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# **Stakeholder analysis and national Nearly Zero Energy Building Renovation clusters**

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**Lead contractor: IVL**

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# 1 EXECUTIVE SUMMARY

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The NeZeR project promotes the implementation and smart integration of Nearly Zero Energy Building Renovation (NZEBR) measures and the deployment of Renewable Energy Sources (RES) in the European renovation market.

Work Package 5 Impact through national clusters will secure the impact of the project activities and results during and beyond its duration. This will be facilitated by creating national clusters consisting of the most relevant stakeholders that can secure the long term implementation of Nearly Zero Energy Building Renovation (NZEBR) and utilization of Renewable Energy Sources (RES).

A stakeholder analysis is a technique that can be used in order to identify stakeholders and their interest in a project or a specific question. A stakeholder analysis may help a project to identify and engage key stakeholders and thus facilitating a projects success.

The aim of the stakeholder analysis presented in this deliverable is to identify key target groups for NZEBR and deployment of RES on a national level. Representatives from the identified stakeholder organizations will be invited to participate in the national NZEBR clusters as well as in tailored educational activities in NeZeR.

For the stakeholder analysis in NeZeR an assessment in four steps was performed in each country. In the first step stakeholder groups were identified. In the second step the level of power and interest of each stakeholder group for NZEBR and RES was assessed. The rating was made on a scale from 1- 5 (1=very low, 2=low, 3=neither high nor low, 4=high, 5=very high). The partners categorized the stakeholder groups into four categories in the third step. The categories used were Key Players (KP), Meet Their Needs (MTN), Show Consideration (SC) and Least Important (LI). In the fourth step the partners summarized their stakeholder analysis.

The results show that stakeholder groups representing authorities have been identified as Key Players in all countries. Manufacturers of NZEBR and RES components are also identified as Key Players in all countries. Among the building owners, public building owners have been identified as Key Players in Sweden, Finland and in the Netherlands. In the Netherlands also private building owners was identified as Key Players. In Romania and Spain no building owners was categorized as Key Players but instead developers fell into this category. Construction companies were considered to belong to Key Players in Sweden, the Netherlands and in Spain. Networks and interest groups were considered to be Key Players in all countries.

The stakeholder analysis performed and presented in this report is the first step in the establishment of the clusters. The research organisations will together with their national partners collect contact information to people that they would like to invite. The focus will be to invite representatives from organisations belonging to the identified Key Players. In addition to that representatives from other stakeholder groups will also be invited.

## 2 INTRODUCTION

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### 2.1 Purpose and target group

#### 2.1.1 Purpose

The aim of the stakeholder analysis presented in this deliverable is to identify key target groups for Nearly Zero Energy Building Renovation (NZEBR) and deployment of Renewable Energy Sources (RES) on a national level. Representatives from the identified stakeholder organizations will be invited to participate in the national NZEBR clusters as well as in tailored educational activities in NeZeR.

#### 2.1.2 Target group

The target group of the presented results are project partners in NeZeR responsible for the establishment of the national clusters as well as actors interested in the market for NZEBR and RES in the participating countries such as decision makers and building owners, actors in the building industry and producers of technical components and solutions for NZEBR and RES.

#### 2.1.3 NeZeR project

NeZeR project promotes the implementation and smart integration of Nearly Zero Energy Building Renovation (NZEBR) measures and the deployment of Renewable Energy Sources (RES) in the European renovation market.

In each country 6 workshops/meetings will be organised with the national clusters with the following topics:

1. Collecting expectations for the NeZeR project and experiences of existing NZEBR solutions for reducing energy use and utilizing RES in residential buildings September 2014
2. Review of general guidelines for creating city action plans December 2014
3. Financing of NZEBR: business models for NZEBR and deployment of RES and relevant fiscal incentives for NZEBR March 2015
4. Environmental and social aspects of NZEBR October 2015
5. NZEBR and RES roadmaps for stakeholders April 2016
6. Experiences from the NeZeR project and further steps – in connection to the final seminars February 2017

#### 2.1.4 Stakeholder analysis

A stakeholder analysis is a technique that can be used in order to identify stakeholders and their interest in a project or a specific question. A stakeholder is defined as anybody who can effect or potentially be affected by an organization, project, development etc. Stakeholders can be either individuals or groups at any level in the society from global, national and regional down to household level (André et al, 2012). A stakeholder analysis may help a project to identify and engage key stakeholders and thus facilitating a projects success.

Different methodologies may be used when performing a stakeholder analysis. One way to categorize stakeholders is to make a division between the stakeholders that are responsible for the implementation of the policy or project and those that are affected by it (André et al, 2012). Another way to systematically classify stakeholders is described by Ballejos &

Montagna (2008) where relevant stakeholders are identified in five steps: 1) Specify stakeholder types, 2) Specify stakeholder roles, 3) Select stakeholders, 4) Associate stakeholders with roles and 5) Analyse influence and interest of different stakeholders. To summarize, the first four steps in the analysis aim at identifying stakeholders and classify them according to their role, while the fifth step is used to evaluate their importance. The stakeholder analysis used in this report builds on the methodologies by André et al. (2012) and Ballejos & Montagna (2008).

In literature previous studies can be found regarding different types and roles of stakeholders in energy efficiency projects in the building sector. For example Green Solar Cities, an EU-project, analysed stakeholders that are important for energy efficiency and use of renewable energy sources in buildings. They classified the stakeholders into institutional stakeholders (building authority, housing authority, energy companies and promoter), technological stakeholders and users (the public, owner occupants and tenants of dwellings) (Green Solar Cities, 2008). World Business Council for Sustainable Development (2008) has analysed different types of stakeholders in the building supply chain. WBCSD has identified local authorities, capital providers, developers, designers (or architects), engineers, construction companies, agents, owners and tenants as important actors.

For the stakeholder analysis in NeZeR an assessment in four steps was used based on the methodologies by André et al. (2012) and Ballejos & Montagna (2008). IVL provided instructions and a template to fill in for the project partners, see Appendices 2-3. The four steps were:

- Step 1 Identify stakeholder groups
- Step 2 Assess the level of power and interest of each stakeholder group
- Step 3 Categorize the stakeholder groups
- Step 4 Short discussion regarding the stakeholder analysis

### **1. Identify stakeholder groups**

In this first step stakeholder groups that are important for NZEBR and deployment of RES on a national level were identified. In the template provided to the project partners there were some examples of potential stakeholder groups, but the partners could modify the list as they wished. It can be useful to identify relevant stakeholders at two levels: the forerunners, which have a direct impact on future uptake of NZEBR and deployment of RES and the followers, which will later be using NZEBR and deployment of RES in everyday practice. An example of these two levels concerning the stakeholder group of architects and designers:

- Forerunners: architectural federations or big architectural firms that are setting the trend or are actively involved in developing new criteria for Nearly Zero Energy Buildings.
- Followers: all other architectural companies that work with renovation

When the partners identified the stakeholder groups, they also discussed what the needs of the identified stakeholder groups are, what are their areas of interest? What arguments and/or information will be interesting for the different stakeholder groups? In template the partners had the possibility to list on which level the stakeholder group is active (national and/or local level) and at which market the stakeholder group is active (private homeowners and/or corporate market).

### **2. Assess the level of power and interest of each stakeholder group**

Based on the list of identified stakeholders in step 1, an assessment was made of the level of power to support and their interest for NZEBR and deployment of RES for each stakeholder group. This was done by the partners that scored the level of power and level of interest from 1-5 for each stakeholder group (1=very low, 2=low, 3=neither high nor low, 4=high, 5=very high). Is the stakeholder group in general interested in NZEBR? Do they have a lot of power (direct or indirect) to promote or hinder NZEBR projects? For example, stakeholders may have a high level of power if they have legislative power, political influence are financially strong and important customers, are headed by influential spokespeople etc. In the same manner, a stakeholder might be influential but hold little or no interest in the product or issue at hand and vice versa.

### 3. Categorize the stakeholder groups

When the level of power and interest had been assessed; the stakeholder groups were prioritised in order of importance, by considering both the power and the interest of each stakeholder group. This was done by grouping the stakeholders into either of the following (see also Figure 1).

- **Key Players (KP):**  
High power (level of power >3-5) AND high interest (level of interest >3-5)
- **Meet their needs (MTN):**  
High power (level of power >3-5) but low interest (level of interest 1-3)
- **Show consideration (SC):**  
Low power (level of power 1-3) but high interest (level of interest >3-5)
- **Least important (LI):**  
Low power (level of power 1-3) AND low interest (level of interest 1-3)

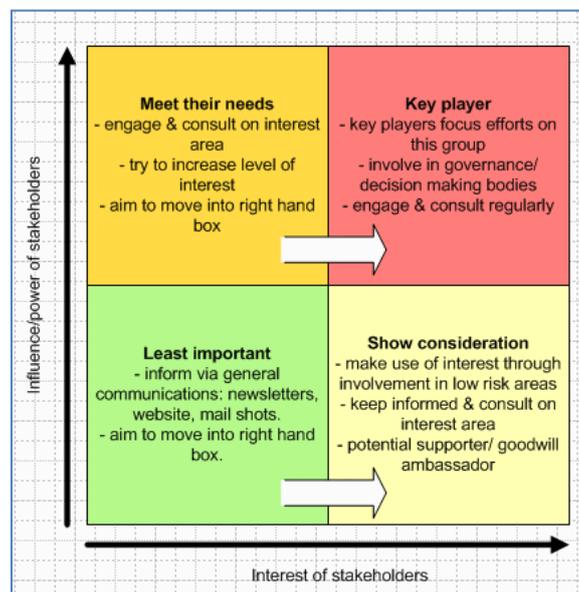


Figure 1. Map of power/influence versus interest of stakeholders (Bryson, 1995 and Eden & Ackermann, 1998).

The results of the assessment were plotted in the Excel template when the level of power and interest had been filled in. An example of a power versus interest grid can be seen in Figure 2.

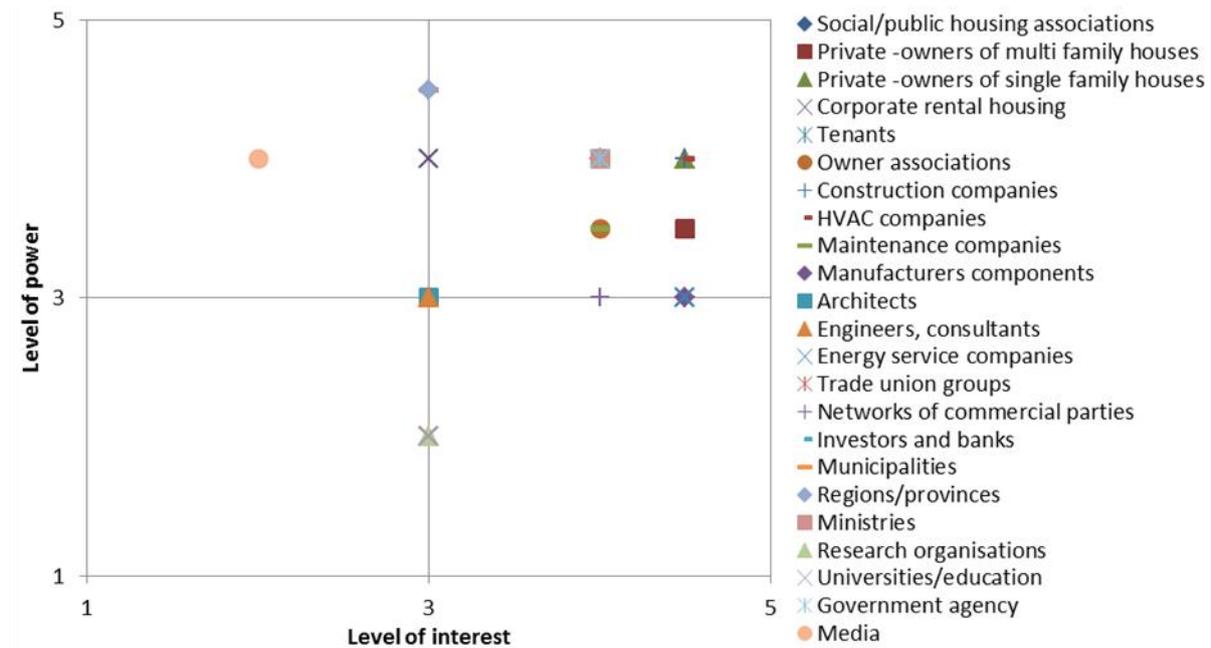


Figure 2 Example of power versus interest grid (results from the analysis for the Netherlands)

#### 4. Short discussion regarding the stakeholder analysis

In the fourth step the partners discussed the performed stakeholder analysis in a short text. They sent the filled in Excel-template and the summary to IVL as input to this deliverable.

## 2.2 Contributions of partners

The stakeholder analysis has been performed in each country by the national partners. The research partners in each country have been responsible for documenting the stakeholder analysis and sending the information to IVL who has compiled all the information to this deliverable.

- Chapter 1-2 IVL
- Chapter 3 VTT
- Chapter 4 W/E
- Chapter 5 IVL
- Chapter 6 Tecnalia
- Chapter 7 ISPE
- Chapter 8-9 IVL

## 2.3 Baseline // Relation to previous and future versions

Instructions for the stakeholder analysis and an Excel-file were sent to the partners by IVL during the spring 2014, see Appendices 2-3. The Excel-files were completed and sent to IVL.

## 2.4 Relations to other activities in the project

The stakeholder analysis is the first step in identifying important actors to invite to the national NZEBR clusters that will be formed in NeZeR. The first workshops with the national NZEBR clusters will be organized in September 2014. Documentation of the workshops will be made and reported in D5.2 Reports of the 6 workshops/meetings organised per country. The information from the stakeholder analysis is also valuable for the communication activities.

## 3 RESULTS FINLAND

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Main authors: VTT

### 3.1 Identified stakeholder groups

The following stakeholder groups have been identified in Finland as important for the uptake of NZEBR and deployment of RES on a national scale:

- **Architects (project planning, consulting)** Architects in project planning will make the plans of larger units and thus they can effect to the general energy solutions
- **Architects (single building)** Architects of single building renovations will effect only to the solutions of one building. Some of the energy solutions might be done already in project planning level.
- **Boards of the apartment houses** Board of the apartment houses have an interest to get energy savings and thus economical savings.
- **Private building owners (private single house)** Private home owners have an interest to get energy savings and thus economical savings.
- **Private building owners (private, apartment)** Private home owners have an interest to get energy savings and thus economical savings.
- **Private building owners (public and commercial)** Public and commercial building owners have an interest to get energy savings and thus economical savings. They get also commercial or political value from energy saving.
- **Cities (own buildings)** Many cities have committed themselves to different energy aims. They have also interests to get savings in energy costs.
- **Construction companies (contract work)** Construction companies will mainly carry out the plans without strong effect to them
- **Consultants** Consultants will give guidelines for planning
- **Developers** Developers are usually interested in the whole life-cycle of the building and thus they take also energy efficiency into account.
- **Energy Supply Companies (others)** Energy supply companies will decide by which method the needed electricity and district heating is produced.
- **Energy Supply Companies (owned by cities)** Energy supply companies will decide by which method the needed electricity and district heating is produced.
- **ESCOs** ESCOs will make the energy efficient renovations AND they also make them possible by offering the funding
- **Facility Management** Facility management will be the operator of the building services so their interest is to get the systems which are easy to operate and maintain
- **Governmental decision-makers (politicians)** Governmental decision-maker give the political frames to the whole building sector.
- **House managers** House managers will give information to the board of the houses and they have a significant role when making the decisions concerning the renovations.
- **Investors and banks** Investors and banks will finance the renovations
- **Manufacturers NZEBR components** Manufacturers NZEBR components will get their business from NZEB construction and renovations.
- **Manufacturers RES components** Manufacturers RES components will get their business from RES construction and renovations.

- **Media, general papers** General papers can inform about the new technologies and successful and unsuccessful cases. Usually they however concentrate in unsuccessful cases
- **Media, trade papers** The trade papers inform the actors about the new technologies and successful and unsuccessful cases
- **Ministries** Ministries will guide the building sector within the frames given by governmental decision-makers
- **Municipal decision-makers (politicians)** Municipal decision-makers give the political frames to the municipal building organisations.
- **Municipal authority and licensing authority** Municipal building authorities have a potential power to significantly promote energy efficient building especially among house builders.
- **Other organisations** Other organisations have e.g. a role within the funding the research and development work
- **Planners (building services)** Engineers in building services will affect to the solutions in heat recovery, heating, cooling, lighting and other energy consuming systems
- **Planners (construction)** Engineers will affect to the constructions of the buildings
- **Rental / housing associations** Rental / housing associations will usually carry the cost of the heating energy. Thus they have a strong interest to decrease the energy consumption.
- **Research Organisations** Research organisations will generate know-how to many players in the building sector
- **Universities/Education** Universities will generate know-how to many players in the building sector and they also will educate the new generations of the planners

### 3.2 Assessment of the level of power and interest of each stakeholder group

The main interests for the identified stakeholder groups in Finland have been assessed see Table 1.

*Table 1 Identified stakeholder groups in Finland and their main interests regarding NZEBR and RES*

Stakeholder or target group	What are their interests?
Architects (project planning, consulting)	To make good architectural planning
Architects (single building)	To make good architectural planning
Boards of the apartment houses	To keep the building they manage in good condition and make reasonable renovations
Private building owners (Private single house)	To keep the building they manage in good condition and make reasonable renovations
Private building owners (private, apartment)	To keep the building they manage in good condition and make reasonable renovations
Private building owners (public and commercial)	To keep the building they manage in good condition, make reasonable renovations

	which also give a commercial value for the building.
Cities (own buildings)	To keep the building they manage in good condition and make reasonable renovations
Construction companies (contract work)	To carry out the renovations as they are planned.
Consultants	To give customers professional guidance for the renovations.
Developers	To make the building working their whole life-cycle.
Energy Supply Companies (others)	To provide energy at a reasonable price according to the demands of the owner and the markets.
Energy Supply Companies (owned by cities)	To provide energy at a reasonable price according to the demands of the owner and the markets.
ESCOs	To produce good quality energy efficient renovations.
Facility Management	To keep the buildings working as they are planned to be.
Governmental decision-makers (politicians)	To make good quality legislation in accordance with the EU directives.
House managers	To keep the buildings in good condition.
Investors and banks	To increase value for the investments.
Manufacturers NZEBR components	To produce products which have enough value for customers.
Manufacturers RES components	To produce products which have enough value for customers.
Media, general papers	To inform people for the new innovation and possible advantages and disadvantages of them.
Media, trade papers	To inform professionals for the new innovation and possible advantages and disadvantages of them.
Ministries	To be an executor of the politician decisions.
Municipal decision-makers (politicians)	To keep the municipal building stock in reasonable condition.
Municipal authority and licensing authority	To be an executor of the politicians' decisions.
Other organisations	To give information and resources for the markets.
Planners (building services)	To make plans for building services as the ordered.

Planners (construction)	To make plans for constructions as the ordered.
Rental / housing associations	To keep their building stock in reasonable condition.
Research Organisations	To give information for the markets
Universities/Education	To give information for the markets and educate the new experts.

For Finland, a rating of the level of power and interest of the identified stakeholder groups for NZEBR and RES has been made see Table 2. This was done on a scale of 1-5 for each stakeholder group (1=very low, 2=low, 3=neither high nor low, 4=high, 5=very high).

*Table 2 Assessment of the level of power and interest for NZEBR and RES of the stakeholder groups in Finland (1=very low, 2=low, 3=neither high nor low, 4=high, 5=very high)*

<b>Stakeholder or target group</b>	<b>Level of power (1-5)</b>	<b>Level of interest (1-5)</b>	<b>Power/interest group (KP, MTN, SC,LI)</b>
Architects	3	3	Least important (LI)
Architects (project planning, consulting)	4	3	Meet their needs (MTN)
Architects (single building)	2	3	Least important (LI)
Boards of the apartment houses	4	3	Meet their needs (MTN)
Private building owners (Private single house)	5	3	Meet their needs (MTN)
Private building owners (private, apartment)	4	3	Meet their needs (MTN)
Private building owners (public and commercial)	3	4	Show consideration (SC)
Cities (own buildings)	5	4	Key player (KP)
Construction companies (contract work)	1	1	Least important (LI)
Consultants	3	3	Least important (LI)
Developers	3	2	Least important (LI)
Energy Supply Companies (others)	4	2	Meet their needs (MTN)
Energy Supply Companies (owned by)	4	4	Key player (KP)

cities)			
ESCOs	3	4	Show consideration (SC)
Facility Management	2	1	Least important (LI)
Governmental decision-makers (politicians)	4	4	Key player (KP)
House managers	4	3	Meet their needs (MTN)
Investors and banks	5	2	Meet their needs (MTN)
Manufacturers NZEBR components	4	5	Key player (KP)
Manufacturers RES components	4	5	Key player (KP)
Media, general papers	4	3	Meet their needs (MTN)
Media, trade papers	4	5	Key player (KP)
Ministries	4	5	Key player (KP)
Municipal decision-makers (politicians)	4	3	Meet their needs (MTN)
Municipal authority and licensing authority	4	4	Key player (KP)
Other organisations	3	5	Show consideration (SC)
Planners (building services)	3	3	Least important (LI)
Planners (construction)	1	2	Least important (LI)
Rental / housing associations	5	4	Key player (KP)
Research Organisations	3	5	Show consideration (SC)
Universities/Education	3	5	Show consideration (SC)

The results from the assessment of the level of power and interest of the identified stakeholder groups in Finland can also be seen in Figure 3.

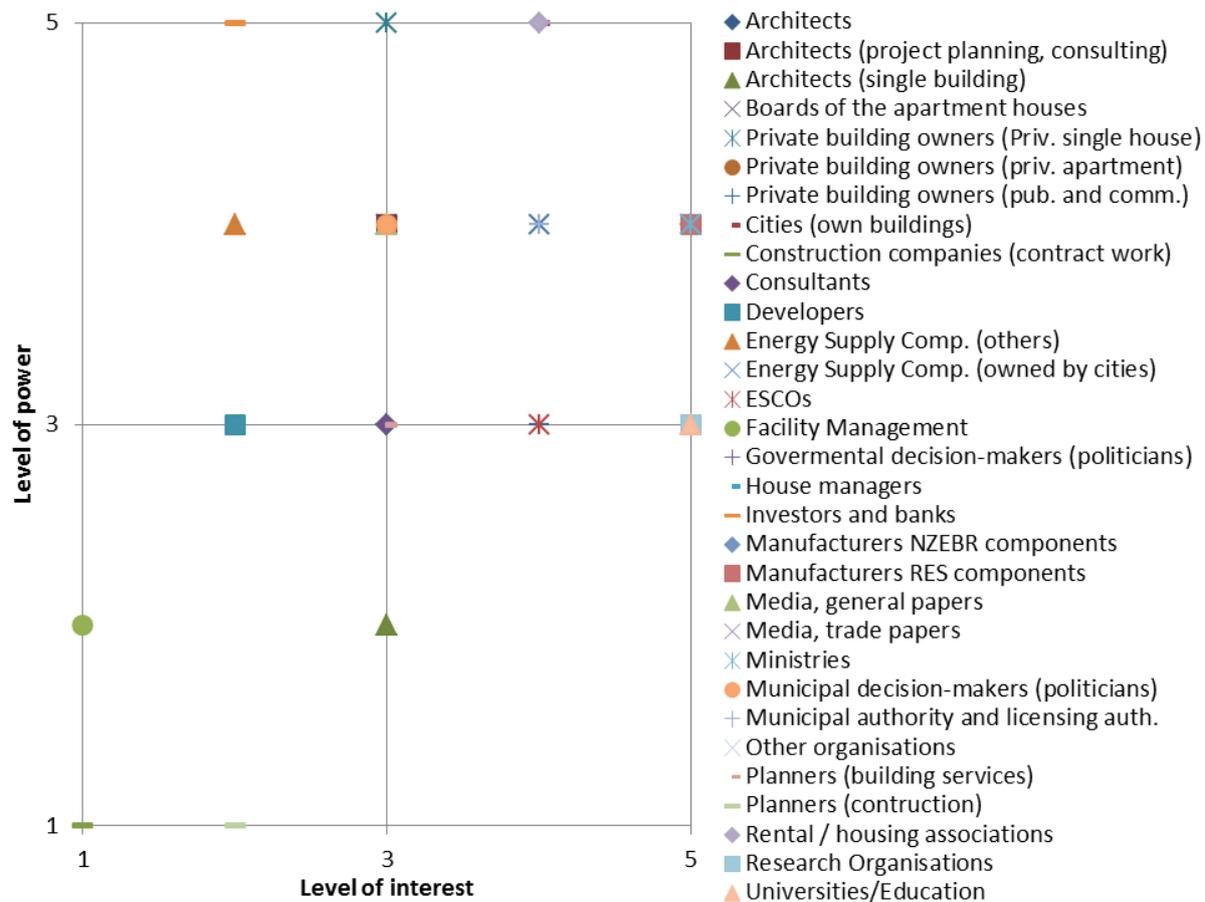


Figure 3 Power versus interest grid for NZEBR and RES of the stakeholder groups in Finland

### 3.3 Discussion

First important players are building owners including both public and private building owners. Especially important are owners who manage a large building portfolio like rental/housing associations. They have strong power in the markets and they also have strong interest to make energy saving and even Nearly Zero Energy Building Renovations.

The private owners of the single houses and apartment have also strong power in the markets. However, the cost of the renovations compared to energy savings and lack of good understanding about life-cycle benefits decrease the interest for the renovations. In apartment houses the problem is also the large amount of the owners of one building and variable interests of them.

The private owners of the commercial and public buildings have also an interest for renovation because energy efficiency produces savings in the costs and also improves the image of the company.

Second group of important players are the manufacturers of HVAC and building components. This is understandable, because the owners make the decisions concerning the buildings and decision are based on the available construction and building automation solutions.

Third group of the important players are the governmental and municipal decision makers and ministries. Politicians will decide how to implement e.g. European directives in national legislation and ministries will bring the legislation in to practice. These decisions give a

direction to the whole renovation field. Policy makers also decide about the use of different kinds of fiscal instruments and incentives to promote energy-efficient renovation.

Municipal building authorities have a potential power to significantly promote energy efficient building especially among house builders as shown in the city of Oulu in Finland (Rekola et al, 2014). Similar methods could also be applied in the context of house renovation.

ESCO companies have also a strong interest for Nearly Zero Energy Building Renovations, but the power of them in Finland is not as high as it could be. However, the ESCO companies offer not only the solution for the renovation but also the funding for it, so it is expected, that the power of them increases in the future.

Trade media is a bipartite key player. On the other hand they are excellent way to inform and they can distribute information about the new building solutions. On the other hand the unsuccessful examples are sometimes overplayed and thus the effect to public opinion might be negative.

Construction companies, construction planners and facility management are among the least important players with regard to energy-efficient renovation. Construction companies will just put into practice the renovation plans and planners have not so big effect to the plans when decisions are made. Facility management is also the user of the installed building services. However, small building and renovation companies that offer renovation services for the owners of small houses might also have a positive role in activating energy-efficient renovation.

Architects, consultants and the planners of the building services are all important players in the renovation markets, but the power and interest of them is not enough for Key Player category. However the architects can be divided in two groups. Those, who will make the plans for districts or blocks of buildings, are estimated to belong to the category that has a higher importance. Principal designers and other designers may also have an important role when they work together with clients who are willing to set demanding targets for energy performance. The realization depends on the possibilities to find cost-efficient design solutions.

Research organisations', universities' and other organisations' (e.g. RAKLI, RIL, Tekes, Sulpu) interest to Nearly Zero Energy Building Renovation is usually very high, but the power of them in the markets is not high enough to Key Player category.

Also investors and, banks have power and influence if they have a motivation and interest to promote very energy-efficient renovation. The motivation much depends on the real effect of the energy performance on the value of properties.

House managers are classified as rather important players because of their potential power based on (possible) expertise and possibility to activate housing associations. They would be an important target group to which information about the benefits of NZEBR should be disseminated and communicated.

## 4 RESULTS THE NETHERLANDS

Main authors: W/E

### 4.1 Identified stakeholder groups

In the Netherlands the following actors has been identified as important stakeholders for NZEBR and deployment of RES on a national level:

- **Social/public housing associations** Owners of big numbers of housing (2,4 million)
- **Private -owners of multi-family houses** Large numbers and high potential for energy saving measures
- **Private -owners of single family houses** Large numbers and high potential for energy saving measures
- **Corporate rental housing** Small numbers, might be a developing market for energy saving measures
- **Tenants** User of the housing
- **Owner associations** Collective of owners of big numbers of multi-family buildings
- **Construction companies** They (create and) build solutions
- **HVAC companies** They (create and) build solutions
- **Maintenance companies** They maintain solutions
- **Manufacturers components** They manufacture parts of the solutions
- **Architects** They create, integrate, design and visualize concepts
- **Engineers, consultants** They create, integrate, calculate concepts
- **Energy service companies** They deliver all-in-one service
- **Trade union groups** They represent workers
- **Networks of commercial parties** They inspire and facilitate energy savings
- **Investors and banks** They finance projects and provides a guarantee
- **Municipalities** They can program, facilitate and implement locally
- **Regions/provinces** They can program, facilitate and implement in a region
- **Ministries** They can program, facilitate and implement nationally
- **Research organisations** They create and evaluate knowledge
- **Universities/education** They create and evaluate knowledge
- **Government agency** They can program, facilitate and implement nationally
- **Media** They are spreading the news

### 4.2 Assessment of the level of power and interest of each stakeholder group

The main interest regarding NZEBR and RES for the identified stakeholder groups in Netherlands has been assessed, see Table 3.

*Table 3 Identified stakeholder groups in the Netherlands and their main interests regarding NZEBR and RES*

Stakeholder or target group	What are their interests?
Social/public housing associations	A sustainable (local) social housing sector

Private -owners of multi- family houses	Healthy, high value housing with low energy costs
Private -owners of single family houses	Healthy, high value homes with low energy costs
Corporate rental housing	Offering healthy, high value homes with low energy costs
Tenants	Healthy homes with low energy costs
Owner associations	Healthy, high value homes with low energy costs
Construction companies	Business
HVAC companies	Business
Maintenance companies	Business
Manufacturers components	Business
Architects	Business
Engineers, consultants	Business
Energy service companies	Business
Trade union groups	Work
Networks of commercial parties	Developing knowledge, creating value and realise performance results
Investors and banks	Partnership
Municipalities	Performance of the municipality and fulfilment of political goals
Regions/provinces	Performance of a region and fulfilment of political goals
Ministries	Performance of the country and fulfilment of political goals
Research organisations	Knowledge
Universities/education	Knowledge
Government agency	Fulfilment of political goals
Media	Interesting news

A rating of the power and interest of the Dutch stakeholder groups for NZEBR and RES has been made see Table 4. This was done on a scale of 1-5 for each stakeholder group (1=very low, 2=low, 3=neither high nor low, 4=high, 5=very high).

*Table 4 Assessment of the level of power and interest for NZEBR and RES of the stakeholder groups in the Netherlands (1=very low, 2=low, 3=neither high nor low, 4=high, 5=very high)*

<b>Stakeholder target group or</b>	<b>Level of power (1-5)</b>	<b>Level of interest (1-5)</b>	<b>Power/interest group (KP, MTN, SC,LI)</b>
Social/public housing associations	4	4	Key player (KP)
Private -owners of multi-family houses	3.5	4.5	Key player (KP)
Private -owners of single family houses	4	4.5	Key player (KP)
Corporate rental housing	4	3	Meet their needs (MTN)
Tenants	3	4.5	Show consideration (SC)
Owner associations	3.5	4	Key player (KP)
Construction companies	4	4.5	Key player (KP)
HVAC companies	4	4.5	Key player (KP)
Maintenance companies	3.5	4	Key player (KP)
Manufacturers components	3	4.5	Show consideration (SC)
Architects	3	3	Least important (LI)
Engineers, consultants	3	3	Least important (LI)
Energy service companies	3	4.5	Show consideration (SC)
Trade union groups	2	3	Least important (LI)
Networks of commercial parties	3	4	Show consideration (SC)
Investors and banks	4.5	3	Meet their needs (MTN)
Municipalities	4.5	3	Meet their needs (MTN)
Regions/provinces	4.5	3	Meet their needs (MTN)
Ministries	4	4	Key player (KP)

Research organisations	2	3	Least important (LI)
Universities/education	2	3	Least important (LI)
Government agency	4	4	Key player (KP)
Media	4	2	Meet their needs (MTN)

The results from the assessment of the power and interest for NZEBR and RES of the stakeholder groups in the Netherlands can also be seen in Figure 4.

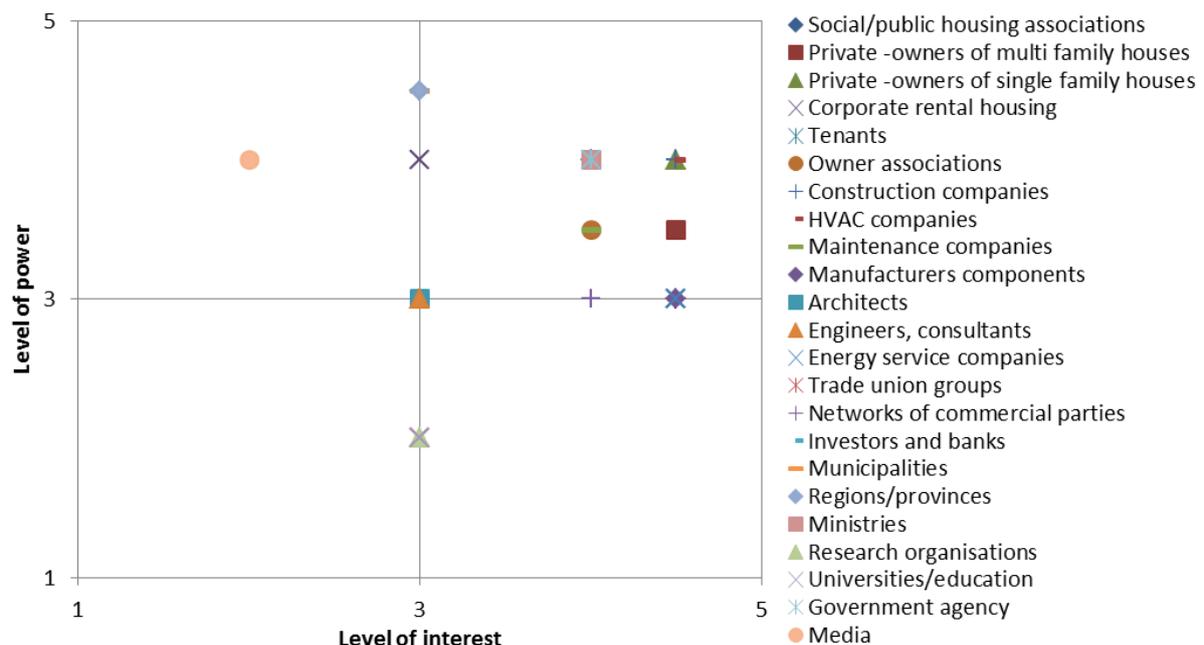


Figure 4 Power versus interest grid for NZEBR and RES of the stakeholder groups in the Netherlands

### 4.3 Discussion

The stakeholder analysis for the Netherlands shows three sub clusters of parties: owners and tenants (1), companies (2) and facilitators (3). Key Players from sub cluster 1 are the private owners, their associations and the social housing sector. Their power is at high level because they can decide about investments in the housing. Their interests are at high level because they are end-user as well, or have a social responsibility.

Key Players from sub cluster 2 are construction-, HVAC- and maintenance companies. They show already their power at high level in pilot projects in The Netherlands. Some of them invest in innovation and deliver high performance. Their interests are high as well, because of the large scale of possible repetition (for business).

Key Players from sub cluster 3 are ministries and government agencies, because they can invest in programs for knowledge and process facilitation. They also show already their power at high level in different sectors, although their interests are not as big as for the housing-owners. Since there is already a program for NZEBR in the social housing sector ('De Stroomversnelling'), W/E and the Dutch partners would like to focus on the private-owners (and owner associations) sector for composing the national cluster in the NeZeR project.

## 5 RESULTS SWEDEN

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Main authors: IVL

### 5.1 Identified stakeholder groups

The following stakeholders have been identified in Sweden as important stakeholders for NZEBR and deployment of RES on a national level:

- **Swedish National Board of Housing, Building and Planning** Sets the national energy requirements for buildings. Currently there are no energy requirements for renovation of buildings in the national building code, but there are requirements for new construction. No Swedish definition of NZEB is yet defined. The Swedish National Board of Housing and National Energy Agency are currently working on this.
- **National Energy Agency** The Swedish Energy Agency is working for the use of renewable energy, improved technologies and a more efficient end-use of energy. The National Energy Agency is working with the Swedish National Board of Housing on the national definition of NZEB.
- **Ministry of Health and Social Affairs** The Ministry of Health and Social Affairs administer Swedish National Board of Housing.
- **Ministry of Enterprise** The Ministry of Enterprise administer the National Energy Agency.
- **European Union** The European Union's binding agreements set out the EU's goals in its many areas of activity. EU is important for NZEBR through its legislative power e.g. EPBD and also through funding for research programs.
- **Municipal decision-makers (politicians)** The municipalities own housing associations and may influence them through owner directives. Until now some municipalities have had their own energy requirements for new construction on land owned by the municipality.
- **Municipal administration** The Municipal administration administers building permits etc.
- **Political parties** They set the political agenda nationally and locally. The interest for NZEBR varies among the political parties in Sweden; there are supporters and opponents.
- **Construction companies** They carry out the renovation projects. Their work has a big impact on the final results of the projects.
- **Trade organizations, professional and industrial organizations, interest groups** They represent their members' interests. May promote or be opposed to NZEBR. Can promote the concept through their networks.
- **Manufacturers of NZEBR and RES components** They produce the units that are used in the renovation projects. The quality and performance is very important for the final results.
- **Housing cooperatives** Groups of people that own their buildings cooperatively.
- **Private property owners (small companies)** Private owners of buildings not listed on the stock exchange, small companies or individuals.
- **Private property owners (large companies)** Private owners of buildings listed on the stock exchange and/or listed on the stock exchange.
- **Public property owners** Often large companies, owners of buildings. Have a high interest in energy efficiency.

- **Facility Management** They provide the maintenance of the buildings. Some provide energy services.
- **Energy Supply Companies** They provide the energy for the buildings. Set the energy price which can increase the incentives for energy efficiency. Have an increasing interest for energy services, as a way to keep customers.
- **Investors and banks** The investors and banks provide capital for NZEBR. May hinder NZEBR projects if they do not consider them profitable.
- **Tenants** The tenants are the users of the buildings. They may have requirements regarding renovation and influence the final energy demand through indoor temperature, ventilation etc.
- **R&D projects, cooperation projects** They promote NZEBR nationally through information and networking.
- **EU projects** Increase the knowledge about NZEBR.
- **Developers** They invest and develop properties, are more important stakeholders for new construction.
- **Consultants** The consultants are important actors in renovation projects as they choose technical solutions for them.
- **Architects** The architects are important actors in renovation projects as they plan and design them.
- **Energy service companies (ESCOs)** They provide energy services to the property owners.

## 5.2 Assessment of the level of power and interest of each stakeholder group

The main focus or interest regarding NZEBR and RES for the different stakeholder groups in Sweden has been assessed, see Table 5.

*Table 5 Identified stakeholder groups in Sweden and their main interests regarding NZEBR and RES*

Stakeholder or target group	What are their interests?
Swedish National Board of Housing	Fulfilment of the EPBD and national goals regarding the housing sector.
National Energy Agency	Fulfilment of the EED and national goals regarding the energy sector.
Ministry of Health and Social Affairs	Fulfilment of the Swedish political goals set by the Government.
Ministry of Enterprise	Fulfilment of the Swedish political goals set by the Government.
EU	A broad spectrum. Implementation of the EPBD.
Municipal decision-makers (politicians)	Interest varies depending on political majority.
Municipal administration	Carries out the decisions of the local political majority

Political parties	Varies depending on what party.
Construction companies	Successful projects and business opportunities. Forerunners are interested in having a green profile.
Trade organizations, professional and industrial organizations, interest group (organizations)	Be spokesman for their members interests.
Manufacturers NZEBR and RES components	High quality products and business opportunities.
Housing cooperatives	Buildings with high performance at a low cost.
Private property owners (small companies)	Buildings with high performance at a low cost.
Private property owners (large companies)	Buildings with high performance at a low cost.
Public property owners	Buildings with high performance at a low cost. Increasing interest for NZEBR.
Facility Management	Business. There is a big difference between different companies some provides energy services.
Energy Supply Companies	Provide energy and business opportunities.
Investors and banks	Profit and business.
Tenants	The interest varies regarding energy efficiency. A good indoor comfort and low energy costs.
R&D projects, cooperation projects	Networking and promoting different concepts.
EU-projects	New research results, big impact.
Developers	Profit and business.
Consultants	Provide services and business opportunities. Forerunners are interested in having a green profile.
Architects	Provide good architecture and business opportunities. Forerunners are interested in having a green profile.
Energy service companies (ESCOs)	Provide energy services and business opportunities. High interest for energy efficiency.

A rating of the level of power and interest for NZEBR and RES of the stakeholder groups identified in Sweden has been made see Table 6. This was done on a scale of 1-5 for each stakeholder group (1=very low, 2=low, 3=neither high nor low, 4=high, 5=very high).

*Table 6 Assessment of the level of power and interest for NZEBR and RES of the stakeholder groups in Sweden (1=very low, 2=low, 3=neither high nor low, 4=high, 5=very high)*

<b>Stakeholder or target group</b>	<b>Level of power (1-5)</b>	<b>Level of interest (1-5)</b>	<b>Power/interest group (KP, MTN, SC,LI)</b>
Swedish National Board of Housing	4	3	Meet their needs (MTN)
National Energy Agency	3	5	Show consideration (SC)
Ministry of Health and Social Affairs	5	2	Meet their needs (MTN)
Ministry of Enterprise	5	3	Meet their needs (MTN)
EU	3	4	Show consideration (SC)
Municipal decision-makers (politicians)	4	4	Key player (KP)
Municipal administration	3	4	Show consideration (SC)
Political parties	4	4	Key player (KP)
Construction companies	4	4	Key player (KP)
Professional and industrial organizations and interest group	4	4	Key player (KP)
Manufacturers NZEBR and RES components	4	4	Key player (KP)
Housing cooperatives	3	3	Least important (LI)
Private property owners (small companies)	3	3	Least important (LI)
Public property owners	4	4	Key player (KP)
Private property owners (large companies)	4	3	Meet their needs (MTN)
Facility Management	4	2	Meet their needs (MTN)

Energy Supply Companies	4	3	Meet their needs (MTN)
Investors and banks	4	2	Meet their needs (MTN)
Tenants	3	3	Least important (LI)
R&D projects, cooperation projects	4	4	Key player (KP)
EU-projects	3	5	Show consideration (SC)
Developers	4	3	Meet their needs (MTN)
Consultants	4	3	Meet their needs (MTN)
Architects	4	3	Meet their needs (MTN)
Energy service companies (ESCOs)	4	3	Meet their needs (MTN)

The results from the assessment of the level of power and interest for NZEBR and RES of the Swedish stakeholder groups can also be seen in Figure 5.

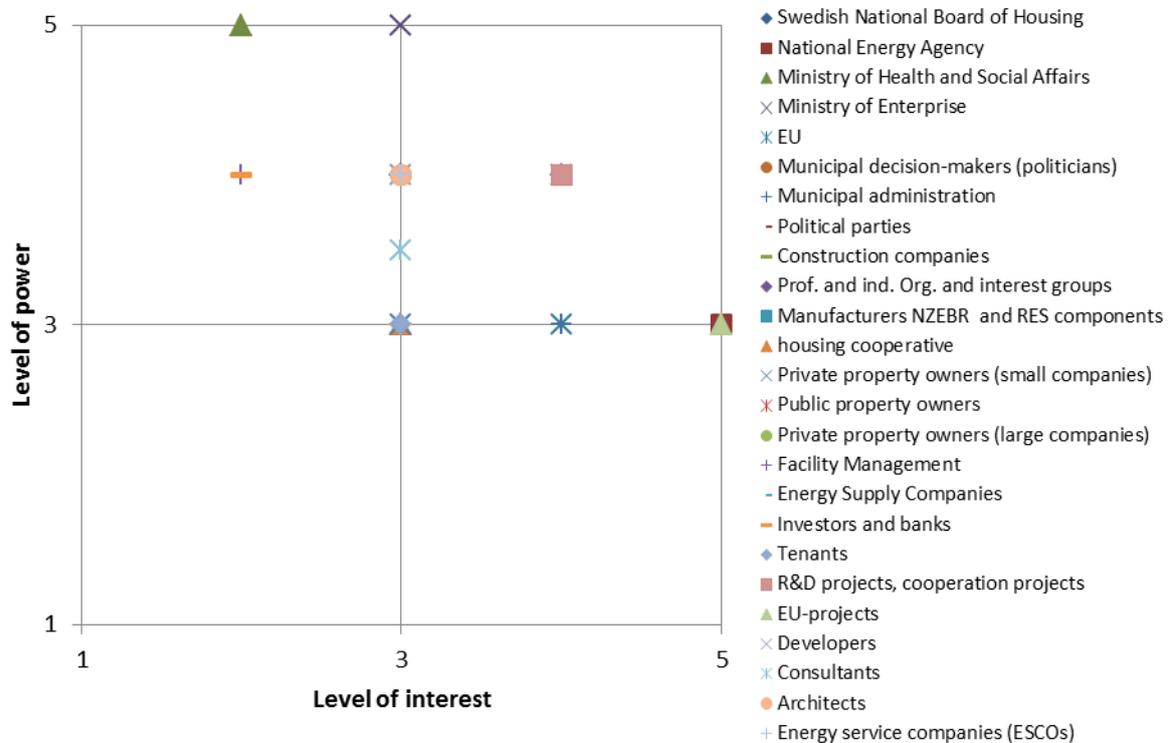


Figure 5 Power versus interest grid for NZEBR and RES of the stakeholder groups in Sweden

### 5.3 Discussion

Many stakeholder groups have an influence on the uptake of Nearly Zero Energy Building renovation and deployment of Renewable Energy Sources in Sweden. The list of identified stakeholder groups is not complete but is a good starting point for the establishment of a NZEBR cluster in Sweden.

It is difficult to assess the level of power and interest of a group of stakeholders, it varies depending on what company, organization and individuals that are considered.

The following stakeholders have been identified as Key Players on the Swedish market; municipal decision-makers (politicians), political parties, manufacturers of NZEBR and RES components, public property owners, professional and industrial organizations and interest groups and R&D projects and cooperation projects. The Key Players all have a high level of power and a high level of interest. According to the assessment the public property owners have a higher level of power and interest than the private property owners. The municipal housing associations have a big share of the housing market in e.g. the City of Stockholm and are as such very important players. The municipal housing associations often participate in networks and seminars. The political parties set the agenda for the debate in Sweden. The opinions regarding NZEBR vary between the parties. The municipal decision-makers (politicians) may influence the municipal housing associations through owner directives. From the construction sector the manufacturers of NZEBR and RES components and construction companies are also identified as Key Players. Construction companies carry out the renovation projects and their work has a big impact on the final results of the projects. The power of the Construction companies in a specific NZEBR project depends on type of contract used. The largest construction companies in Sweden all have a high interest for

energy efficiency; this is a business opportunity for them. The stakeholder groups professional and industrial organizations and interest groups and R&D projects and cooperation projects have both been identified as Key Players. The power and influence of these types of stakeholders vary, as they organise and represent their members, but they may have a big impact on the Swedish housing market and can promote NZEBr. A more detailed analysis of organisations and networks belonging to these stakeholder groups will be done in the next step of the establishment of the national NZEBr clusters in NeZeR.

The following stakeholders have been identified in Sweden as Meet Their needs: Swedish National Board of Housing, Ministry of Health and Social Affairs, Ministry of Enterprise, private property owners (large companies), facility management, energy supply companies, investors and banks, developers, consultants and architects. They have a high level of power but a low level of interest for NZEBr in general. The authorities Swedish National Board of Housing, Ministry of Health and Social Affairs and Ministry of Enterprise influence the building regulations in Sweden. There is currently a debate in Sweden what the definition of NZEB should be; the Government has proposed that the current energy requirements for new construction in the building code should be the definition of NZEB. This has been debated by the National Energy Agency which has proposed more ambitious energy requirements. Currently the National Board of Housing and the National Energy Agency are investigating a new definition of NZEB. Private property owners and developers have a high level of power but a lower level of interest for NZEBr than public property owners as their requirements for profits are higher. Energy supply companies influence the market through the energy price; with a higher price more property owners are interested in NZEBr. Investors and banks have had a low interest in energy efficiency, but this has started to change. Facility management, architects and consultants all influence the final energy demand in a building. The architects and consultants are important actors in renovation projects as they design and choose technical solutions for them. Depending on type of contract the power may be high or low. The interest varies among these actors; there are architects and consultants that are forerunners and that have a high interest in NZEBr and see business opportunities.

In Sweden the following stakeholder groups have been identified as Show Consideration: National Energy Agency, municipal administration, EU and EU-projects. They all have a high interest for NZEBr but a lower level of power. According to the stakeholder analysis the following stakeholder groups have been identified as Least Important: housing cooperatives and private property owners (small companies). They have a low level of power and a low level of interest.

## 6 RESULTS SPAIN

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Main authors: Tecnalia

### 6.1 Identified stakeholder groups

In Spain the following stakeholder groups have been identified as important for the uptake of NZEBR and deployment of RES on a national scale:

- **Standardization bodies** Capacity for certifying solutions and ensure their effectiveness
- **Engineers (forerunners)** Knowledge to improve the cost and benefits of the products
- **Engineers (followers)** They can expand deployment
- **Construction companies (forerunners)** As they execute renovation projects; they are key entities for implementing innovative solutions.
- **Construction companies (followers)** They can spread the implementation of the innovative solutions
- **Developers (forerunners)** Productive capacity
- **Developers (followers)** They can expand deployment
- **Architects (forerunners)** Well-known architects belong to this stakeholder group. They can promote innovative design projects
- **Architects (followers)** Promotion of slightly innovative design projects
- **Investors and banks** Funding providers
- **Facility Management** Installations management
- **National Products Networks (interest groups)** Knowledge about energy efficiency solutions. Many partners in the same scenario.
- **Manufacturers NZEBR components** Capacity for product development. Knowledge about energy efficiency solutions benefits. Capacity for market activities
- **Manufacturers RES components** Developers of energy efficiency solutions.
- **Rental / housing associations (forerunners)** They can increase awareness among tenants and building owners and be at the cutting edge.
- **Rental / housing associations (followers)** They can increase awareness among tenants and building owners.
- **Private home owners (forerunners)** They can demonstrate NZEBR benefits
- **Private home owners (followers)** They can demonstrate NZEBR benefits
- **Tenants interests groups** They are end-users and pay the energy bills.
- **Municipal decision-makers (politicians)** They are market early-adopters
- **Regional decision-makers (politicians)** They are market early-adopters
- **National Energy Agency** They can demonstrate benefits of energy efficiency.
- **National Housing Agency** They can increase awareness among tenants, building owners and be at the cutting edge
- **Research Organisations** Be at the cutting edge. Promote pilot cases through research projects.
- **Universities/Education** Be at the cutting edge.
- **Media** Awareness and dissemination activities
- **Tenants** They can demand EPC
- **EU-projects** Demonstration through pilot cases
- **ESCO** They promote energy efficiency rehabilitation
- **Construction sector networks** Involve high amount of companies

## 6.2 Assessment of the level of power and interest of each stakeholder group

The main interest regarding NZEBR and RES for the identified stakeholder groups in Spain has been assessed, see Table 7.

*Table 7 Identified stakeholder groups in Spain and their main interests regarding NZEBR and RES*

Stakeholder or target group	What are their interests?
Energy Companies	To sell service/energy, increasing business
Standardization bodies	To improve the quality of the companies, their products and services, as well as to protect the environment and thus, the well-being of society.
Engineers (forerunners)	To increase business selling though more products. Increase competitiveness. Distinction from other companies.
Engineers (followers)	Increase business.
Construction companies(forerunners)	To achieve optimal energy performance buildings. Added value of buildings to increase business. To be more competitive
Construction companies (followers)	Increase business.
Developers (forerunners)	To increase business producing more products. Increase competitiveness. Distinction from other developers.
Developers (followers)	Increase business.
Architects (forerunners)	To increase business and recognition
Architects (followers)	To increase business
Investors and banks	Increase economic benefits. Investment guarantee and risk reduction.
Facility Management	Reduce number of breakdowns
National Products Networks (interest groups)	Increase profit among their associates.
Manufacturers NZEBR components	To increase business selling more products.
Manufacturers RES components	To increase business selling more products.
Rental / housing associations (forerunners)	Obtain reference houses regarding energy efficiency. Demonstrate they collaborate to prevent climate change.
Rental / housing associations (followers)	Obtain reference houses regarding energy

	efficiency. Demonstrate they collaborate to prevent climate change.
Private home owners (forerunners)	Have well equipped energy efficient buildings
Private home owners (followers)	Have well equipped energy efficient buildings. Reach forerunners owners buildings characteristics
Tenants interests groups	To maximize comfort and minimize costs.
Municipal decision-makers (politicians)	To have green cities (reduce CO <sub>2</sub> emissions, energy consumption) Accomplish regional, national and European targets
Regional decision-makers (politicians)	To have green cities (reduce CO <sub>2</sub> emissions, energy consumption) Accomplish regional, national and European targets
National Energy Agency	Accomplish regional, national and European targets
National Housing Agency	Obtain reference houses regarding energy efficiency. Demonstrate they collaborate to prevent climate change.
Research Organisations	Demonstrate innovation. Help to comply with policy targets
Universities/Education	Demonstrate innovation. Help to comply with policy targets
Media	Be the first disseminating news to the public
Tenants	To reduce energy bills
EU-projects	Be at the cutting-edge. Dissemination of successful cases
ESCO	To implement new installations. Sell products
Construction sector networks	Increase business.

A rating of the power and interest regarding NZEBR of the identified stakeholder groups in Spain has been made see Table 8. This was done on a scale of 1-5 for each stakeholder group (1=very low, 2=low, 3=neither high nor low, 4=high, 5=very high).

*Table 8 Assessment of the level of power and interest for NZEBR and RES of the stakeholder groups in Spain (1=very low, 2=low, 3=neither high nor low, 4=high, 5=very high)*

<b>Stakeholder or target group</b>	<b>Level of power (1-5)</b>	<b>Level of interest (1-5)</b>	<b>Power/interest group (KP, MTN, SC,LI)</b>
Standardization bodies	3.5	3	Meet their needs (MTN)
Engineers (forerunners)	4	4	Key player (KP)
Engineers (followers)	3	4	Show consideration (SC)
Construction companies(forerunners)	4	4	Key player (KP)
Construction companies (followers)	3	4	Show consideration (SC)
Developers (forerunners)	4	4	Key player (KP)
Developers (followers)	3	4	Show consideration (SC)
Architects (forerunners)	4	4	Key player (KP)
Architects (followers)	3	4	Show consideration (SC)
Investors and banks	4	3	Meet their needs (MTN)
Facility Management	2	2	Least important (LI)
National Products Networks (interest groups)	3	5	Show consideration (SC)
Manufacturers NZEBR components	4	4	Key player (KP)
Manufacturers RES components	4	4	Key player (KP)
Rental / housing associations (forerunners)	3.5	3	Meet their needs (MTN)
Rental / housing associations (followers)	3	2.5	Least important (LI)
Private home owners (forerunners)	5	3	Meet their needs (MTN)
Private home owners (followers)	3.8	2.5	Meet their needs (MTN)

Tenants interests groups	2	5	Show consideration (SC)
Municipal decision-makers (politicians)	5	4	Key player (KP)
Regional decision-makers (politicians)	5	4	Key player (KP)
National Energy Agency	4	5	Key player (KP)
National Housing Agency	3.5	3	Meet their needs (MTN)
Research Organisations	4	5	Key player (KP)
Universities/Education	3	4	Show consideration (SC)
Media	4.3	3	Meet their needs (MTN)
Tenants	3.5	4.2	Key player (KP)
EU-projects	4	4.5	Key player (KP)
ESCO	4	5	Key player (KP)
Construction sector networks	4	4	Key player (KP)

The results from the assessment of the level of power and interest for NZEBR and RES of the Spanish stakeholder groups can also be seen in Figure 6.

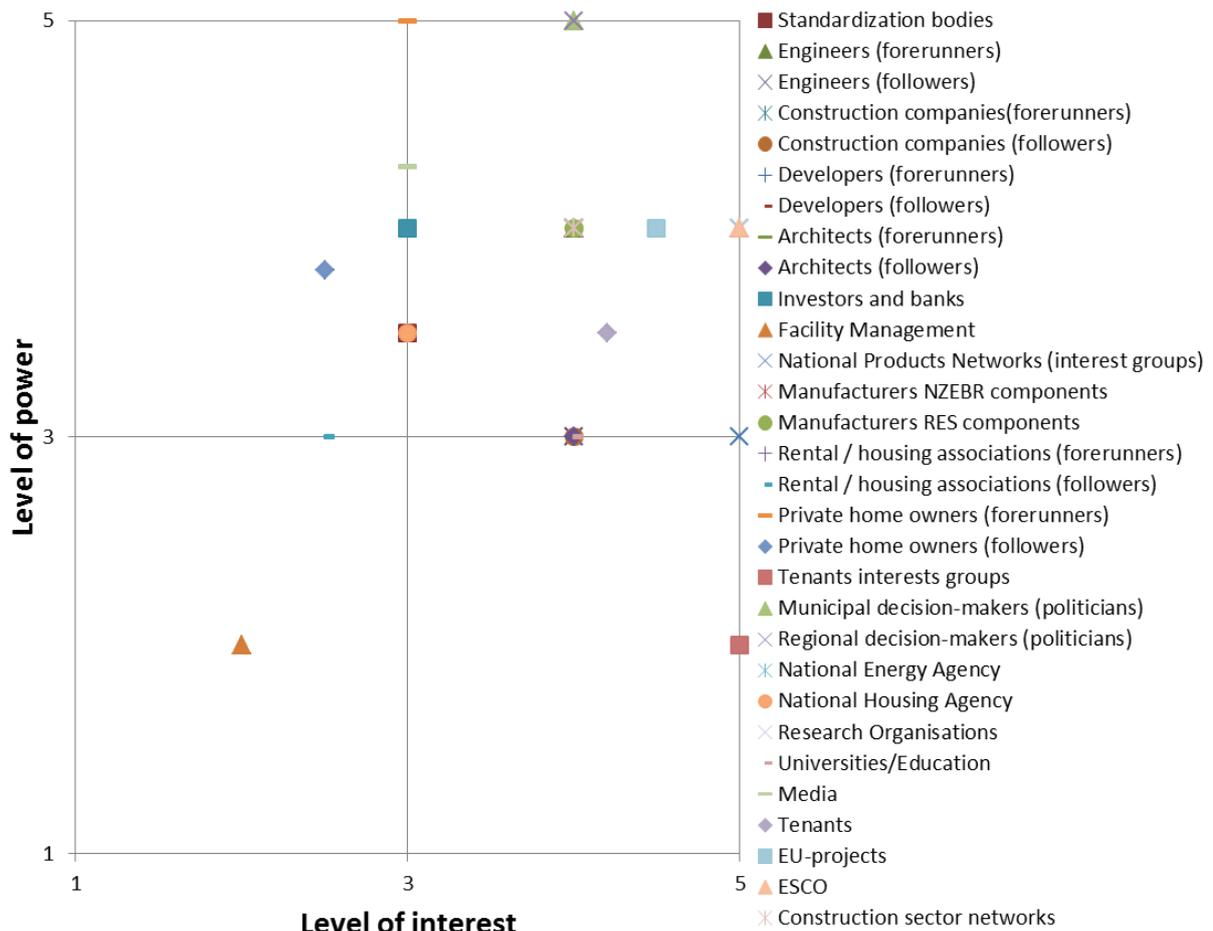


Figure 6 Power versus interest grid for NZEBR and RES of the stakeholder groups in Spain

## Discussion

Many types of stakeholders are somehow related to NZEBR. The following stakeholders can be included along the value chain:



The stakeholder analysis leads to a classification of the Stakeholders into four groups (from the most relevant to the least): Key Player (KP), Meet Their Needs (MTN), Show Consideration (SC) and Least Important (LI).

The stakeholder analysis demonstrated that Technical Experts and Policy and Regulation Agents are Key Players with respect to NZEBR. Their knowledge, production capacity and policies can help to increase the deployment of the technologies and the fulfilment of the regulations. They can show NZEBR benefits through real cases. ESCO and EU projects are also considered Key Players due to their high interest and resources to promote NZEBR while Tenants are classified as Key Players because of their interest to maximize comfort level and minimize energy costs.

Architects and private home owners are classified as Meet Their Needs. Sometimes lack of knowledge and sometimes lack of power leads to this classification. Nevertheless, they are essential to promote and allow NZEBR. Investors and banks are also in this group due to their power to allow NZEB but their interest must be enlarged.

Stakeholders classified as Show Consideration are those entities of the value chain which are not at the cutting edge of Energy Efficiency (EE) renovation.

Facility management stakeholders resulted in the category Least Important since their interests are more in the proper work of the facilities rather than implementing advanced solutions. They do not make final decisions.

Finally, there is another stakeholder considered that cannot be included in the value chain. That is the media. Although it is interested it is not directly related to promoting NZEBR, its power for dissemination should be undoubtedly considered.

In general, forerunners and followers can be distinguished for each stakeholder. Forerunners are in search for a competitive advantage against their competitors through innovation and, therefore, growing their business. Most of the cases they are medium/large size enterprises with relevant resources. Forerunners have more power than follower enterprises to promote NZEBR as well as interest. Consequently, forerunners are considered as Key Players with national influence while followers are in the category Show Consideration and they have lower influence level (regional, local).

Furthermore, associations can also be identified for every stakeholder (e.g. companies association, housing associations, energy associations, etc.). Associations are largely interested in benefit their members by means of increasing knowledge, demonstrating benefits of a particular case and helping to increase their business. They are normally characterized by a large interest to assist and advantage their members but their level of power is reduced as they do not make the final decision.

To summarize, technical experts, policy and regulation entities, business model developers, end-users and media are fundamental stakeholders to promote NZEBR. They must be involved in workshops and activities should be focused on:

- Facilitating technical experts solutions implementation by means of identifying and overcoming barriers
- Identify policy and regulation framework to identify and overcome barriers as well as foster drivers
- Increasing awareness to demonstrate NZEBR reliability.
- Increasing knowledge and awareness of home owners and tenants regarding NZEBR benefits and misunderstandings.

For all stakeholders, forerunners are the most important actors and, although associations do not make final decisions, they can help to broaden knowledge and awareness among their members.

## 7 RESULTS ROMANIA

Main authors: ISPE

### 7.1 Identified stakeholder groups

The following stakeholders have been identified in Romania as important for NZEBR and RES on a national scale:

- **Architects** They create and apply new energy efficiency solutions and measures
- **Engineers** They create and apply new energy efficiency solutions and measures
- **Construction companies** They build and integrate the new energy efficiency solutions and measures
- **Developers** They create the connection between the capacity of construction companies and the needs of customers
- **Networks (interest groups)** They form the customers and they can determine their interest to select the most efficient buildings/products/solutions through presentations/demonstrations of the best practices at national and international level
- **Manufacturers NZEBR components** They can change the behaviour of the customer and they can lead it to understand and accept the NZEBR criteria
- **Manufacturers RES components** They can meet the customers' needs and they can promote an increasing level of acceptance of the RES utilisation versus conventional fuels
- **Rental / housing associations** They try to implement the best efficient solutions
- **Private home owners** They try to implement the best efficient solutions
- **Tenants interests groups** They can strengthen the use of minimum energy consumption criteria as a base for selecting the building/house for rent
- **Municipal decision-makers (politicians)** They approve the local strategies and action plans for local development
- **Ministries** They can approve technical and administrative documents (norms and methodologies) and financial resources for developing the energy efficiency measures
- **Research Organisations** They contribute to finding the most sustainable solution for increasing the buildings energy performance
- **Universities/Education** They contribute to formation of the future experts
- **Media** They are the main disseminators of the new solutions/projects
- **EU-projects** They can demonstrate the research/innovative initiatives
- **Energy Service Companies (ESCOs)** They are consultant+investor+operator=investment facilitator

## 7.2 Assessment of the level of power and interest of each stakeholder group

The main interest regarding NZEBR and RES for the identified stakeholder groups in Romania has been assessed, see Table 9.

*Table 9 Identified stakeholder groups in Romania and their main interests regarding NZEBR and RES*

Stakeholder or target group	What are their interests?
Architects	Business
Engineers	Business
Construction companies	Business
Developers	Business
Networks (interest groups)	Promotion and dissemination
Manufacturers NZEBR components	Business
Manufacturers RES components	Business
Rental / housing associations	Increasing the profitability of their properties
Private home owners	Increasing the profitability of their properties
Tenants interests groups	Housing with low energy costs and clean environment
Municipal decision-makers (politicians)	Political goals
Ministries	To meet the economic indicators
Research Organisations	That their solutions and projects will have an impact
Universities/Education	Increasing the level of education
Media	Business
EU-projects	Multiplication of efficient initiatives (increasing the saving energy and number of jobs)
Energy Service Companies (ESCOs)	Business

A rating of the level of power and interest of the identified Romanian stakeholder groups has been made see Table 10. This was done on a scale of 1-5 for each stakeholder group (1=very low, 2=low, 3=neither high nor low, 4=high, 5=very high).

*Table 10 Assessment of the level of power and interest for NZEBR and RES of the stakeholder groups in Romania (1=very low, 2=low, 3=neither high nor low, 4=high, 5=very high)*

<b>Stakeholder or target group</b>	<b>Level of power (1-5)</b>	<b>Level of interest (1-5)</b>	<b>Power/interest group (KP, MTN, SC,LI)</b>
Architects	3	3.5	Show consideration (SC)
Engineers	3	3.5	Show consideration (SC)
Construction companies	3	3.5	Show consideration (SC)
Developers	3.5	3.5	Key player (KP)
Networks (interest groups)	4	4	Key player (KP)
Manufacturers NZEBR components	4	3	Meet their needs (MTN)
Manufacturers RES components	4	3.5	Key player (KP)
Rental / housing associations	3	3	Least important (LI)
Private home owners	3	3	Least important (LI)
Tenants interests groups	2	3	Least important (LI)
Municipal decision-makers (politicians)	4.5	3.5	Key player (KP)
Ministries	4.5	3.5	Key player (KP)
Research Organisations	2	3.5	Show consideration (SC)
Universities/Education	3	3.5	Show consideration (SC)
Media	4	3	Meet their needs (MTN)
EU-projects	3	4	Show consideration (SC)
Energy Service Companies (ESCOs)	1	1	Least important (LI)

The results from the assessment of the level of power and interest for NZEBR and RES of the Romanian stakeholder groups can also be seen in Figure 7.

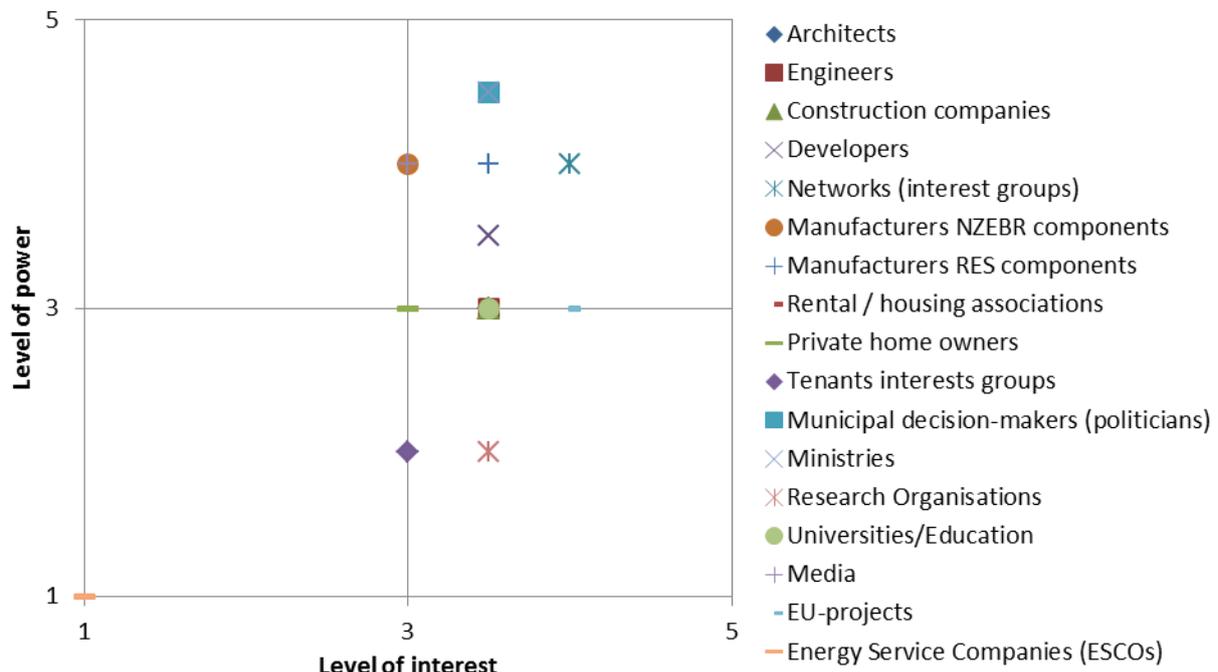


Figure 7 Power versus interest grid for NZEBR and RES of the stakeholder groups in Romania

### 7.3 Discussion

The first important players in Romania are the following target groups: developers, networks (professional/commercial), RES manufacturers, municipal decision-makers and ministries.

Developers are Key Players because they have to create the connection between capacity of the constructions companies and the needs of the customers. They can change the conception of both: cheap investment despite of the increase of annual costs. Due to the economic crisis, in many cases lately, the cheap solutions using low quality materials were chosen and the results were minimal.

Networks (professional/commercial) have a strong interest to promote their new and efficient products, they are in many cases international companies and for them it's necessary to work at the same level of quality everywhere they operate. They contribute for achieving pilot projects to demonstrate the viability and efficiency of the products/services.

The manufactures of RES components comes to meet the customer needs and they can contribute to increasing the level of acceptance of the RES utilization versus conventional fuels. It is a difference of importance between Electricity-RES and Heating-RES components taking into consideration the investment support scheme. Under the same group can entry the manufactures of NZEBR components because they have the same importance from NZEBR point of view, but they are not "encouraged" by any support scheme. These two last categories could be found in "networks" category, but with more power.

Up to now, the municipalities were the engine and main co-financier for developing the thermal renovation projects. The housing associations asked municipality for achieving thermal rehabilitation projects, the municipality approved and they began the preparation of these kinds of projects. There is a financial scheme for this kind of projects, according to the central/local decisions; the municipal financial support is by at least 50% of the total cost. There are several examples where the municipality is the only financier of the project. In this

situation, municipality is the project manager and it selects the work team (consultancy, construction company, entrepreneur, etc.).

The ministries, the main being Ministry for Regional Development and Public Authority, are responsible for aligning and implementing the national legislation according to the EU legislation, in fact Decision 2010/31/EU and Decision 2012/27/EU. They decide the way of development and the level of financial support.

The second important category which shows consideration from NZEBR point of view contains education, conception and execution process (research organizations, engineers, architects and construction companies). Both education and conception process are interested in the introduction of new NZEBR solutions and measures for increasing the building energy performance, but only a part of these measures are recognized as "necessary" by national legislation and the investment can benefit by a financial support (usually non-refundable funds).

Opposite to expectations, home owners, housing associations and tenants show the least consideration for NZEBR concept. They didn't have enough information about their benefits after NZEBR project. In this situation, the minimal thermal renovation works are selected taking into consideration the possibility of obtaining the financial support (non-refundable funds). Based on NeZeR project these target groups can change their conception and they could be at least "Show Consideration" from NZEBR interest point of view.

In the same category, ESCOs are found because their interest is in the smaller energy efficiency projects for 3-5 years.

## 8 DISCUSSION ALL COUNTRIES

Stakeholder analyses have been performed in Sweden, Finland, the Netherlands, Romania and Spain. The aim of the analyses is to identify important stakeholder groups in each country regarding the implementation of NZEBR and deployment of RES. Representatives from the identified most important stakeholder groups will be invited to the national NZEBR clusters that will be formed within NeZeR.

Many actors are identified as important stakeholder groups in all of the countries. The identified stakeholders are in line with the actors presented in Solar Cities (2008) and WBCSD (2008). Building owners are a key actors when it comes to NZEBR and deployment of RES. Financing may be achieved through own funding or through investors and banks. Authorities set the policies and regulation on a European, national and local level. Architects, consultants and construction companies execute the renovation projects. Products supplied by manufacturers of NZEBR and RES components are used in the projects. Tenants are end users of the buildings.

Some stakeholder groups were only identified in one of the countries, e.g. in the Netherlands the trade union groups were identified and in Finland a distinction was made between media, general papers and media, trade papers.

The main interests of the identified stakeholder groups were assessed in all countries. The assessments show similar results. For the building owners and the tenants it is important to have healthy, high value housing with low energy costs. The actors in the construction process are interested in business opportunities and to execute renovation projects as planned. The banks are interested in profitable investments. The main interests of the authorities are performance of the region/country and fulfilment of political goals. The results from this assessments provides valuable input for the planning of the workshops for the national clusters and also when developing the educational material for different target groups within the NeZeR project.

In all countries an assessment of the level of power and the level of interest for NZEBR was made for the identified stakeholder groups. The rating was made on a scale from 1- 5(1=very low, 2=low, 3=neither high nor low, 4=high, 5=very high). The rating should not be seen as an exact number but as a way to categorize the stakeholder groups for further communication activities. Based on the rating the stakeholder groups were categorized into four categories, Key Players, Meet Their Needs, Show Consideration and Least Important. The category Key Players has a high level of interest and a high level of power for NZEBR and RES, it is thus important to focus the effort on these stakeholders. The category Meet Their Needs has a high level of power but a low level of interest, the goal is to try to increase the level of interest among these stakeholders for NZEBR and RES. The category Show Consideration has a high level of interest for NZEBR but a low level of power. The stakeholders from Show Consideration may be involved in the project and should be kept informed. The category Least important has a low level of power and a low level of interest for NZEBR; they can be informed through general newsletters etc.

The identified Key Players are discussed more in detail in this section, see Table 11, but the interested reader may find a list of the categorization of all identified stakeholder groups in all countries in Appendix 1.

In all countries stakeholder groups representing authorities has been identified as Key Players, examples of such are ministries, agencies and decision makers at European/national and local levels. Manufacturers of NZEBR and RES components are also identified as Key Players in

all countries. Among the building owners, public building owners have been identified as Key Players in Sweden, Finland and in the Netherlands. In the Netherlands private building owners was identified as Key Players. In Romania and Spain no building owners was categorized as Key Players, due to a low level of interest for NZEBR. In Romania and Spain developers was categorized as Key Players. Construction companies were considered to belong to Key Players in Sweden, the Netherlands and in Spain. In Spain architects were also considered to be Key Players. Networks and interest groups were considered to be important in all countries. In Finland Public energy supply companies and media, trade papers were considered to be a Key Players for NZEBR and RES. In Spain research organisations, ESCOs and EU projects were considered to be Key Players. The end users tenants was only considered to be a Key player in Spain.

The assessment shows similarities between the participating countries but also some differences. The housing sector involves a lot of stakeholder groups and it is important to keep this in mind while establishing the national NZEBR clusters.

*Table 11 Identified Key Players regarding NZEBR and RES in the Netherlands, Finland, Sweden, Spain and Romania*

<b>Country</b>	<b>Stakeholder group</b>	<b>Power/Interest group</b>
Finland	Cities (own buildings)	Key player (KP)
Finland	Energy Supply Companies (owned by cities)	Key player (KP)
Finland	Governmental decision-makers (politicians)	Key player (KP)
Finland	Manufacturers NZEBR components	Key player (KP)
Finland	Manufacturers RES components	Key player (KP)
Finland	Media, trade papers	Key player (KP)
Finland	Ministries	Key player (KP)
Finland	Municipal authority and licensing authority	Key player (KP)
Finland	Rental / housing associations	Key player (KP)
Romania	Developers	Key player (KP)
Romania	Networks (interest groups)	Key player (KP)
Romania	Manufacturers RES components	Key player (KP)
Romania	Municipal decision-makers (politicians)	Key player (KP)
Romania	Ministries	Key player (KP)

Spain	Engineers (forerunners)	Key player (KP)
Spain	Construction companies(forerunners)	Key player (KP)
Spain	Developers (forerunners)	Key player (KP)
Spain	Architects (forerunners)	Key player (KP)
Spain	Manufacturers NZEBR components	Key player (KP)
Spain	Manufacturers RES components	Key player (KP)
Spain	Municipal decision-makers (politicians)	Key player (KP)
Spain	Regional decision-makers (politicians)	Key player (KP)
Spain	National Energy Agency	Key player (KP)
Spain	Research Organisations	Key player (KP)
Spain	Tenants	Key player (KP)
Spain	EU-projects	Key player (KP)
Spain	ESCO	Key player (KP)
Spain	Construction sector networks	Key player (KP)
Sweden	Municipal decision-makers (politicians)	Key player (KP)
Sweden	Political parties	Key player (KP)
Sweden	Construction companies	Key player (KP)
Sweden	Professional and industrial organizations and interest groups	Key player (KP)
Sweden	Manufacturers NZEBR and RES components	Key player (KP)
Sweden	Public building owners	Key player (KP)
Sweden	R&D projects, cooperation projects	Key player (KP)
The Netherlands	Social/public housing associations	Key player (KP)
The Netherlands	Private -owners of multi-family houses	Key player (KP)
The Netherlands	Private -owners of single family houses	Key player (KP)

The Netherlands	Owner associations	Key player (KP)
The Netherlands	Construction companies	Key player (KP)
The Netherlands	HVAC companies	Key player (KP)
The Netherlands	Maintenance companies	Key player (KP)
The Netherlands	Ministries	Key player (KP)
The Netherlands	Government agency	Key player (KP)

## 9 CONCLUSIONS

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### 9.1 Contribution to overall picture

The assessment shows similarities between the participating countries when it comes to identified Key Players among the stakeholder groups but also some differences. The housing sector involves a lot of stakeholder groups and it is important to keep this in mind while establishing the national NZEBR clusters to increase the impact nationally.

Within the NeZeR project national NZEBR clusters will be established in each country. The stakeholder analysis performed and presented in this report is the first step in the establishment of the clusters. The research organisations will together with their national partners collect contact information to people that they would like to invite to the national clusters. The focus will be to invite representatives from organisations belonging to the identified key Players. In addition to that representatives from other stakeholder groups will be invited.

### 9.2 Relation to the state-of-the-art and progress beyond it

The establishment of the national NZEBR clusters will increase the interest for NZEBR and RES in the participating countries and strengthen the impact of the NeZeR project. There is a large potential for NZEB renovation measures in Europe and the NeZeR project will promote these technologies and concepts. The stakeholder analysis presented in this deliverable presents important actors in the participating countries that will be invited to the national NZEBR clusters.

## 10 REFERENCES

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## 11 APPENDICES

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Further information is described in related background documents:

Appendix 1: List of identified stakeholder groups in all countries, included in this report

Appendix 2: WP5 Instructions Stakeholder analysis FINAL.docx (available to partners in the intranet).

Appendix 2: WP5 Stakeholder analysis\_FINAL\_UPDATED\_\_20140610.xlsx (available to partners in the intranet).

## 12 APPENDIX 1

List of identified stakeholder groups in all countries

Country	Stakeholder or target group	Power/interest group (KP, MTN, SC,LI)
Finland	Cities (own buildings)	Key player (KP)
Finland	Energy Supply Companies (owned by cities)	Key player (KP)
Finland	Governmental decision-makers (politicians)	Key player (KP)
Finland	Manufacturers NZEBR components	Key player (KP)
Finland	Manufacturers RES components	Key player (KP)
Finland	Media, trade papers	Key player (KP)
Finland	Ministries	Key player (KP)
Finland	Municipal authority and licensing authority	Key player (KP)
Finland	Rental / housing associations	Key player (KP)
Romania	Developers	Key player (KP)
Romania	Networks (interest groups)	Key player (KP)
Romania	Manufacturers RES components	Key player (KP)
Romania	Municipal decision-makers (politicians)	Key player (KP)
Romania	Ministries	Key player (KP)
Spain	Engineers (forerunners)	Key player (KP)
Spain	Construction companies(forerunners)	Key player (KP)
Spain	Developers (forerunners)	Key player (KP)
Spain	Architects (forerunners)	Key player (KP)
Spain	Manufacturers NZEBR components	Key player (KP)
Spain	Manufacturers RES components	Key player (KP)
Spain	Municipal decision-makers (politicians)	Key player (KP)
Spain	Regional decision-makers (politicians)	Key player (KP)
Spain	National Energy Agency	Key player (KP)
Spain	Research Organisations	Key player (KP)
Spain	Tenants	Key player (KP)
Spain	EU-projects	Key player (KP)
Spain	ESCO	Key player (KP)
Spain	Construction sector networks	Key player (KP)
Sweden	Municipal decision-makers (politicians)	Key player (KP)
Sweden	Political parties	Key player (KP)
Sweden	Construction companies	Key player (KP)

Sweden	Trade organizations, professional and industrial organizations, interest group (organizations)	Key player (KP)
Sweden	Manufacturers NZEBR and RES components	Key player (KP)
Sweden	Public building owners	Key player (KP)
Sweden	R&D projects, cooperation projects	Key player (KP)
The Netherlands	Social/public housing associations	Key player (KP)
The Netherlands	Private -owners of multi-family houses	Key player (KP)
The Netherlands	Private -owners of single family houses	Key player (KP)
The Netherlands	Owner associations	Key player (KP)
The Netherlands	Construction companies	Key player (KP)
The Netherlands	HVAC companies	Key player (KP)
The Netherlands	Maintenance companies	Key player (KP)
The Netherlands	Ministries	Key player (KP)
The Netherlands	Government agency	Key player (KP)
Finland	Architects (project planning, consulting)	Meet their needs (MTN)
Finland	Boards of the apartment houses	Meet their needs (MTN)
Finland	Private building owners (Private single house)	Meet their needs (MTN)
Finland	Private building owners (private, apartment)	Meet their needs (MTN)
Finland	Energy Supply Companies (others)	Meet their needs (MTN)
Finland	House managers	Meet their needs (MTN)
Finland	Investors and banks	Meet their needs (MTN)
Finland	Media, general papers	Meet their needs (MTN)
Finland	Municipal decision-makers (politicians)	Meet their needs (MTN)
Romania	Manufacturers NZEBR components	Meet their needs (MTN)
Romania	Media	Meet their needs (MTN)
Spain	Energy Companies	Meet their needs (MTN)
Spain	Standardization bodies	Meet their needs (MTN)
Spain	Investors and banks	Meet their needs (MTN)

Spain	Rental / housing associations (forerunners)	Meet their needs (MTN)
Spain	Private home owners (forerunners)	Meet their needs (MTN)
Spain	Private home owners (followers)	Meet their needs (MTN)
Spain	National Housing Agency	Meet their needs (MTN)
Spain	Media	Meet their needs (MTN)
Sweden	Swedish National Board of Housing	Meet their needs (MTN)
Sweden	Ministry of Health and Social Affairs	Meet their needs (MTN)
Sweden	Ministry of Enterprise	Meet their needs (MTN)
Sweden	Building owners listed on the stock exchange (owned by funds)	Meet their needs (MTN)
Sweden	Facility Management	Meet their needs (MTN)
Sweden	Energy Supply Companies	Meet their needs (MTN)
Sweden	Investors and banks	Meet their needs (MTN)
Sweden	Developers	Meet their needs (MTN)
Sweden	Consultants	Meet their needs (MTN)
Sweden	Architects	Meet their needs (MTN)
The Netherlands	Corporate rental housing	Meet their needs (MTN)
The Netherlands	Investors and banks	Meet their needs (MTN)
The Netherlands	Municipalities	Meet their needs (MTN)
The Netherlands	Regions/provinces	Meet their needs (MTN)
The Netherlands	Media	Meet their needs (MTN)
Finland	Private building owners (public and commercial)	Show consideration (SC)
Finland	ESCOs	Show consideration (SC)
Finland	Other organisations	Show

		consideration (SC)
Finland	Research Organisations	Show consideration (SC)
Finland	Universities/Education	Show consideration (SC)
Romania	Architects	Show consideration (SC)
Romania	Engineers	Show consideration (SC)
Romania	Construction companies	Show consideration (SC)
Romania	Research Organisations	Show consideration (SC)
Romania	Universities/Education	Show consideration (SC)
Romania	EU-projects	Show consideration (SC)
Spain	Engineers (followers)	Show consideration (SC)
Spain	Construction companies (followers)	Show consideration (SC)
Spain	Developers (followers)	Show consideration (SC)
Spain	Architects (followers)	Show consideration (SC)
Spain	National Products Networks (interest groups)	Show consideration (SC)
Spain	Tenants interests groups	Show consideration (SC)
Spain	Universities/Education	Show consideration (SC)
Sweden	National Energy Agency	Show consideration (SC)
Sweden	Municipal administration	Show consideration (SC)
Sweden	EU-projects	Show consideration (SC)
The Netherlands	Tenants	Show consideration (SC)
The Netherlands	Manufacturers components	Show consideration (SC)
The Netherlands	Energy service companies	Show consideration (SC)
The Netherlands	Networks of commercial parties	Show consideration (SC)

Finland	Architects	Least important (LI)
Finland	Architects (single building)	Least important (LI)
Finland	Construction companies (contract work)	Least important (LI)
Finland	Consultants	Least important (LI)
Finland	Developers	Least important (LI)
Finland	Facility Management	Least important (LI)
Finland	Planners (building services)	Least important (LI)
Finland	Planners (construction)	Least important (LI)
Romania	Rental / housing associations	Least important (LI)
Romania	Private home owners	Least important (LI)
Romania	Tenants interests groups	Least important (LI)
Romania	National Energy Agency	Least important (LI)
Romania	Energy Service Companies (ESCOs)	Least important (LI)
Spain	Facility Management	Least important (LI)
Spain	Rental / housing associations (followers)	Least important (LI)
Sweden	EU	Least important (LI)
Sweden	housing cooperative	Least important (LI)
Sweden	Private building owners	Least important (LI)
Sweden	Tenants	Least important (LI)
The Netherlands	Architects	Least important (LI)
The Netherlands	Engineers, consultants	Least important (LI)
The Netherlands	Trade union groups	Least important (LI)
The Netherlands	Research organisations	Least important (LI)

		(LI)
The Netherlands	Universities/education	Least important (LI)