement of suppliers and installers has a positive influence upon the L.R.E.I. developments. Having a pro-environmental culture clearly shows its significance as a positive factor, since all the respondents unanimously agreed upon it. However, the presence of competitors was rejected from having a positive influence upon the L.R.E.I. developments.

Detailed analysis of the responses from the institutional level:

With the exception of one factor, the existence of competitors, the rough majority of the respondents confirmed all the factors as having a positive influence. Moreover, there was a unanimous agreement upon the importance of having a pro-environmental culture within society.

Technological characteristics:

Detailed analysis of the responses from the citizen level:

Most respondents confirmed all the factors presented under this section to have a positive influence. Moreover, having reliable renewable energy equipment was confirmed to have a positive influence unanimously, by all respondents.

Detailed analysis of the responses from the institutional level:

Except the independence from a large-scale energy system, which was rejected, all the factors were confirmed to have a positive influence upon the L.R.E.I. developments. Moreover, all respondents confirmed having reliable renewable energy equipment unanimously.

Macro issues:

Detailed analysis of the responses from the citizen level:

With one exception, all the factors presented under this section were rejected from influencing positively the development of L.R.E.I. .However, all the respondents unanimously agreed that having a high environmental awareness within society is relevant.

Detailed analysis of the responses from the institutional level:

Also at the institutional level, with one exception, all the factors presented under this section were rejected. The rough majority of respondents confirmed having a high environmental awareness within society.

Governmental characteristics:

Detailed analysis of the responses from the citizen level:

All respondents wish to have a stable and consistent policy concerning the renewable energy, a good dissemination of knowledge about renewable energy and an efficient bureaucratic procedure. The answers were divided however, when the corruption aspect was put into discussion. While two respondent considered this factor to have a negative impact, interestingly other two considered it to have a positive impact.

Detailed analysis of the responses from the institutional level:

Also, at the institutional level, all the factors were found to positively influence the developments. All the respondents agreed unanimously upon the positive influence of a stable and consistent policy, of a good dissemination of knowledge about renewable energy and of an efficient bureaucratic procedure. The respondents had divergent views upon the data gathered on the corruption's influence upon these developments, and the data was not sufficient to draw any conclusion of whether it is a fostering or a hindering factor.

For an easier overview, the following table summarizes the assessment of the factors.

Table 2. Assessment of the factors: Italy

Factor /Number of respondents	**Citizen level**			**Institutional level**			**All initiatives**	
	‘’-‘’	**‘’0’’**	**‘’+’’**	**‘’-‘’**	**‘’0’’**	**‘’+’’**	**Rejected**	**Confirmed**
Organizational characteristics :								
Sharing the ownership among citizens		1	4		1	3		X
Involving the citizens			5			4		X
Benefits distribution among the citizens		1	4			4		X
A large size of the organization	2		3	3		1	X	
Strong interactions between local citizens			5	1	1	2		X
Sound business plan		1	4		1	3		X
Economic characteristics:								
Low start-up costs			5			4		X
Short payback time	1	1	3	1	1	2		X
Non-monetary benefits	1		4		2	2		X
Autonomy from financial institutions	1	3	1		3	1		X

Grants and subsidies		2	3	1	1	2		X
Strong regional economy	2	1	2	1	1	1	O	
Market and society characteristics:								
Support and advice from external experts	1	3	1		2	2		X
Similar organizations		3	2		1	3		X
Existence of competitors	2	2	1	1	2		X	
The existence of organizations that encourage r .e. usage	1		4		1	3 n.a.		X
Involving the suppliers and installers	1	1	3		1	3		X
A pro-environmental culture			5			4		X
Technological characteristics:								
Reliable renewable energy equipment			5			4		X
Esthetics and visibility of the r.e.		1	4	2	1	1	X	
Technical adaptations		1	4		1	2		X
Autonomous	1		4	2	1	1	X	

from the large scale energy system								
Smart meters		1	4	1		3		X
Geography of the region	1		4		1	2		X
Macro characteristics:								
A centralized energy system	3	1	1	2		1 n.a.	X	
Non-differential taxes	1	4		1	1	1 n.a.	O	
A high environmental awareness			5	1	1	2		X
Fluctuating energy prices	3	1	1	3		1	X	
Governmental characteristics:								
Stable and consistent policy			4			5		X
A good dissemination of knowledge about r.e			4			5		X
An efficient bureaucratic procedure			4			5		X
Corruption in the country	1	1	1	2	1	2	O	

*n.a.=no answer

IV.3.3 Conclusions for the findings in Italy

Although a full overview over the existing number of initiatives was not possible, as the respondents could not give an answer to this question, four institutional led and five citizen led initiatives were interviewed. However, since there is a clear monitoring for a particular type of initiative, the REScoop, the number was found to be 85.

The help of external parties such as NGOs, associations or energy agencies were found important in developing L.R.E.I.. Moreover, here not only the economic aspects of the project are important, but also the citizen's involvement in the process. The fact that the citizens can participate directly in the governance of these initiatives, while developing trust and cohesion, are also important catalysts.

Concerning the development trend of these initiatives, although differences in opinion and perspectives were noted, the common elements found to have a direct impact upon the development trend, were the availability of the funding and the governmental supporting programmes. Moreover, the existence of funding, of mission orientated banks and achieving costs reductions for the energy were mentioned as decisive for the development of L.R.E.I..

Differences between the two types of initiatives:

Interestingly, it was found that the support and advice from external experts is a relevant factor only for the respondents at institutional level.

Looking from a macro perspective, it was found that for the institutional led respondents the existence of a centralized energy system, the existence of non-differential taxes and the fluctuation of energy prices are relevant factors, while for the respondents at citizen level this was not the case.

Similarities between the two types of initiatives:

Concerning the organizational characteristics a shared ownership among citizens, having the citizen involvement and a fair distribution of benefits among citizens are relevant factors for both types of initiatives.

Looking at the economic factors, the respondents from both types of initiatives, rejected that a strong regional economy could be supportive for the development of L.R.E.I. Moreover, all respondents agreed that having low start-up costs, a short payback time, gaining non-monetary benefits such as a green image, and having the support of grants and subsidies, are all positively influencing the development of L.R.E.I. .

Analyzing the societal factors that could affect the development of L.R.E.I., both types of initiatives rejected that the existence of competitors could be a fostering factor for the development of L.R.E.I.. Besides this, all the respondents agreed that the existence of similar organizations, of organizations that encourage renewable energy usage, having a pro-environmental culture and the involvement of suppliers and installers in the development process, are found to be relevant factors.

In terms of technological factors, all the respondents agreed that: having a reliable renewable energy equipment, being able to make technical adaptations, being autonomous from the large scale energy system, having smart meters and gaining visibility through the technology used, are found to positively influence the development of L.R.E.I..

Moreover, looking from a macro level perspective, it was found that the only relevant factor for both types of initiatives is having a high environmental awareness within the society.

All the respondents agreed that governmental aspects such as a stable policy, an efficient bureaucratic procedure and a good dissemination of knowledge, are all factors found to positively influence the development of L.R.E.I..

To conclude, it was found that for *both types of initiatives*, it is a priority to have the *citizens' involvement, low startup costs, a pro-environmental culture and the support of reliable energy equipment*. Also, looking at the governmental aspect, all the respondents unanimously agreed that a *stable policy, a good dissemination of knowledge and an efficient bureaucratic procedure* influence positively the development of L.R.E.I.. Moreover, at a *citizen level* it was found out that having *strong interactions among citizens* is a priority.

V. Conclusion

For an easier comparison and overview, the table below gathers all the findings from the three countries. The findings concerning the Dutch context are extracted from Boon's (2012) work for assessing the hindering and fostering factors for the local renewable energy organizations in the Netherlands.

Table 3. Summary of the factors in all three countries.

Factors	**Romania**		**Italy**		**The Netherlands**	
	-	+	-	+	-	+
Organizational characteristics :						
Shared ownership among citizens	X			X		X
Citizens involvement	X			X		X
Distribution of the benefits among citizens	X			X		X
A large size of	X		X		X	

the organization						
Strong interactions between local citizens	X			X	X	
Sound business plan		X		X	X	
Economic characteristics:						
Low start-up costs		X		X		X
Short payback time		X		X		X
Non-monetary benefits such as ”green image”		X		X		X
The independence from financial institutions		X		X	X	
Grants and subsidies		X		X	X	
Strong regional economy		X	O		-	
Market and society characteristics:						
Support and advice from external experts		X		X		X
Existence of similar organizations		X		X		X
Existence of competitors		X	X		X	
Existence of organizations		X		X		X

that encourage renewable energy usage						
Involvement of suppliers and installers		X		X	X	
A pro-environmental culture		X		X	X	
Technological characteristics:						
Reliable renewable energy equipment		X		X		X
The esthetics and visibility of the renewable energy used		X	X			X
Technical adaptations that permit a match in supply and demand		X		X		X
Autonomy from the large scale energy system		X	X			X
Smart meters		X		X	X	
Geography of the region		X		X	-	
Macro issues:						
The existence of a centralized energy system	O		X		X	
Non-differential taxes concerning the energy used	X		X		X	

A high environmental awareness		X		X		X
Fluctuating energy prices		X	X			X
Government:						
A stable and consistent policy concerning renewable energy		X		X	X	
Dissemination of knowledge about renewable energy		X		X		X
An efficient bureaucratic procedure(eg. obtaining planning permission)		X		X	X	
Corruption in the country	X		O		-	

In terms of economic characteristics, after the factors form the three countries were distilled, it was found that having low start-up costs, a short payback time and gaining non-monetary benefits, such as ”green image”, were found to influence positively the development of L.R.E.I. in all three countries. Moreover, achieving cost reduction for the energy used or having access to funding was important aspects for development of L.R.E.I. as well.

But if for Romania the reasons for development revolve mostly around this, for the Netherlands and Italy other aspects prime. In Romania, community aspects that tackle the direct involvement of the citizens such as: a shared ownership among citizens, having the citizens’ involvement or having a fair distribution of benefits among the citizens, were found to be irrelevant. However, in the Italian and Dutch context these are important factors.

In the literature it was found that a lack of citizen involvement is often seen as a barrier for the successful deployment for these initiatives (Willey, Hester, 2001; Neuhoff, 2005). Looking from this perspective, the findings confirm this for the Romanian context. Here, the number of initiatives existing at citizen level can be considered insignificant when compared to the ones existing in the other two countries.

Another explanation can be given by the fact that citizens are more proactive in countries which have a long democratic experience or where there is a cultural and historical legacy towards collective action. In Italy and the Netherlands, there are citizen led initiatives, such as cooperative type of projects that develop or can survive after a period of time without subsidies. But in Romania there are no cooperative types of initiatives. And while for example, in the Netherlands these types of initiatives develop even despite lack of governmental support and funding (Boon, 2012), in Romania government subsidies are of great importance. Most of the initiatives would not even be developed without governmental support. An explanation for this was found in the literature and also along the interviews, where it was found that organizing these initiatives in the form of energy cooperatives (Zenoni, 2014) and sharing a community identity (Bomberg, McEwen, 2012) can reduce the dependence on external funding and build a strong resilience to the outside factors.

Looking from a macro perspective a high environmental awareness was found to be a fostering factor in all three countries. Also in the literature it was found to be a barrier in the development of L.R.E.I., if the consumers are not informed or do not understand the externalities that the conventional energy has (Brown, 2001; Willey, Hester, 2001). Moreover it was found important to have supporting institutions that disseminate the existing knowledge and provide learning mechanisms (Hilscher, 2013; Walker, 2008; McCormick, Busch, 2014) through local agencies, municipalities or NGOs. In this respect, the support and advice from external experts, the existence of similar organizations and of organizations that encourage renewable energy usage were confirmed as relevant by the interviewee from all the three contexts.

In terms of technological aspects there was also consesus among the respondets from all the three contexts regarding the support of a reliable renewable energy equipment, the possibility to make technical adaptations that permit a match in supply and demand and autonomy from the large scale energetic system. These were all relevant factors influencing positively the developments of L.R.E.I in all three countries.

In terms of governmental influences, having a good dissemination of knowledge about renewable energy was a common factor encouraging the development of L.R.E.I. in all three contexts. However, if for the Romanian and Italian context having a stable policy concerning the renewable energy usage and an efficient bureaucratic system were relevant, for the Dutch context these are irrelevant factors (Boon, 2012).

In terms of corruption, it has been observed that it is often associated with low levels of growth and discourages the domestic and foreign investments. It is observed that it lowers the policy efficiency and citizens and business try to avoid the tax system (Rose-Ackerman, 2008, p.493-497). Since the levels of corruption in the country is high in Italy and Romania, compared to the Netherlands (Index of economic freedom, 2014) the influence of corruption was also added to the assessment of the factors. However, from the collected data there was no real possibility to draw any definite conclusion over what its real influence is over these developments. This is an interesting subject to be tackled since it has been observed that the

renewable energy investments can be hindered by powerful lobby groups that can advocate against them, either out of commercial or political reasons (Painuly, 2001).

An example was given during the interviews held in Romania, where one respondent criticized the Green Certificate support mechanism, as being the result of the lobby groups for the wind and PV companies that want to use these certificates in their advantage. With the support of the Green Certificates, Romania managed to surpass the 38% target imposed by the European Commission in 2013, concerning the share of renewable energy for 2013 (Ionascu, 2014). Looking from this perspective it would seem perfect that Romania surpassed its goals in producing green energy, however looking at the real outcomes of the ‘’victory’’, it is revealed something different. The result was that the private investors took advantage of the certificates paid with public money and moreover, the citizens need to pay higher electricity bills in the end. It was also found that the companies do not even earn money from the energy sold but from the Green certificates, states Andronescu (2014). Therefore, the ones that benefit from the scheme are not the citizens but the private investors.

Therefore, the initiatives should not be a source of fragmentation or opposition within the locality where it is developed. The case where a local elite dominates the distribution of the economic benefits gained from a L.R.E.I. should be avoided (Scheyvens, 1999). If the gains are restricted only to a small group of people, this might bring controversies that would affect negatively the renewable energy developments and the L.R.E.I. developments, respectively. In this respect, it is not important to focus only on the end result, but also on the process and on the support of achieving wider societal goals (Cernea, 1987; Tendlar, 1989).

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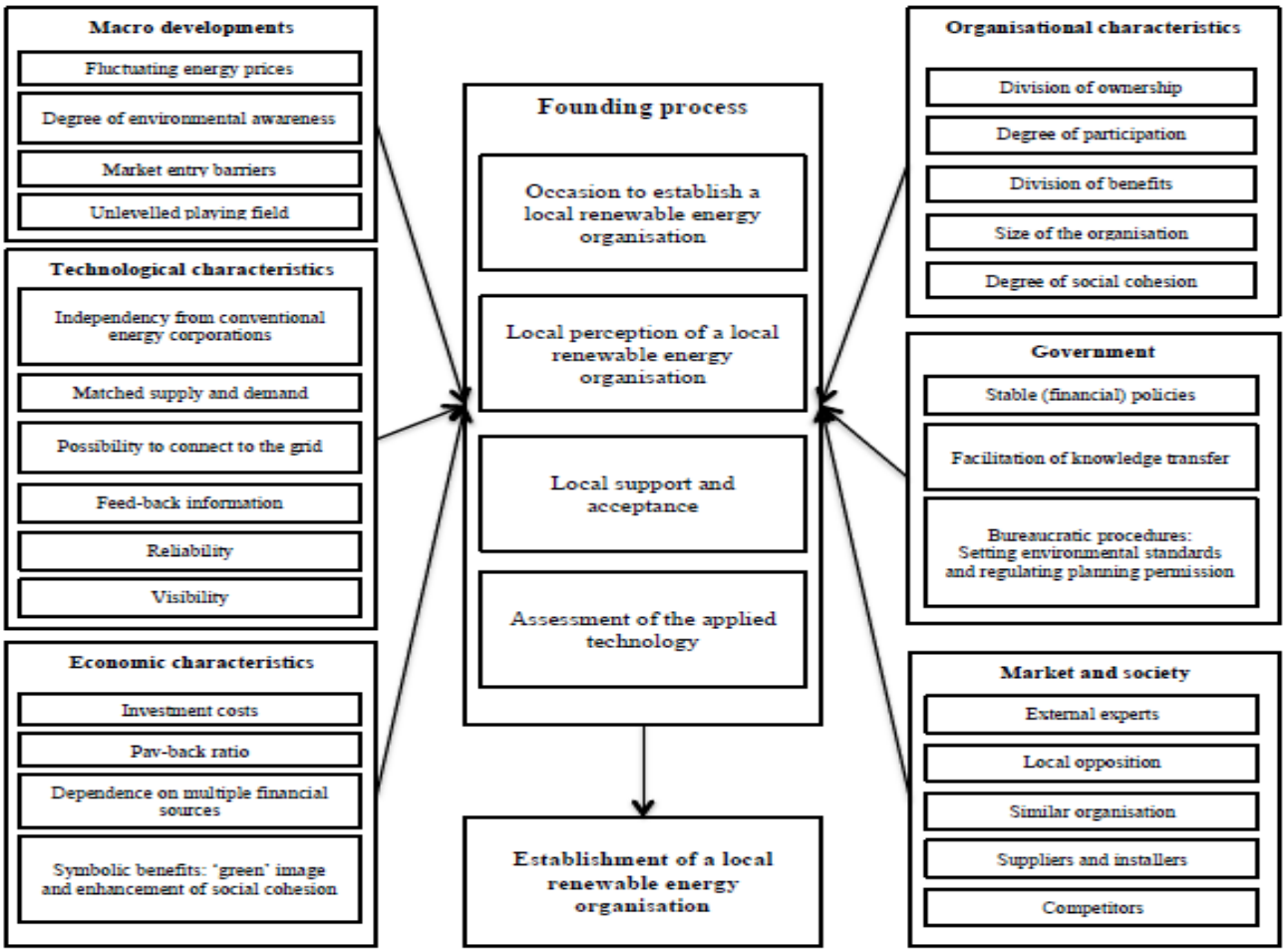
VII. Appendices:

Appendix A: Figure 1. Theoretical framework. (Boon, 2012, p.25).



Appendix B: Interview

Name:

Organization:

Country:

Date:

Introduction: *The research aims to assess what factors foster and hinder the development and dissemination of local renewable energy initiatives in the Netherlands, Romania and Italy.*

In this research local renewable energy initiatives are seen as citizen's activities aiming to provide renewable energy from different resources for different purposes.

We like to ask the following questions:

1. Could you estimate how many local renewable energy initiatives are active at the moment in your country?

2. Can you give some reasons why these initiatives were developed on a local scale?

3. What makes a local renewable energy initiative successful? Can you give examples and contact details?

4. What was the development trend (increasing, decreasing, stagnating) for these kinds of initiatives in the recent past?

5. What is the expected development trend (increasing, decreasing, stagnating) for kind of initiatives in the future?

6. What are the most decisive factors in the diffusion of these kinds of initiatives?

Below you find a checklist of factors that can foster the development of local renewable energy initiatives. Please select how supportive (X) these factors are for the development of these kind of initiatives.

Table 1. Assessment of the factors

Factors	**Not at all**	**Limited**	**Moderately supportive**	**Supportive**	**Very supportive**	**Remarks**
Organizational characteristics:						
Shared ownership among citizens						
Citizens involvement						
Distribution of the benefits among citizens						
A large size of the organization						
Strong interactions between local citizens						
Sound business plan						

Economic characteristics:						
Low start-up costs						
Short payback time						
Non monetary benefits such as "green image"						
The independence from financial institutions						
Grants and subsidies						
Strong regional economy						
Market and society:						
Support& advice from external experts						
Existence of similar organizations						
Existence of competitors						
Existence of organizations that encourage renewable energy usage						
Involvement of suppliers and installers						
A pro-environmental culture						

Technology:						
Reliable renewable energy equipment						
The esthetics and visibility of the renewable energy used						
Technical adaptations that permit a match in supply and demand						
Autonomy from the large scale energy system						
Smart meters (Measuring the production of the r.e. produced)						
Geographical characteristics of the region						
Macro issues:						
The existence of a centralized energy system						
Non-differential taxes concerning the energy used						
A high environmental awareness						
Fluctuating energy prices						
Government:						

A stable and consistent policy concerning r.e.						
Dissemination of knowledge about r.e.						
An efficient bureaucratic procedure(eg. obtaining planning permission)						
Corruption in the country						

7. Do you have any other recommendation regarding this research?

Appendix C: Table 2. Invited persons to participate in the interview in Italy

Name of person / organization	**Contact details**	**Mail**	**Reminder mail**	**Phone**	**Answers**
1. Matteo Bartolomeo REscoop-Avazi	matteo@avazi.org	x	-	-	Recommended Zenoni or Zullianello for the interview
2.Matteo Zulianello REscoop-Avazi	zulianello@avazi.org	x	-	-	-
3.Davide Zanoni REscoop-Avazi	Zanoni@avazi.org	x			x

4. Anna Meroni Desis Lab, Politecnico di Milano, Department of Design Via	anna.meroni@polimi.it tel. + 39 2399 5967	x	x		Not able to respond
5. Massimo Davia Environment Park	massimo.davia@envipark.com	x			x
6. Rudi Rienzner Mentor REscoop	rudi.rienzner@sev.bz.it	x	x		
7. Francesco di Mario ENEA(Italian National Agency for new tech, energy and sustainable development)	francesco.dimario@enea.it	x			x
8. Giacomo Passariello SICILY ENERGY (Italy) REscoop	energiaragusana@libero.it +39 338 7488397	x			x
9. Operatione fotovoltaico	info@operazionefotovoltaico.it Tel. 051 - 982799	x	x		x
10. Retenergie	*gianluca.ruggieri@uninsubria.it* info@retenergie.it no phone nb. On regions: *emiliaromagna@retenergie.it*	x	x		Not able to help

	liguria@retenergie.it *lombardia@retenergie.it* *marche@retenergie.it* *guvi@live.it* veneto@retenergie.it				
11.Sole in rete Sara Capuzzo- Vice-Presidente e Responsabile Comunicazione Gianfranco Padovan Presidente EnergoClub Francesco Pasqualin Vice Presidente, Coordinatore e Responsabile Tecnico	Tel. +39 0422 1991188(no answer) comunicazioni@energoclub.org / tel. 328 957 7599 (no answer)x2 presidente@energoclub.org / tel. 336 262 341 coordinatore@energoclub.org / tel. 348 706 6192	X X x	x	X No answer	
12.Azienda Elettrica Prato Stelvio Soc. Coop. The Italian Regulatory Authority for Electricity Gas and Water	info@autorita.energia.it tel. 02655651	X	x	X (no answer)	
13.Comunita Solare	info@comunitasolare.eu	X	x		x
14.Veneto región Moreno Da Ros	moreno.daros@regione.veneto.it/ Tel: 0039 041 2794280	x	x		
15.Parma province Giovanni Roberto (Parma Direttore di Settore)	r.parma@provincia.milano.it tel: 02.7740.3672	x			

16.Brunico village (Produces More Electricity and Heat Than It Consumes With Local Renewables)	*E-mail: info@comune.brunico.bz.it bruneck.brunico@legalmail.it* *Tel.: +39 0474 545 454*	x	x	x	
17.Legambiente Edoardo Zanchini, vice president of Legambiente and manager of energy office	*energia@legambiente.it* *legambiente@legambiente.it* tel. +39 06 862681 !!	x	x		x
18. Confcooperative, REScoop -e Antonio Perruzza	Perruzza.A@confcooperative.it 06/68000464 Or Federabitazione@confcooperative.it 06/68000464	X x	x	x x	
19.REscoop - Confederazione Cooperative Italiane	esteri@confcooperative.it Tel. +39.6.68.000.1 (Roma)(no answer) Tel: 32.2.235.28.60(Bruxelles) E-mail: bruxelles@confcooperative.it	X x	x	X No answer	
20.REscoop-Consortium of Electric Storo	cedis@cedis.info	x	x		
21. Provincia Chienti Giancarlo Moca	+39 08714084218 g.moca@provincia.chieti.it	x			

22.Consortium Electric Industrial- Stenico cooperative society	*info@ceis-stenico.it*	x	x		
23.Comune di Verona Natalie Belluzo-	urp@comune.verona.it	x	-	-	failure notice
24.Rete Nazionale Agenzie Energetiche Locali(National agency for local energy) Anea Michele Macaluso	info@renael.net tel +39 081 417831	x	x		
25.Federazione Italiana per l'uso Razionale dell'Energia Dario Di Santo	disanto@fire-italia.org	x			X not able to help, recommended websites
26.EnerGia-Da SrL President and Executive Manager Daniela Melandri	d.melandri@energiada.it	x			X not able to help
27.PeR - Parco dell'Energia Rinnovabile -Alessandro Ronca	progetti@per.umbria.it tel: +39 0744 988050 scrivi@per.umbria.it	X x	X		
27.ASEA Local agency Beneveto Agentia Sanita Provincia Benevento	info@aseaenergia.eu tel: +39 0824 2964 +39.0824.351235	x	x	No answer	

28.Agenzia per l'Energia e lo Sviluppo Sostenibile di Modena	info@aess-modena.it Tel.: +39059451207(called, received the mail) efogagnolo@aess-modena.it energiaragusana@libero.it	x	x		x
29.EnerBit Alberto Prospero	info@enerbit.it tel.: 39 015 405852	x			
30.Agenzia per la Gestione Intelligente delle Risorse Energetiche EE Projects Massimiliano MUSCI	Tel. : +39 0376 229 694 email: musci@agirenet.it email: galli@agirenet.it	X	x		
30.Energy Expert Nicola GALLI			x		
31. AGIRENET Communication Projects Simone STANCARI	email: stancari@agirenet.it				x
32.Agenzia per l'Energia e l'Ambiente della provincia di Teramo	Tel.: +39 08 61 41 01 11 Email: info@agenateramo.it (Called, received another address)	X x	x		

	dipietro@agenateramo.it				
33. Agenzia Territoriale per l'Ambiente: Barone Marco	barone@atanbo.it	x	x		
34. GSE	**UfficioStatistiche@gse.it**	x			
35. AGESS	infor@agenziaagess.com 0039054366044 (Tiziano Papi)	x			
36. Agenzia Provinciale Energia e Ambiente Trapani	Eng. Gianfranco Paladino Tel: + 39.0923.593147 apeatp@tiscali.it	x			
37. PAEA (Progetti Alternativi per l'Energia e l'Ambiente)	info@paea.it Tel. 06 92084777	x		X No answer	
38. Fondazione per Sviluppo sustenabile	Tel.: +39 06 8414815 info@susdef.it	x		X No answer	

Appendix D: Table 3. Invited persons to participate in the interview in Romania

Name of person/ organization	***Contact details***	***Mail***	***Reminder mail***	***Phone***	***Answers***
1. Aurora community	*1.Claudian Dobos* *Email:claudian@aurora-community.org-* *No nb.* *2. Andrei Iuroaia* *Email:*	*x*	*x*	-	-
		x	*x*	-	-

	iuroaia.andrei@yahoo.com *phone: +40 0742.990.175*				
3. Apusenii verzi	*Luminita Comsuta* *Email: luminitajp@yahoo.com* *Phone: +40 754 975 175*	*x*		*X*	*x*
4. Armonia Brassovia	*Flavian Dumitrescu* *Email: phlaviann@yahoo.com*	*x*		*No nb.*	*x*
5. Group Ecologic Plus	*Nicolae Maruntelu* *Email: office@ecologicplus.ro*	*x*		*x*	*x*
6. Terrarii: Terra Mileniul III: non - governmental and not-for-profit organisation	*Email: office@terramileniultrei.ro* *Phone: +40 21 3141227*	*x*			*Not able to help*
7.Energy Management Agency Sighișoara:	*Mihail Ioan MAIOR* *Email: office@ames.ro* *Phone: +40 265 771 219*	*x*	*x*		*-*
8. Passive House Association	*Phone: +40723607759* *Email: (Ede Abos) office.phar@gmail.com*	*x*			*Not able to help*
9. ENERO - Center for Promotion of Clean and	*Phone: +40 21 665 26 05* *Email: office@enero.ro*	*x*		*X no answer*	*-*

Efficient Energy in Romania	*Director Mihai Cristian TANTAREANU email: c.tantareanu@enero.ro phone: 40216652605*				
10.Black Sea Regional Centre for Renewable Energy:	*Deputy Head of EECC Department RIMBU Gimi Aurelian* *Email: rimbu@icpe-ca.ro Phone: 0040755015613*	*x*		*X*	*x*
11. SUNE *Romanian Asssociation for Renewables*	*E-mail: secretariat@sune.ro* *Phone: 0723 215 535* *Vice-Presedinte SUNE – Manuela Draghicescu, email: manuela.draghicescu@gmail.com Tel. 0723215532* *Presedinte SUNE - Prof. Nicolae Olariu e-mail: olariudcem@yahoo.fr* *+40 740 179 667*	*X* *x*		*Mailed the president and vice president again*	*x*
12. Avrig Municipality participating in the Covenant of Mayors	*Mayor Arnold G. Klingeis* *primar@primaria-avrig.ro*	*x*			*-*
13.Agency for Energy Efficiency and Renewable Energy(Ploiesti)	*0244/51.54.54* *office@ae3r-ploiesti.ro* *No mail*	*x*		*Phone call* *(pending answer)*	*-*
14.ABMEE-	*Phone:*	*X*	*X*		*x*

Agency for Energy Management and Environment protection Brasov	*+40 268 474 209* *Email: office@abmee.ro* *Primary contact: Executive Manager Camelia RATA* *email: camelia.rata@abmee.ro* *radu.gaspar@abmee.ro* *Project Manager Andreea PIUARU* *email: andreea.piuaru@abmee.ro* *Tel.: +40 268 474 209*				
15.National Institute for Research and Development in Electrical Engineering ICPE-CA	*Codescu Mirela Maria* *email: mirela.codescu@icpe-ca.ro* *phone: +40-21-3467231*	*x*	*-*	*-*	*-* *(Gave Nicolae Olariu as contact)*
16. National Institute for Research and Development in Electric Engineering (ICPE-CA)	*Sergiu Nicolae:* *sergiu.nicolaie@icpe-ca.ro*	*x*			*x*
17.The Harghita Energy Management Agency	*Phone: 40266.207.784* *Fax: 40266207785* *Email: office@spme.ro*	*x*	*x*	*no answer*	*-*
18.Polytechnic Institute Bucharest	*Lucian Toma-Profesor* *+4) 0214029344 Mobil: 0724711661*	*x*	*x*		*-*

	lucian_toma_ro@yahoo.com				
19. Polytechnic Institute Bucharest	*Mihaela Albu* *Tel.: 0040-21-4029740* *mail: mihaela.albu@upb.ro*	*x*			*x*
20.Radu Porumb Polytechnic Institute Bucharest	*Radu.porumb@yahoo.com, radu.porumb@gmail.com* *+40.722.99.28.91 / +40.21.411.34.94.*	*x*			*-*
21.National Centre for Sustainable Development	*Email: office@sdnp.ro* *Tel: (021) 201 1410/* *+40212011402*	*x*		*X Not able to help*	*-*
22.Green Energy S.A.	*Gheorghe Tripon Email: gtripon@greenenergy.ro office@greenenergy.ro* *+40 745 575 567*	*x*	*x*		*-*
23.Smart City Sibiu project	*Gal Stelian Iuliu Alexandru* *sgal07@crenerg.org* *stelian.gal@transelectrica.ro* *office@crenerg.org*	*x*	*x*		*-*
24.ROEC (Romanian Energy Centre)	*energy@roec.ro* *+40.314.328.737*	*x*	*x*		*-*
25.ARPEE(Romanian Association for Promoting	*office@arpeee.org.ro* *Telefon: +40 (0)21 322*	*x*	*x*		*-*

Energy efficiency)	*86 37*				
26.Direcţia Dezvoltare Durabilă şi Protecţia Naturii	*Telefon: 021 408 9634; ---*			*unable to help*	*-*
27.Ministry for Regional Development and Public Administration	*Telefon: 0372/ 111 409,* *Tel: 0372 111 590 info@mdrap.ro*	x	*x*	*x* *No answer*	*-*
28.Ministry for Environment and Climate Change	*E-mail: office@anpm.ro* *Telefon: 021-493.42.36; 0746-22.66.55*			*x*	*-*
29.Ministry of Economy: Energy Department	*Tel: 031.413.27.20 asistenta-oie@minind.ro*	*x*	*x*	*No answer*	*-*
30.ALEA *Local energy agency Alba County*	*Tel: 0258.813.405 / 0755.093.350-Florin Andronescu* *contact@alea.ro -*	*x*	*x*	*X phone interview*	*x*
31. Vasile Alecsandri Bacau University *Partner and coordinator Rurener Project*	*Tel. +40-234-542411,* *Conf. univ. dr. ing. Liliana Topliceanu Universitatea din Bacău Facultatea de Inginerie, Catedra de Mecatronica Calea Mărăşeşti, Nr.157 Bacău (Rurener) Tel:0234 542411 int.123 e-mail: lili@ub.ro*	*x*	*x*		*x*
32.Ecovolt Romania	*Email: info@ecovolt.ro* *Tel: 0748 210 688 /*	*x*	*x*		*-*

	0735 959 619 *0258 81 80 81*				
33.Romanian Energy Centre(CRE)	*office@crenerg.org*	*x*	*x*		*-*
34.OER Energy City Romania)	*office@oer.ro* *Leea Catincescu* *Leea.catincescu@abmee.ro* *Tel.:+40.268.474.209*	*x*		*No answer* *Answered* *pending*	*-*
35.ADR Centru *(Central Regional Development Agency*	*Ovidia Caba ovidia.caba@adrcentru.ro*	*x*	*00402588 13405*		*x*
36.Romanian Municipalities Association (AMR)	*Steluta Tatar(Projects Director)* *Amr@amr.ro*	*x*	*x*	*No phone nb.*	*-*
37. AEEPM Bucharest Energy Management Agency	*Ion Dogeanu (Director)* *Ion.dogeanu@managenergy.ro*	*x*		*No phone nb.*	*-*
38.Arad Municipality: *39.Covenant of Mayors:*	*Corneliu Neamtiu, Arad Municipality : neamtiuco@yahoo.com* *Sergiu Bunaciu, Arad Municipality: sergiubunaciu@yahoo.com*	*X*		*No phone nb.*	*-*
40. Satu Mare	*Liliana*	*x*		*Call later*	*x*

Covenant of Mayors	*Magureanu,Satu Mare Municipality, Phone: 0040261807508*			*Called again* *Phone interview*	
41. Zalau Covenant of Mayors	*Rodica Ciurte, Zalau Municipality: ciurtearodica@zalausj.ro*	*X failure notice e mail*		*No answer x2*	-
42. Alba Iulia Covenat of Mayors	*Claudia Maria Bran - Consilier clauxdia@yahoo.com Tel.: 0258 861 310*	*x*		*Call later* *No answerx2*	-
43. ALEEM Vaslui, Local energy agency	*office@energyvaslui.ro* *+40 740 009 362* *ionelpopaprimvs@yahoo.com*	*x*		*Called, than mailed*	*x*

Appendix E: Table 4. Interviewed people Italy

Name of organization	**Contact details**	**Organization details**	**Date of interview and method of answer**
1. Avazi (REscoop)	Davide Zanoni, Zanoni@avazi.org	think tank dedicated to sustainable development in Italy, carries out applied research and pilot projects, aim at managing participatory decision making processes, brings multiple actors together	24.03.2014 By mail
2. Environment Park, Science and Technology Park for Environment, Torino Italy	Massimo Davia, project manager massimo.davia@envipark.com http://www.envipark.com/	The company stimulates and develops project initiatives involving Piedmont university, technology parks and innovation centers focused on green building, RES, eco-	14.03.2014 By mail and phone

		efficient solutions.	
3. ENEA(Italian National Agency for new tech, energy and sustainable development)	Francesco Di Mario francesco.dimario@enea.it	Research and activities in support for public authorities, private actors and citizens. In the field of RES they focus on research innovation and technological transfer.	28.03.2014 By mail
4. SICILY ENERGY (Rescoop) Energia Ragusana Cooperativa Sociale	energiaragusana@libero.it Giacomo Passariello +39 338 7488397	Cooperative (listed in the Rescoop catalogue)	27.05.2014 By mail
5.Comunita Solare http://comunitasolare.eu/	Alessandro Battaglia info@comunitasolare.eu	Local solar community supporting several cities	12.04.2014 By mail
6.Legambiente	*energia@legambiente.it* *legambiente@legambiente.it* tel. +39 06 862681 !! Edoardo Zanchini, vice president of Legambiente and manager of energy office	Environmental organization, with a focus on local development, which promotes actively RES initiatives	12.06.2014 By mail
7. AESS Agenzia per l'Energia e lo Sviluppo Sostenibile di Modena	Gianluca Avella Tel.: +39059451207 efogagnolo@aess-modena.it energiaragusana@libero.it	AESS is a nonprofit organization and a member of the Energy Agency Italian network RENAEL, which gathers more than 22 local Energy Agencies.Local agency for energy audits, consultancy, planning, infomation and	26.05.2014 By mail

		implementation of all RES	
8. AGIRE Energy Management Agency AGIRE of Mantova (Agenzia per la Gestione Intelligente delle Risorse Energetiche, Mantova)	ing. Simone STANCARI email: stancari@agirenet.it	The Agency offers support to local authorities in achievement of their objectives planning for renewable energy, evaluating the energy plans, fostering collaboration between private and public	11.03.2014 By mail
9.Agenzia per l'Energia e l'Ambiente della provincia di Teramo	Danilo Di Pietro dipietro@agenateramo.it	Local energy agency offering support & assistance in the implementation of RES projects	27.05.2014 By mail

Appendix F: Table 5. Interviewed people Romania

Name of person/ organization	**Contact details**	**Organization details /type of initiative**	**Date of interview and method of answer**
1."Apusenii verzi" Association	Luminita Comsuta Email: luminitajp@yahoo.com Phone: +40 754 975 175	Citizen-led initiative, Eco-village , Community aiming at self-sustainability	10.04.2014 By mail
2. Armonia Brassovia	Flavian Dumitrescu Email: phlaviann@yahoo.com	Citizen-led initiative, Eco-village , Community aiming at self-sustainability	10.04.2014 By mail
3. Group Ecologic	Dr. Ing. Nicolae Maruntelu Email:	Citizen-led initiative; Group Ecologic Plus works with	10.04.2014

Plus	office@ecologicplus.ro	research institutions, industry and related organizations world-wide to provide training and education in both theoretical and practical aspects of renewable energy systems technology.	By phone
4.Black Sea Regional Centre for Renewable Energy/ICPE-CA: National Institute for Research and Development in Electric Engineering	Deputy Head of EECC Department RIMBU Gimi Aurelian Email: rimbu@icpe-ca.ro Phone: 0040755015613	Institutional led initiative; Platform for promoting renewable energy in the Black Sea region, including public entities private, and associate institutions with activities and interests based on renewable energy field	11.04.2014 By mail
5. SUNE	SUNE President – Prof. Nicolae Olariu e-mail: olariudcem@yahoo.fr +40 740 179 667	Citizen-led initiative; Romanian Association for Renewables Supporting the members of the association in the field of renewable energy promotion	26.05.2014 By phone
6.ABMEE	Phone: +40 268 474 209 Email: office@abmee.ro Primary contact: Executive Manager Camelia RATA email: camelia.rata@abmee.ro	Institutional led initiative; Agency for Energy Management and Environment protection Brasov	30.05.2014 By mail (incomplete, second part missing)
7. ICPE-CA: National Institute for Research and Development in Electric	Sergiu Nicolae: sergiu.nicolaie@icpe-ca.ro	Institutional led initiative; National institute and a non-profit organization focused on research and development in electrical engineering; promoting innovation, working also as a business incubator ;has strong partnerships with	15.04.2014 By mail

Engineering		central/local public administrations and NGO from Romania; was involved in three cross-border cooperation Romania-Bulgaria projects, aimed at attracting young graduates to initiate business in renewable energy.	
8. Polytechnic Institute Bucharest	Mihaela Albu Professor electric engineering department Tel.: 0040-21-4029740 mail: mihaela.albu@upb.ro	University	14.04.2014 By mail
9.ALEA Alba	Tel: 0258.813.405 / 0755.093.350-Florin Andronescu contact@alea.ro -	Institutional led initiative; The local energy agency Alba city works for the promotion of energy efficient and RES projects, by providing support to the public and private actors at local level, bets practice and information dissemination	26.05.2014 By phone
10. Rurener project	Tel. +40-234-542411, Conf. univ. dr. ing. Liliana Topliceanu (Vasile Alecsandri Bacau University) Tel:0234 542411 int.123 e-mail: lili@ub.ro	Institutional led initiative; Rurener project deals with the promotion of efficient energy and RES usage for rural communities	07.07.2014 By mail
11. "ADR Centru"	Ovidia Caba ovidia.caba@adrcentru.ro Phone: 0040358401.276	Institutional led initiative; Central Regional Development Agency	07.07.2014 By mail
12. Satu Mare Municipality	Liliana Magureanu,Satu Mare Municipality, Phone: 0040261807508	Institutional led initiative; Satu Mare Municipality, signatory of the Covenant of Mayors	26.05.2014 By phone