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Research and Innovation Action

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Draft D6.1 – Stakeholders, actors and roles

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Primary Authors	Iliana Ilieva, Sanket Puranik
Contributors	SIN – Heidi Tuiskula, Håkon Duus UdG - Joaquim Melendez UPC - Francisco Diaz Gonzalez ICOM - Ilias Lamprinos EYPESA - Ramon Gallart
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Table of contents

Executive Summary

This deliverable gives initial insights to different stakeholders who are affected by RESOLVD outcomes or can affect the exploitation of the outcomes. Motivations, needs and interests of various stakeholders are analysed and based upon this they are mapped on a Power-Interest-Attitude (PIA) map. This mapping reveals behaviour of different stakeholder towards RESOLVD outcomes and helps in identifying sources of support and resistance. An important and direct outcome of this report are recommendations of stakeholders for creating stakeholder innovation group (SIG). This analysis is the first step towards exploitation and business plan to be developed under the umbrella of WP6. In the final version of this report additional stakeholder analysis map will be added and more in-depth assessment will be done using the two maps. Furthermore, individual engagement strategies will be identified for different types of stakeholders.

1. Introduction

1.1. Background

Freeman (1984)[1] in his classical work provides the definition of stakeholders in context of project management. In simple words stakeholders are "who and what really counts". For the RESOLVD project stakeholders are people and organizations who are affected by the innovations or can influence the impact of innovations on the society. Creating synergies with appropriate stakeholders and taking precautionary measures against those who are belligerent to outcomes can significantly determine impact generated by the project. Thus, performing a stakeholder analysis is necessary first step towards creating an effective business and exploitation plan. Stakeholder analysis is a powerful tool to identify synergies and sources of potential friction in the market.

This deliverable, *Draft D6.1 Stakeholders, actors and roles,* is the first out of the five deliverables targeted in WP6. The hereby provided report is a direct outcome of activities performed under T6.1. Outcomes from this work will be used in T6.3 and T7.2.

1.2. Objectives

The objectives of D6.1 are as follows:

− Reveal all the stakeholders that could be affected by the RESOLVD solution
− Understand the needs, desire and motivations of identified stakeholders
− Recommend crucial stakeholders to target for creation of stakeholder innovation group (SIG), as part of T7.2

To achieve maximum possible impact from the project outcomes and to create effective exploitation plan it is important to assess how innovations coming out of project impact various stakeholders. DSO are the main beneficiary of RESOLVD project but the solutions developed will also impact variety of other stakeholders. It is important to find out who all are affected and how. Some of the solutions can even be interesting for other stakeholders to invest in (most likely with some customization). And exploring such exploitation paths is important for creating impact as well as for successful market uptake of the solutions. The analysis should also support stakeholders beyond consortium, for example entrepreneurs, who would want to pick up project outcomes. The stakeholder analysis will also form part of the market review to be carried within T6.3.

1.3. Contributions of partners

Partner	Contribution
UPC, ICOM, EYPESA, UdG	Identified stakeholders from their respective business field and country

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[1] Freeman, R. E. 1984. Strategic management: A stakeholder approach. Boston: Pitman.

1.4. Report structure

The document is organised in the following sections:

- Section 2 provides the method used to achieve the objectives of the task. It briefly explains the theory behind stakeholder mapping.
- Section 3 shows results of stakeholder analysis and discussion on the results.
- Section 4 gives recommendations for the creation of stakeholder innovation group (SIG).
- Section 5 indicates future work which will be done under T6.1.

2. Method

2.1. Analysis method

This stakeholder analysis exploits a 5-stepped approach to effectively meet the objectives of T6.1 (Figure 1).

Figure 1: 5-stepped approach followed to achieve the objectives of T6.1

- Step 1: In the first step different stakeholders were identified and classified. Four classes of stakeholders were created: *users of solutions, technology related, regulatory/advisory* and *others*. Partners were asked to nominate different stakeholders from their region. These were then sorted into respective categories defined previously. A preliminary non-exhaustive list of stakeholders (partner countries) can be found in Annex 1. The stakeholder list will be maintained and updated throughout the project.
- Step 2: The various stakeholders identified are analysed based upon different mapping dimensions. The mapping dimensions are further discussed in Section 2.3.
- Step 3: Stakeholders are positioned onto the maps. The maps are explained in Section 2.3.
- Step 4: Based upon the proposed mapping, different stakeholder roles are evaluated and it is discussed how they can impact the project and how they will get influenced by it. Recommendations are provided for target stakeholders for creation of SIG.
- Step 5: Possible synergies and frictions are identified via maps and engagement strategy is created for different stakeholders.

Scope of this draft report is limited to Step 4, while Step 5 will be more extensively covered in the following deliverables of WP6. Stakeholder analysis will be a continuous process where movement of stakeholders in the market will be constantly monitored and the maps will be updated accordingly. The aim of T6.1 is to develop two maps and under the current draft report only one map is presented. The other map is work under progress and will be included in final report D6.2.

2.2. Mapping dimensions

To analyse different stakeholder three mapping dimensions are selected in this version of report based upon previous work of Wieczorek et al. (2014)[2]. Assessment of all the dimensions is

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[2] Wieczorek, A., de Vicente, J., Matti, C. (2014). Green skills for boosting transitions in water management. An Innovator Catalyst book of assignments. Climate-KIC, Ingenio, Vaersa

RESOLVD

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subjective and dependent upon the person to carry it. Therefore, it is important to note that all the dimensions are assessed qualitatively. As the market is a dynamic place the stakeholders' behaviour might change making maps evolve with time. A detailed understanding of mapping dimension for innovation projects like RESOLVD can be obtained from stakeholder analysis report (D3.2) of INVADE project which covers the same topic[3]. The theory behind the stakeholder mapping is derived from the previous work done in the INVADE project. Next in this section the three different mapping dimensions are explained briefly.

2.2.1. Power

Power is defined as capacity of a stakeholder to influence the impact of the project outcomes (i.e. innovations in this case). To assess power the following parameters should be checked:

- <u>Ability to affect the market penetration of an innovation:</u> this is qualitatively assessed through current market share and geographic presence of stakeholders.
- <u>Working capital and ability to mobilise capital</u>
- <u>Research and innovation capabilities</u>
- <u>Ability to influence the final design of the innovation</u>. For example, RESOLVD solution's main beneficiaries are DSOs and thus it should be designed to meet their expectations. DSOs have power as they can influence the design of RESOLVD solutions.

Having one or a combination of the above parameters brings in power element to a stakeholder and this dimension is assessed qualitatively as being present or absent.

2.2.2. Interest

This dimension reveals how interested a stakeholder is towards an innovation. The interest could be in adding innovation to their existing business portfolio or being end-user of the innovation or being allies in the market. Interest could also be developed if the stakeholder perceives innovation a threat to their business, in this case the stakeholder would like to keep close track on market developments of the innovation. At the early stage of innovation development, it is often difficult to assess the interest of a stakeholder. Therefore, the initial focus here is on understanding the motivation, needs and business strategies of the stakeholders. The interest dimension is qualitatively assessed as yes or no. Interest does not always mean support, as it would be clarified in the description of the attitude dimension (Section 2.2.4)

2.2.3. Attitude

Having interest in innovation does not mean the stakeholder will provide market push to it. Many stakeholders have keen interest in activities of their competitors and try to block competing products/processes/services or try to ahead of competitors. Such stakeholders will have negative attitude towards the innovations. Attitude is therefore dependent on the way an innovation affects the existing business models of stakeholders. Attitude is also related to the nature of a stakeholder. For example, if a stakeholder has a conservative approach to the electricity sector, then such stakeholder is likely to resist an innovation which disrupts the sector and would have a negative attitude. Conservative DSOs are typical examples of such stakeholders. Attitude is qualitatively assessed as positive, negative or neutral.

2.3. Maps

The combination of different dimensions creates different typologies. Based upon these typologies the behaviour of different stakeholders can be predicted. This provides important insights on which stakeholders should be targeted for the SIG and has importance for the exploitation strategy. Figure shows power-interest-attitude (PIA) map with its different typologies. A brief comment to each typology is then provided. For more detailed description of the typologies we refer to the previously referenced INVADE deliverable D3.2.

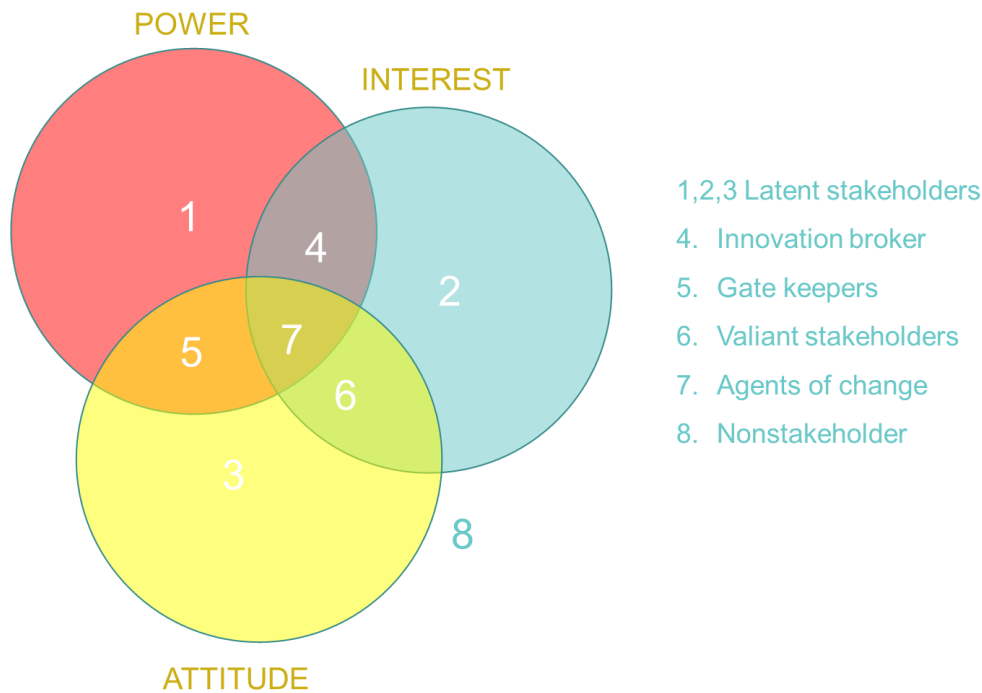[3] The report can be found here: http://h2020invade.eu/deliverables/

Figure 2: Power-Interest-Attitude map of stakeholders

− Latent stakeholders: Stakeholders possessing single dimension are latent ones. Such stakeholders need support from stakeholders having a different dimension or should acquire another dimension to actively influence market development of the innovation. Most common example of latent stakeholders are the national and local governments, who only have power dimension.

− Innovation brokers: These stakeholders have power and are interested in what the innovation has to offer. Usually they are not sure how the innovation will impact their business and thus lack attitude towards it. They act as innovation brokers and promote the innovation, e.g., through initial case studies and pilots, to test the potential of it. An example of such a stakeholder would be an open and forward-looking DSO which wants to innovate.

− Gate keepers: Stakeholders having power and attitude fall into this category. Such stakeholders will either block or allow the innovation to get into the market where they have power. If a gate keeper has positive attitude towards the innovation then it is likely to facilitate its market entry. While if a gate keeper has a negative attitude, it is going to block the market entry. Conservative DSOs would be a typical example of gate keepers which could have negative attitude. Negative attitude can also result if a stakeholder perceives innovation as a threat to their existing business. A positive attitude will result when a stakeholder having power sees benefit to their existing business by having the innovation in the market. Stakeholders having power, positive attitude, and no interest would not want to adopt the innovation itself but would rather derive complimentary benefit if the innovation is taken up by the market.

− Valiant stakeholders: Stakeholders having attitude and interest are termed valiant as they usually tend to explore new markets thereby affecting success of innovation in positive or negative way. If they have negative attitude they will try to slow down the market uptake of innovation. And if they have positive attitude they could be symbiotic allies in the market. As valiant stakeholders lack power they cannot block market penetration and growth of an innovation.

− Agents of change: If a stakeholder has power, positive attitude and interest towards the innovation then it is agent of change. Such stakeholders are prime targets for exploitation activities of the innovation. Targeting such stakeholder earlier for exploitation is critical to the success of the innovation.

Mapping various stakeholders on PIA map provides insights to how a stakeholder would react to the innovation. With such insights potential avenues of synergies and threats can be identified and such information will be used to shape exploitation activities of the project. In particular, this mapping will provide inputs to target appropriate set of stakeholders for creating stakeholder innovation group (SIG). It should be noted that the stakeholder's behaviour is likely to change over time and periodic updates to the maps are required to plan effective exploitation activities.

3. Results and discussion

3.1. Stakeholder classes and their motivations

Following Step 1 from Section 2.1 Analysis method, RESOLVD stakeholders have been classified (Figure 3). This is the first step towards deeper assessment of different stakeholders. Stakeholder analysis should expose maximum possible avenues to create business from the outcomes of the project. To achieve this, we try to assess all the possible stakeholders which can be impacted by the RESOLVD solutions. The envisioned stakeholder classes provide high level understanding which further assist in understanding the motivation of each stakeholder. As seen *Users of solutions* and *Technology providers* are the stakeholders receiving direct benefits from the innovations coming out of RESOLVD project and rest are benefited indirectly. This helps in mapping interest and attitude dimension of the stakeholder.

Users of solutions	Technology providers	Regulatory/advisory	Others
• DSOs • BRPs • Aggregators • Retailers • ESCOs • Energy communities • Neighborhood managers • EV operators • Parking lot owners • Charging stations • Industries • Commercial buildings	• Hardware suppliers • Battery manufacturers / suppliers • Software developers • IoT suppliers • Communication companies	• European commission • Governments • Municipalities • Policy makers / standardization bodies • Associations in energy sector	• Research institutes • RESOLVD pilots • Prosumers (residential)

Figure 3: Classes of stakeholders

The motivations for different stakeholders to exhibit interest in the innovation coming out of the project is provided in

Table 1. The Narratives column describes the foreseen motivations in more detail. The indication of motivation and narratives is a result of collaborative efforts together with technological experts from UPC and UdG. Four key elements of the RESOLVD solution are considered when explaining the motivation of stakeholders: wide area monitoring system (WAMS), platform (P), Power electronic device (PED) and decision support toolkit (DST). For detailed understanding of the technologies being developed and their functions readers are referred to deliverable 1.1 (D1.1). D1.1 also provides explanation on the business of different stakeholders mentioned in Table 1. Motivations of DSOs are covered very broadly here as the focus of this report is exploring overall business opportunities for the RESOLVD outcomes. Important question answered here is which technological outcomes of RESOLVD project can be of interest to various identified stakeholders and why. This exploration exercise is important to achieve maximum possible impact from the project. DSO related technical specifications of motivation and the associated narratives are covered by RESOLVD's D1.1.

Table 1: Stakeholders and their motivations towards RESOLVD outcomes.

Generic stakeholder types	Stakeholders	Relevant technologies	Motivation	Narrative
Users / beneficiaries of the RESOLVD solutions	DSOs	All	• High resolution grid monitoring • Better grid management/reliability	*In-detail described in D1.1*
	TSOs	WAMS	• Better grid management/reliability	Using WAMS designed in this project, TSOs can get high- resolution information about the grid.
	BRPs	WAMS, PED	• Minimise imbalances	BRPs can get better understanding of their resources and plan their resources better with WAMS and PED.
	Aggregators	PED	• Utilise on flexibility	With the advance PED aggregators can better manage their resources (especially if they have storage).
	Retailers	DST, P	• Better information for making electricity trading decisions • New tariff possibilities	DST could provide retailers with improved forecasts of both generation and demand, thereby enabling them to trade better. The data analytics related to demand and generation forecasts could be important for retailers.
	Energy service company (ESCO)	PED, DST, P	• Making better investment decision (like where they should invest in what measure/technology, etc.) • Increased customer interest for investment in local storage/local generation	ESCO provides broad range of energy solutions including designs and implementation of energy savings projects, retrofitting, energy conservation, energy infrastructure outsourcing, power generation and energy supply, and risk management. PED will allow ESCOs to provide flexibility and increases the quality of services they offer. Benefits of P to ESCO is indirect and need to be investigated further.
	Local energy producers	DST, PED	• Improved integration of renewable energy - increased profitability	Investing in PED with a battery will allow more efficient planning and management of local generation resources. With energy generation forecasts such stakeholders can make more accurate bids in the market with better predictions. Such technologies also allow better optimization of generation.

Energy communities	PED, DST, P	• Increase consumption from local energy resources • Improved grid reliability • Economic benefits from flexibility • Possibly lower electricity price/grid tariff	Relevant technologies enable communities to better manage their local resources, both generation and demand. Such technologies provide information on when to activate flexibility. Direct benefit comes from being able to provide flexibility. Indirect benefit is associated reduced electricity tariff as the resources would be used more efficiently.
Neighbourhood managers	DST, P	• Attractiveness through green profiling and innovative energy solutions • Possibility to trade energy flexibility assets	DST and P can open possibilities for neighbourhood managers to provide flexibility.
Construction enterprises	PED, DST, P	• Better planning of new buildings/ neighbourhoods • Attractiveness through green profiling and innovative energy solutions	There are two aspects: •During construction process such companies rely on fossil fuel generators. Use of such generators can be reduced using better planning (possible via DST & P). And assets can be monitored better with PED. PED also opens for usage of battery for construction operations. • They can build buildings/neighbourhoods which are integrated with PED and DST, enabling them to become more green and efficient
EV operators	DST	• Increased opportunities for providing flexibility available from EVs	Better scheduling of charging /discharging of EVs (V2G)
Parking lot owners (or charging station owners)	DST	• Better management of flexibility available from EVs	Same as above. The parking owners can actively manage their parking spaces. Indirectly they can get benefitted by cheaper electricity rates.
Prosumers	NA	• Higher integration of self-generated electricity • Better information for making decision on investments in renewables • Possibly lower electricity price/grid tariff	Prosumers are not going to invest directly into these solutions but they will benefit indirectly from such solutions when integrated into existing grid.

	Industries / commercial buildings	PED, DST, P	• Higher integration of self-generated electricity • Better information for making decision on: investments in renewables, and demand response activities. • Efficient management of facilities - reduced electricity costs •Green profiling	• Dependent on the size • Similar narrative to communities
Technology-related	Hardware suppliers	PED, WAMS	• Capitalise on new technologies coming out of RESOLVD • New and advanced technologies in their portfolio	Motivation self-explanatory
	Battery manufacturers/ supplier	PED	• RESOLVD solutions will be a market facilitator for different batteries to realise their potential in the future energy system; Significantly increased market size.	Motivation self-explanatory
	Software companies/data analytics firms	WAMS, DST, P	• New/improved software products; • More market opportunities (they can also be threat to the RESOLVD platform)	Motivation self-explanatory
	Communication companies	WAMS, P	• Capitalise on new technologies coming out of RESOLVD • New market opportunity	Motivation self-explanatory
	IoT suppliers	NA	• Increase market size	Ability to sell flexibility will increase demand for IoT equipment. And more IoT means higher sources of flexibility.
Regulatory / advisory	European Commission	NA	• Achieving the climate goals/reducing carbon footprint • Reduce dependency on fossil fuels	These stakeholders have no direct benefits and their main motivation is indirect - like brand image, fulfilment of commitment.

	Governments	NA	• Green profile • Contribute to climate goals; decrease dependency on fossil fuels	
	Municipalities	NA	• Getting attention/becoming role model for others on being sustainable	
	Policy makers / Standardization bodies	NA	• Getting insights to new technologies for management of the local grid	
	Associations in the energy sector	NA	• Spread out of RESOLVD solution to improve monitoring and grid efficiency	
Others	Research institutions	NA	• Know state-of-the-art of grid management systems • Bring further the research in the respective field	Motivation self-explanatory
	RESOLVD pilots	NA	(Categorised as users/beneficiaries)	Same as energy communities

3.2. RESOLVD Stakeholder map

The stakeholders presented in Table 1 have been mapped according to the theoretical approach provided earlier in Figure 2. The result of this mapping is shown in Figure 4. The stakeholders have been grouped according to the indicated typologies. *Agents of change* are the stakeholders who have all the three attributes and should be primary target for exploitation activities.
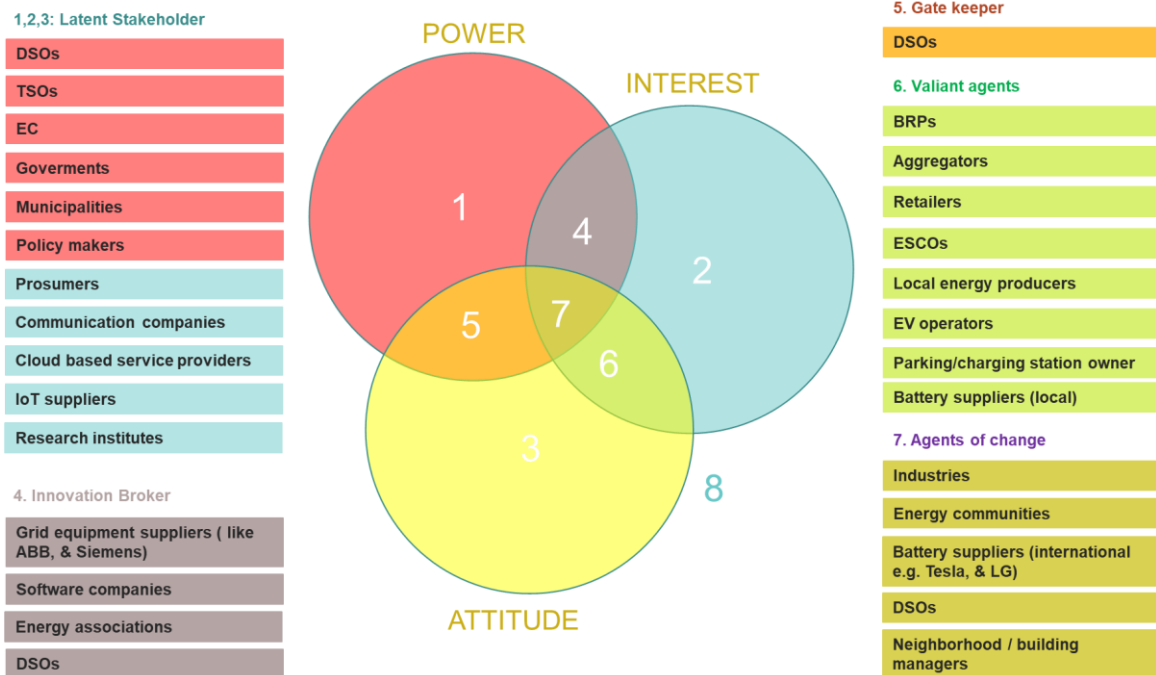
Figure 4: Power-Interest-Attitude map of stakeholders

Based on the provided mapping of RESOLVD stakeholders, some important issues are discussed below.

DSOs can fall into 4 typologies depending upon how open they are to innovation. DSOs are local monopolies in most of the European countries. Thus, they naturally have element of power with them. Latent DSOs are those who do not have any urgency and therefore no interest in investing in new technologies.

DSOs who are looking for upgrading their infrastructure can be open to innovation but might not be convinced of its effectiveness. Such DSOs will have interest in the innovation but no attitude making them *innovation broker*. For such DSOs attitude develops when they see benefits from the innovation for their business. They would only adopt an innovation when its potential is proved. Being innovation broker, they are likely to facilitate novel solutions thus providing more opportunities for innovation to grow.

Certain DSOs can also be conservative in their way of doing business. Such stakeholders would want to expand/upgrade their infrastructure in traditional way thereby following business as usual strategy. Such DSOs would have negative attitude towards the innovation as they see innovations as potential threat to their existing business. Conservative DSOs are thus likely to behave as gatekeepers and block the entry of innovation in the region they operate. Only conservative DSOs, out of all identified stakeholders, have motives to block the innovations coming from the RESOLVD project.

DSOs who are open to innovation and are investing in new innovations and businesses are likely to have positive attitude and interest in the project. Such DSOs understand the need of changing existing regime and are motivated to bring the change. These DSOs are *agents of change* and would be welcoming RESOLVD innovations. This type of DSOs should be a primary target for exploitation activities. Some examples of open to innovation DSOs are: EON, Iberdrola, and ENECO.

Stakeholders having only one of the attributes belong to the *latent stakeholder* category. No stakeholders with only attitude dimension have been identified. Municipalities, governments, policy makers and EC are stakeholders who have attribute of power only. It is likely that

13

municipalities and government bodies which see that their environmental goals can be met with RESOLVD technologies develop a positive attitude. It is thus important for exploitation activities to generate positive attitude in the stakeholders having power as these would then facilitate market entry of the RESOLVD innovations. Further several latent stakeholders having different dimensions can join forces to attain more dynamism.

Stakeholders having only interest, like prosumers and IoT suppliers, need support from powerful stakeholders to harvest benefits from the innovation. Software developers are likely to have interest and positive attitude towards the software solutions coming out of RESOLVD. However, if such companies make strategic decisions to not venture into the energy sector they would not be stakeholders.

Grid equipment manufacturers are likely to see new technologies as new business opportunities and could be early stakeholders providing RESOLVD solutions. At the same time, they would be competitors to industry partners in the consortium who are in same business line.

Furthermore, there are many valiant stakeholders who are likely to benefit from the RESOLVD innovations and thus would have interest and positive attitude. Battery manufacturers/suppliers are likely to benefit from the project innovations. Storage is an important component of the future smart grid and RESOLVD targets (among other RESOLVD ambitions) at developing an intelligent battery management system. Thus, battery manufacturers and suppliers are going to have interest and positive attitude towards the project's innovation. They are likely to be promoters of the innovation and market the outcomes which facilitate their business. They may also wish to invest in innovations that improve their batteries and make them better fit for services offered through the RESOLVD solution. Battery manufacturers and suppliers are valiant stakeholders who will act as promoters. Having such stakeholders in SIG would provide push for RESOLVD innovation to enter the market. Keeping such stakeholders informed about developments of RESOLVD innovation should form important task of exploitation activities.

Some big companies (like Tesla and LG because of their market share, ability to mobilise capital and research and innovation capabilities) also have power attribute. Such stakeholders become *agents of change* and should thus be primary target of exploitation activities.

Industries consume substantial amount of energy and sometimes even have their own power production units. Such stakeholders are usually very quick to adopt new technologies which would bring them monetary benefits. Industries can thus become early adopters of RESOLVD outcomes.

4. Recommendations

More the dimensions present in a stakeholder more salience it has and more important it becomes for the project to generate its impact. In general, the exploitation activities should target high salience stakeholders. More effort as well should be dedicated to influence high salience stakeholders. Exploitation activities should also connect various latent stakeholders having different dimensions. This creates fertile ground for RESOLVD innovation to enter the market. Furthermore, strategies to protect RESOLVD innovation should be developed from potential competitors and stakeholders having negative attitude. Focus of this report is on providing recommendations for targeting SIG members, which is covered next.

4.1. Recommendation for SIG

The recommendation for SIG is provided considering the stakeholders which can take the RESOLVD solution to the market and further expand the market size, thereby creating maximum impact. There are no quantitative methods to rank and select the most effective stakeholders. The selection is rather qualitative based upon the understanding developed from the stakeholder maps. All the stakeholders will play one role or another for the market success of the innovations and the ones not selected for the SIG should not be ignored. However, limited number of stakeholders are prioritized for the SIG so that they can be managed within the resources available within the project.

From the stakeholder map it is clear that the primary target for the SIG creation should be the stakeholders defined as *agents of change*. These include industries, energy communities, global battery suppliers, building/neighbourhood managers and innovative DSOs. Such stakeholders are typically quick in adopting and promoting innovations. Support from them would bring more attention from other stakeholders.

Next target should be innovation brokers as these are the ones who have both power and interest. Acceptance by such stakeholders will further propagate the innovations in the market. In the early phase of innovation life cycle, it is important to get support from stakeholders having power. This will facilitate market push for the innovation.

Valiant stakeholders are valuable to have in the SIG as they are one of the beneficiaries of innovations. Feedbacks are required from them regarding research and innovation outcomes. It is important to keep track of their needs, business strategy and desires in the future energy system. Their feedback is crucial for refining the innovations in timely fashion and would result in more acceptable outcomes.

Each partner of RESOLVD project provided information on different types of stakeholders present in their respective countries. The inputs from the partners are listed in Annex 1. Based upon analysis done before, the non-exhaustive list in Annex 1 was narrowed down. Table 2 provides a list of primary target stakeholders. It is recommended that SIG should be a mix of the following stakeholder types: agents of change, innovation brokers and valiant stakeholders. The proportion of each typology should be high to low in the same order. The priority countries for exploitation are the ones where partners are located. Thus, the target stakeholders are mix from respective partner countries and multi-national companies.

Table 2: Primary SIG target stakeholders

Stakeholder type	Recommendation	Country
DSOs	Agder Energi	NO
	Lyse elnett	NO
	Iberdrola	ES
	Endesa	ES
	UF-GN	ES
	Bassols energia	ES
	AGRI Energia	ES
	PEUSA	ES
	Norgesnett	NO
Energy communities	Hafslund	NO
	Hvaler	NO
	Fortum	N/A
ESCOs	Smart Energi	NO
	Wattabit	ES
	WALQA	ES
	GEODE	ES
	ENTSO-E	ES
	SEDC	EU
Energy association	EUROBAT	EU
	EERA JP Smartgrids	EU
	CEDEC	EU
	EDSO	EU

MNC grid equipment supplier	ABB	N/A
	Siemens	N/A
	Schneider-electric	NO
	Ormazabal	ES
	CIRCUTOR	ES
	GE	ES
	Alstom	N/A
Battery Manufacturers	LG	N/A
	Tesla	N/A
	Samsung	N/A
	Panasonic	N/A
	Mitsubishi	N/A
	SONEN	ED
	Batteriretur	NO
Municipalities	Local from each pilot sites	N/A
EV charging station operator	Fortum	N/A
	emobility	ES
Energy Agencies	ICAEN	ES
Cloud Based Service Providers	DEXMA	ES

5. Future work

Future work will finalise the stakeholder analysis and the related description of actors and roles. Additional elements (legitimacy and urgency) will be added to the proposed theoretical approach and stakeholders will be analysed through a power-urgency-legitimacy map. This will help identifying imminent stakeholders for the wider spectre of exploitation activities to be carried in RESOLVD. The different mapping approaches will jointly contribute to the coherent build-up of stakeholder engagement strategy. Recommendations will be provided to shield the innovation from adverse market players. The stakeholder motivation table will be maintained and will be streamlined as the project develops further. Furthermore, the foreseen in T6.1 future work will ensure alignment of business motivation with D1.1 high level use cases. All these aspects will be well described in D6.2 Stakeholder, actors and roles, Final version.

6. Acronyms and abbreviations

Abbreviation	Description
SIG	Stakeholder innovation group
WP	Work package
WAMS	Wide area monitoring system
P	Platform
PED	Power electronic device
DST	Decision support toolkit
MNC	Multi-national company

Annexes

Annex 1: Non-exhaustive list of stakeholders

Stakeholder types	Norway	Spain	Greece	Multinationals
DSO	Norges Nett, Hafslund, NTE, BKK, Agder Energi, Lyse elnett	Iberdrola, Endesa, UF-GN, Bassols Energia, LERSA, PEUSA, AGRI Energy, Electra Caldense, Aduriz	HEDNO	EON, Vattenfall, Eneco, RWE
Grid equipment suppliers	Schneider Electric, Wago, Energea, POWUnit	Ormazabal, MESSA	mainly multinationals	ABB, Siemens, GE, Schneider Electric, Alstom
Battery manufacturers/supplier	Batteriretur	SAFT, VARTA,	*To be identified*	Panasonic, Sanyo, Tesla, Nissan
Platform/software developers	Agder Energi, ENFO, Udevelop, TinyMesh, eSmart	*To be identified*	-	Google, Microsoft
Communication companies	Telenor, IPCO, COM4, TinyMesh	Orange, Emagina	OTE, Wind, Vodafone (all these are telco operators)	Huawei, Ericsson, AT&T
Data analytics firms	eSmart, Udevelop	Dexma, BeeData	N/A	Amazon, Microsoft, Google
Hardware/power electronic suppliers	Nxtech	teknoCEA, Eaton, Cirprotec	N/A	Samsung, Foxconn, IBM, Intel, Hitachi, Qualcomm
Cloud based service providers	TinyMesh	Atlantic.net, Rackspace, GoDaddy, Vnware, Verizon cloud, Red Hat	Intracom Telecom and several other regional companies	Amazon, Microsoft, Google, Huawei, IBM, Intel, Oracle

Local energy producers	Østfold Energi, Fredrikstad Energi, Lyse	EYPESA	6 officially registered companies (the full list is available here: http://www.lagie.gr/en/market/registar/participants-registry-das/producers/producers-in-register/	N/A
Energy service company	Smart Energi, Fortum	Viesgo Solara, Inergy, Wattabit, Dexma, Walqa	56 officially registered companies (the full list is available here: http://www.escoregistry.gr/epixeiriseis_mitrwou_eey_170203_1349.xls	N/A
TSO	Statnett	Red Electrica de España	IPTO	N/A
Aggregators	Agder Energi, Smartly, Entelios, ENFO, Statkraft, LOS	*Not identified yet*	N/A	Senfal, Jedlix, Kiwigrid
Retailers	Fortum	Mercator, Hola Luz, CIDE Hcnergia S.A., Nexus Renovables, S.L, SOM Energía S.C.C.L.	32 officially registered companies (the full list is available here: http://www.lagie.gr/en/market/registar/participants-registry-das/suppliers/suppliers-in-register/	Fortum, EON, Vattenfall, EDF
Energy communities	Hvaler	*Not identified yet*	Not yet available, but the legislation is about to change so as to support the setup of energy communities	N/A
Construction enterprises	Arca Nova	*To be identified*	*To be identified*	*To be identified*
EV operators /charging service	*To be identified*	*To be identified*	*To be identified*	Fortum, Greenflux

Storage owner/storage enterprise	Batteriretur	*To be identified*	*To be identified*	*To be identified*
Associations in energy sector	Norsk solenergiforening GEODE, ENTSO-E, EURELECTRIC, Hellenic Association of Independent Power Producers	EURELECTRIC, CIRED	•Hellenic Association of Independent Power Producers (http://haipp.gr/en/) •Hellenic Association of Photovoltaic Companies (www.helapco.gr)and many others	GEODE, ENTSO-E, SEDC, EUROBAT, CEDEC, EDSO
IoT suppliers	Smartly, Entelios, ENFO	Wattabit	Very broad scope. Both multinationals and regional companies	Google, Amazon, AT&T, Bosch, Cisco, IBM, Intel, Oracle
Policy makers/Standardization bodies	*To be identified*	Bridge H2020, IEC, CENELEC	RAE (www.rae.gr)	*To be identified*
Others	*To be identified*	Innoenergy	*To be identified*	*To be identified*