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Deliverable D4.2 Recommended Innovation & Best Practice Stakeholder Engagement

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Executive Summary:

The objective of this report is to inform about the existing research methodologies available for measuring stakeholder perception of renewable development, for the Eirwind team to glean an understanding of stakeholder perceptions of offshore wind development scenarios. The role that stakeholder perception plays in the success or failure of renewable energy developments, and more specifically wind energy developments, is reported on. This review also reports on what is considered best practice for stakeholder engagement from both an international and, more specifically, an Irish context.

Stakeholder identification, analysis and mapping are essential elements which must be considered in order to ensure effective stakeholder engagement with respect to renewable energy development. Environmental development has far reaching effects on many different sections of society; practically, economically and emotionally. This 'wicked' problem is such that it is impossible to please all of the people all of the time and hence a best solution must be attained.

A plethora of techniques exist for identification, analysis, engagement and participation, together with countless reasons for objections against, and arguments for, the development of sustainable energy projects. Understanding what influences public perception is key to learning what triggers can be used in order to change public perception and behaviour. Effective stakeholder participation and engagement must include timely access to clear and relevant information, highly skilled facilitation and trusted intermediaries. Factors which can enhance relationships between stakeholders and developers, and hence aid acceptance of any potential development, include community benefits, two-way deliberative learning and transparency and fairness of process. Specific participation techniques will each have different outcomes and relevance to each group involved, but common to all techniques is the importance of trust and fairness in process.

The most important aspects of best practice for stakeholder participation are reported on with a comprehensive list of participatory methods being collated from current research. Examples of success and failures of stakeholder participation and engagement are drawn on to examine Ireland's track record with renewable energy development. This paper examines the changing rationales and philosophies behind the varying levels of stakeholder engagement.

The report concludes that the Eirwind project is in a position to learn from countries which are the forerunners in offshore renewable energy development. We can look to Germany and the U.K. who have made the greatest advances in the area of offshore renewable energy development, and learn from their experience, in order to develop our industry with a social licence to operate. This, together with the experience and expertise of the Eirwind consortium, provides a template for best practice, described herein.

List of Abbreviations

CDA	Confidential Disclosure Agreement
EU	European Union
FLOWW	Fishing Liaison and Offshore Wet Renewables Group
Km	Kilometres
LCOE	Levelised Cost of Energy
m	Metres
MAFA	Maritime Area and Foreshore Bill (Amendment)
MUSES	Multi Use in European Seas
MW	Megawatt
NW	North West
O&M	Operation and Maintenance
OREDP	Offshore Renewable Energy Development Plan
OSWF	Offshore Wind Farm
RES	Renewable Energy Source
SEAI	Sustainable Energy Authority of Ireland
TER	Total Energy Requirement
UK	United Kingdom
WP	Work Package

Contents

1. Introduction

1.1 Introduction

Although the concept of renewable energy is considered to be well received on a global level (Waldo, 2012; Wolsink, 2007; Wustenhagen et al., 2007) there is evidence that offshore renewable developments regularly face difficulties at a local level, particularly in terms of social acceptance and/or governmental and planning issues (Firestone et al., 2012; Reed, 2008; Toke et al., 2008). In Ireland, many offshore wind developers report these difficulties (Lange et al., 2018; Brennan and Van Rensburg, 2016; Reilly et al., 2016), with both development of policy and implementation of licencing laws in Ireland being considered fragmented and disjointed (Lange et al., 2018). This lack of cohesion has frustrated potential renewable energy developments (Ibid) and has, in many cases led to conflicts between local pressure groups and developers (Reilly et al., 2016; Warren et al., 2005).

Environmental resource management problems pertaining to renewable energy can be referred to as 'wicked' problems (Jentoft and Chuenpagdee, 2009). Because each wicked problem can be seen from different rationalities, there can be no universally correct plan of action or comprehensive blueprint to definitively conclude in satisfaction for all parties concerned (Hartmann, 2012). Rittel and Webber, (1973) described ten characteristics of a wicked problem which sets it apart from a 'tame' or definitively solvable one (Jentoft and Chuenpagdee, 2009):

1. There is no conclusive definition of a wicked problem.
2. There is no definitive conclusion to a wicked problem.
3. There can only be 'good enough' solution to a wicked problem.
4. It is impossible to assess immediately if the solution works.
5. Solutions cannot be tested and retried, any solution has significant repercussions.
6. It is impossible to definitively confirm that all potential solutions have been considered.
7. Every wicked problem is unique.
8. Every wicked problem can be thought of as a result of another problem.
9. The reason for the need for a solution to a wicked problem has many manifestations. How it is described will affect its resolution.
10. The planner has no right to wrong – the solutions which are settled will affect a large community.

Each of these criteria can be applied to the challenges of environmental development and stakeholder engagement (Dentoni et al., 2018; Hartmann, 2012). The complexity of the renewable energy debate is illustrated by Warren et al., (2005) who shows that although renewable energy is considered an environmentally friendly energy source, environmentalists' arguments against renewable energy projects assert that the socio-economic benefits of renewable energy projects are at the cost of the aesthetics of the local surrounds (Waldo, 2012; Devine-Wright and Howes, 2010; Ladenburg, 2010;) or animal welfare (Ladenburg, 2010; Wolsink, 2000). However the same environmentalists are

supporters of renewable clean energy, championing the causes for renewable energy development (Warren et al., 2005).

The objective of this literature review is to inform about the existing research methodologies available for stakeholder perception of renewable development in order that the Eirwind project may glean understanding of stakeholder perceptions of offshore wind development scenarios. The work that has been completed most recently on stakeholder perception of renewable energy development and the role it plays in the success or failure of renewable energy developments will be summarised. Furthermore, this literature review will report on what is considered best practice for stakeholder engagement from both an international and, more specifically, an Irish context.

2.1. Stakeholder identification

Before the process of identifying stakeholders can begin, there must be a clear understanding of exactly what issue is under question (Reed, 2008; Glicken, 2000;), only then can the relevant stakeholders begin to be identified. Haggett (2011) highlights the difficulties in defining the physical boundaries of those affected by environmental projects, especially in the case of offshore wind farm developments, asking the question, should everyone who can see the wind farm be included as a stakeholder or just those who use the area in which the development is proposed? This can be addressed by including analysis of social effects in the scope of an environmental impact assessment which can be a good starting point for discourse with stakeholders (Sorensen et al., 2002). Reed et al. (2009) recognise that it is often impractical to include absolutely all stakeholders and at some point a line must be drawn in order to move on with the actual process of engagement or consultation. The exclusion of some crucial groups may lead to future objections as a result of their lack of inclusion (Glicken, 2000). The key is to find the most representative stakeholders that time and resources will allow (Luyet et al., 2012).

Stakeholder identification is an iterative process

To ensure all relevant and interested parties are included, stakeholders can be identified in a number of ways such as:

- Public meetings (Reilly et al., 2016; Glicken, 2000)
- Self-identification (Reed et al., 2009)
- Snowball sampling (King et al., 1998) - Initial brainstormed stakeholders are interviewed in order to identify new stakeholders
- Radical transactiveness - Snowball sampling to identify fringe stakeholders (Reed et al., 2009)
- Engagement with local government, local organisations and groups (Klain et al., 2017)

Each of these methods can be revisited a number of times or combined with each other in order to include additional stakeholders as they are identified. The iterative process ensures

that the risk of omitting certain stakeholders is minimised (Reed, 2008; Bryson, 2004). Stakeholders can also be identified using informal and unstructured methods (Reed et al., 2009) but this may introduce bias at the later stages of the project (Schumacher et al., 2018; Luyet et al., 2012; ibid). Glicken (2000) highlights the importance of using geography, local politics and history to find potential stakeholders. Ritchie and Ellis, (2010) differentiate between public, private, voluntary and academic sectors when considering inclusion of stakeholders. The technique of identification used will depend on the project context, resources and timeframe available (Luyet et al., 2012). Similarly each process used to identify stakeholders will yield different results (Glicken, 2000).

2.2. Stakeholder analysis and mapping

Stakeholder analysis and mapping organises stakeholders by relative power, influence and interest in a project. The importance of each stakeholder to the success of the project can then be assessed (Aligica, 2006; Brugha and Varvasovszky, 2000). Stakeholders can also be categorised into those affected by (passive) or who can affect (active) the project (Grimble and Wellard, 1997). Analysis allows the identification of likely alliances within the stakeholder group (Aligica, 2006) and how those alliances could influence the outcome of the project (Brugha and Varvasovszky, 2000). Potential conflicts between stakeholder groups along with trade-offs they are willing to make are also significant factors to be taken into account and which can be studied using stakeholder analysis (Grimble and Wellard, 1997). Reed et al., (2009) reviewed four techniques for stakeholder analysis which can be used individually or together to analyse identified stakeholders.

Interest-Influence matrices: Stakeholders can be viewed in term of interest in and influence over the project.

Actor-linkage matrices: Stakeholders are listed in a matrix with keys words used to define the relationship between them, e.g. Conflict, Complimentary, Cooperation.

Social Network Analysis: Numbers are used in this matrix to represent a relationship between stakeholders and the strength of that relationship.

Knowledge Mapping: When used in conjunction with Social Network Mapping it can capture the knowledge of different stakeholders across time, people and locations, and identify the flow of knowledge.

Other stakeholder mapping and analysis techniques, accounted for in Bryson (2004) include:

The basic stakeholder analysis technique: stakeholders and their interests are identified, views of the entity in question are clarified, key strategic issues, coalitions of support or opposition are categorised.

The power versus interest grid: stakeholders are sorted into a grid similar to that of the interest-influence matrix, depending on their interest and power to affect the project; players have interest and power, subjects have interest but little power, context setters have power but little interest and crowd has little interest or power.

Stakeholder influence diagrams: this technique adds to the power versus interest grid (or the influence versus interest grid) by showing how the entrants in each of the grid influence each other.

Participation planning matrix: Specifically designed to plan for stakeholder participation. It guides the facilitator to think about the different ways and levels that different stakeholders need to be engaged.

Grimble and Wellard, (1997) use the Macro-Micro Continuum, classifying stakeholders from global, national, regional, local to offsite. Each of the methods above differ slightly in their approach to stakeholder analysis, but each moves towards understanding the subtleties of influence and clarifying the decision making process for those involved (Reed et al., 2009). Each method can produce complimentary results (Lienert et al., 2013) which can be used to get a clearer overall picture of stakeholder involvement; e.g. Lienert et al. (2013) used social network analysis to compliment results obtained from stakeholder analysis by exposing patterns in stakeholders interests, they also used network analysis to reveal fragmentations between stakeholder groups to give a more comprehensive view of attitudes.

3.1. What influences public perception

Public perception can be explained as a snapshot of collective attitudes and opinions of a sample of people who are asked what they think about certain matters or issues (Dowler et al., 2006).

Individual attitudes can be defined as a person's summary appraisal of an object or fact (Ajzen, 2001). Waldo (2012) refers to attitude as a system of three components – *cognitive* (the individual's belief about an object), *feeling* (the emotions experienced in relation to the object) and *action tendency* (the readiness to act that is associated with the attitude). Each

of these components affect the perception of the individual when assessing a certain object or issue (Waldo, 2012). Devine-Wright, (2005) identifies that it is a combination of the different features of wind energy which has an impact on public opinion regarding wind farms i.e. physical, contextual, political, socio-economic, social, local and personal, and attitudes are drawn from those.

Values are also the fundamental building blocks of attitudes and perceptions (Waldo, 2012), they can be broken into four basic types (Johansson and Miegel, 1992)

1. Material values.
   That which constitutes a good standard of living
2. Aesthetic values.
   That which is ugly or beautiful.
3. Ethical values.
   That which is right or wrong, good or bad.
4. Metaphysical values.
   Truth and justice on a religious scale.

Aesthetics seem to be the most prevalent value-set impacting on the development of renewable energy projects, which include factors such as place attachment (Devine-Wright and Howes, 2010), and scenic impacts (Bishop and Miller, 2007). Most of the studies have been undertaken with specific influencing factors in mind (Bishop and Miller, 2007; Firestone and Kempton, 2007; Kermagoret et al., 2016; Ladenburg, 2010; Ladenburg and Dubgaard, 2009; Teisl et al., 2015; Waldo, 2012). Ladenburg and Möller (2011) give a comprehensive review of studies of attitudes related to previous experiences with terrestrial wind farms, and concluded that increased travel time to wind farms has a direct correlation to increased negative attitudes towards wind farms, and those living closest to large offshore wind farms have more positive attitudes towards those wind farms. Ethical values together with material values are also significant, i.e. fishing impacts (Reilly et al., 2015), and environmental impacts (Firestone and Kempton, 2007). Material Values such as air quality, economic development and a reduction in electricity rates have also been shown to increase support for offshore energy projects (Firestone et al., 2012) along with ethical values such as environmental protection (Waldo, 2012; Warren et al., 2005). Those who live close to existing wind farms have shown to have more positive attitudes towards the farms (aesthetic values), and as a result of their experience with wind farms (as opposed to perceived preconceptions of them) will support expansion (to a certain extent (Warren and McFadyen, 2010; Warren et al., 2005)) of wind power in the area (Devine-Wright, 2005).

Because most of the studies in the literature undertaken are ‘barrier oriented’ i.e. studying the reasons why there are objections to wind farms (Reilly et al., 2016; Brennan and Van

Rensburg, 2016; Waldo, 2012; Ladenburg, 2010; Bishop and Miller, 2007; Devine-Wright, 2005;), it is difficult to ascertain the relative significance of each variable or variables which influence the attitudes of the study group (Devine-Wright, 2005). Furthermore the values that individuals hold cannot accurately be assessed, without taking into account the demographics of the individuals sampled (Ladenburg, 2010). Opposition increases with increased levels of education (Krueger et al., 2000) income (Ladenburg, 2010), age (Teisl et al., 2015; Firestone and Kempton, 2007) and male gender (Teisl et al., 2015; Ladenburg, 2010), but each of these factors cannot be measured in isolation and need to be considered within context (Ladenburg, 2010).

3.2. Methods used to assess public perception

Forward planning and ensuring that assessment method used is compatible with the stakeholder group is key to effectively assessing public perception (Dowler et al., 2006). This is highlighted by Reilly et al., (2016) who consulted with fisheries experts before a survey was carried out. The fisheries experts advised that fishermen would be unlikely to return a postal survey, so a face-to-face type survey which could be done over the phone or in person was designed. Fuzzy Cognitive mapping was used in a study by Kermagoret et al., (2016) because is offered the participants the ability to compare the opinions of different stakeholders in a graphical way which further aided discussion of differing perceptions of an offshore windfarm. Choice Experiments assess the participants preference between alternative hypothetical situations (e.g. should a wind farm be sited on shore or offshore) and show the trade-offs participants were willing to make for each choice (Ek and Persson, 2014; Ladenburg and Dubgaard, 2009).

Dentoni et al., (2018) suggests that wicked problems can be 'harnessed' through the use of multi-stakeholder-partnerships (MSPs). MSPs can be described as a collaboration of stakeholders from across the spectrum who have interests in the project (Roloff, 2008). The partnerships allow the problem to be approached using the different rationalities and hence come to a solution satisfying all participants (Hartmann, 2012). Related to this concept is that of a multi-stakeholder process which gathers all stakeholders pertinent to a specific issue (Hemmati, 2012). The process aims at achieving equity and responsibility, transparency and democracy to strengthen networks among stakeholders. They are apt in situations of two-way deliberative engagement with developers or policy makers (ibid), the aim of which is to come to the *best* solution, as opposed to the only solution (Hartmann, 2012; Jentoft and Chuenpagdee, 2009). Verweij et al. (2006) suggests the 'clumsy solution' which uses cultural theory to more fully explain and understand wicked problems (Hartmann, 2012) by merging opposing perspectives (egalitarian, hierarchical, individualism and fatalism) on what the problem is and how it should be resolved (Verweij et al., 2006).

The different approaches used to study the area of public attitude to renewable energy development seem to be as unique as each case study. Warren and McFadyen (2010) ask if community ownership affects attitude to wind energy in Scotland. Within that question lies the difference between the two wind farms which are studied; one is a community owned wind farm on an island and one is a developer-owned wind farm on a peninsula. The differences between the demographic of each community sampled, sampling methods used, participation methods, data analysis and even facilitator and facilitation techniques used will have had an effect on results. Walker et al. (2014) studied how the presentation and framing of information in a postal survey can effect stakeholders' answers and attitudes to acceptance or rejection of community benefits, but again the combined and individual effects of demographics, life experience circumstance and even gender will have a bearing on results which cannot be definitively measured (Devine-Wright, 2005).

Methods evident in the literature are listed below. Whatever method is used, a pilot study should be carried out beforehand, (e.g. O'Mahony et al., 2009, Gross, 2007 and Warren et al., 2005) to ensure the framing of the procedures and the structures and types of questions used are suitable for the audience (Dowler et al., 2006).

Quantitative methods

Opinion Polls/Surveys/Questionnaires

Much of the existing studies concerning environmental management use quantitative research methods such as opinion poll type questionnaires which are posted (Ek and Persson, 2014; Ladenburg, 2010), distributed door to door (Jones and Eiser, 2010; Warren et al., 2005), emailed (Ladenburg, 2010) or conducted online (Bishop and Miller, 2007) to gauge stakeholder perceptions. Surveys are based on fast short answers to a series of straightforward questions (Dowler et al., 2006). They can contain closed questions with fixed alternatives, open ended questions with no boundaries on what can be answered and/or scale questions (e.g. Likert scale), looking for levels of agreement or disagreement with a statement (Reilly et al., 2015). Surveys can be used on large sample sets and are easily analysed using statistical techniques, measured and reported on (Desai and Potter, 2006). A disadvantage of surveys is that they only document opinions at one point in time and as such don't allow for interaction or discussion (King et al., 1998), however if distributed door-to-door, or carried out face-to-face or over the phone, questions and concerns of the participant can be answered by the distributor (Jones and Eiser, 2010).

Focus groups (detailed below) are commonly used to trial the survey before it is distributed. This is essential in order to evaluate if the surveys work, and allows modification before the actual survey can begin (Firestone and Kempton, 2007).

Qualitative Methods

Qualitative methodologies aim at arriving at a more general comprehension of subjective views and opinions (Desai and Potter, 2006). They generally aim to understand experiences and attitudes (Patton and Cochran, 2002) and include in-depth or semi-structured interviews (Walker et al., 2010b), stakeholder workshops (O'Mahony et al., 2009) focus groups and citizens juries (Waldo, 2012).

Semi-structured interviews

Interviews are conducted using a topic guide (a list of key questions to be covered), made up of loose questions intended to guide the participant but not lead them (Waldo, 2012). They are useful to gain extensive insight into opinions of stakeholders (Reed et al., 2009). Thematic coding analysis, which applies coded themes to transcribed interviews, allows identification of repeated topics (Reilly et al., 2016) and pattern detection which can be further classified to show dominant or less significant views (Veelen, 2018; Devine-Wright and Howes, 2010).

Stakeholder Workshops

Stakeholder workshops bring people together to brainstorm ideas and allow information sharing between stakeholders (Dowler et al., 2006). They give the opportunity for a more holistic view of stakeholders' concerns and input (O'Mahony et al., 2009). Workshop attendees can include industry experts and government representatives (Lange et al., 2018), research institutes, professional associations (Wever et al., 2015) and any others identified during the stakeholder identification process (Dowler et al., 2006). Background information about the topics to be covered can be disseminated before the workshop to allow preparation of participants (Wever et al., 2015).

Focus Groups

Focus groups usually entail groups of between six and twelve people who have been strategically selected to closely represent the community (Krueger et al., 2000). Facilitators lead the participants through an agenda of research questions and record their answers (Patton and Cochran, 2002). An advantage is that participants can speak freely and as such may uncover previously little known facts or views, however the 'public' dynamic of the group may also inhibit free speech (Dowler et al., 2006). Focus groups are often used to ensure that proposed surveys or questionnaires are appropriate for use (Ek and Persson, 2014; Reed, 2008) for further quantitative research. Member-checking can be used to validate results, where findings are fed back to the focus group to measure to what extent they agree that their views are represented by the findings (Patton and Cochran, 2002).

Citizens Juries

Citizens Juries are useful for attaining agreement when there are definite criteria to debate and when developers are open to implementing the suggestions (Abelson et al., 2003). They are typically made up of 16 people, who closely represent the community. Juries can last for up to five days and include presentations from the developer and interested parties, who hold different views (Reed, 2008). Witnesses may be environmental groups, local authorities, professional experts, and corporates. One or two facilitators help the smooth running of the process and after debate the jury draws conclusions in a report which is presented to the commissioning body (Lenaghan, 1999).

Recently there is a shift towards combining two or more methodologies to obtain more rounded and reliable results (Dowler et al., 2006). Warren and McFadyen, (2010) used questionnaires and semi-structured face-to-face interviews with five key stakeholders in their study of attitudes to community versus developer-owned wind farms. Waldo (2012) used semi-structured interviews together with onsite-observations, and attendance at local meetings to get a more comprehensive view of local attitudes. The results of these multi-discipline research methods can be triangulated to validate data and ensure more robust results are achieved (Dowler et al., 2006).

Content Analysis

Content analysis is the exercise of examining texts and mass media and noting the presence or absence of certain themes and features. The text is coded according to agreed rules and definitions, and common themes and patterns are identified (Dowler et al., 2006). Content analysis is useful for creating a baseline for study and an historical view on the issue at hand (Reed et al., 2009; ibid)

Q Methodology

Participants are interviewed and key statements are identified from interview transcripts. The statements are then ranked in relation to how much each participant agrees with them. Results are then interpreted using factor analysis (Curry et al., 2013). This methodology is used to examine participants who represent different stances on certain issues. It can be restrictive in that only the statements supplied by the facilitator will be taken into account (Reed et al., 2009). But it is growing in popularity within environmental management areas (Ellis et al., 2007).

Fuzzy Cognitive Mapping

A fuzzy cognitive map is a semi-quantitative diagrammatical portrayal of what a participant or group of participants know about or perceive a system to be (Kermagoret et al., 2016). Fuzzy Cognitive Mapping can be used to explore the links between social norms, attitudes and

motivations driving individual preferences (Kontogianni et al., 2012). It provides a structured way to relate differing views of separate groups and aids discussions during interviews (Meliadou et al., 2012).

Multi-Criteria Analysis

Multi-criteria analysis techniques can be used to identify the many criteria of an issue that need to be assessed in a decision-making process, even if they cannot be measured in the same way. Participants are given a number of related situations, or scenarios, or criteria. They are then asked to give each element a weighting of importance (Hattam et al., 2015.).

4.1. Reasons for stakeholder engagement

Environmental resource managers have an ongoing challenge to design a framework that successfully informs, includes and empowers the public, and at the same time allows incorporation of local knowledge and concerns into the final development solution (Meliadou et al., 2012). This process should ultimately lead to social acceptance of the proposed development.

Social acceptance can be underestimated, misunderstood, and badly managed which is why it has often been and can become a significant obstruction to renewable energy development (Wustenhagen et al., 2007). To ensure social acceptance of a project, it has become increasingly important to include stakeholders in the planning stages or risk the possibility of protests, objections and potential failure (Reilly et al., 2016; Haggett, 2011; Jones and Eiser, 2010; Reed, 2008; Ellis et al., 2007; Sorensen et al., 2002). Wustenhagen et al. (2007) categorised social acceptance into 3 distinct groups:

- *Socio-political acceptance*
  - General acceptance of high-level policies such as developing use of sustainable energy
- *Community acceptance*
  - Actual acceptance of specific renewable energy project to be sited in the local community
- *Market acceptance*
  - Acceptance and implementation of the technology by the public

Evidence shows that there is high global acceptance of renewable energy policies, and strong support for expanding renewable energy capacity – *Social acceptance* (Firestone et al., 2012; Waldo, 2012; Jones and Eiser, 2010; Sorensen et al., 2002), nevertheless there is a noteworthy discrepancy between the general acceptance of sustainable energy expansion and the

acceptance of actual, proposed renewable energy projects by the public – *Community acceptance* (Brennan and Van Rensburg, 2016; Jones and Richard Eiser, 2010; Warren et al., 2005). Klain et al., (2017) have identified four reasons for this *social gap* between socio-political acceptance and community acceptance.

1. *NIMBYism*; Not in my back yard; support for global renewable energy as long as it is not sited locally.
2. *Democratic Deficit* - Small, unrepresentative opposition groups dominating the engagement process.
3. *Qualified Support* - Misleading national opinion polls may suggest high support but this is based on certain conditions.
4. *Place Protection* - Belief that installations devalue the location – (e.g. in terms of aesthetic value or biodiversity).

NIMBYism

The term NIMBY (Not In My Back Yard) has historically been used to describe supporters of a particular development as long as it is not built in their locality (Bell et al., 2012; Firestone et al., 2012; Haggett, 2011; Jones and Eiser, 2010; Firestone and Kempton, 2007; Wolsink, 2007) but on further examination it becomes clear that the term NIMBYism is an oversimplification of individuals and groups that have very specific concerns about very specific proposed developments (Jones and Eiser, 2010; Devine-Wright, 2005) and is often manifested in relation to *proposed* rather than actual developments (Warren et al., 2005). Many of the following areas of concern have been in relation to very specific proposed project sites and could be mistaken for NIMBYism

- Visual impact (Haggett, 2008; Warren et al., 2005)
- Perceived disaminities (Devine-Wright and Howes, 2010)
- Loss of tourism through impact on landscape (Devine-Wright and Howes, 2010; Warren et al., 2005);
- Environmental impacts (Warren et al., 2005),
- Spatial demands (Reilly et al., 2016; Firestone and Kempton, 2007)
- Conflict with other activities (Reilly et al., 2016; Firestone and Kempton, 2007);
- Public opinion (Haggett, 2008)
- Perceived lack of socio-economic benefits (Warren et al., 2005)

The term NIMBY carries derogatory connotations and suggests that NIMBYism stems from selfish and egocentric motives which obfuscates the complicated underlying reasons for objection (O'Keeffe and Haggett, 2012). Each concern and objection must be understood in context-specific circumstances (Petrova, 2013) and as such there are calls for the use of the term to be discarded (Devine-Wright, 2005; Warren et al., 2005; Wolsink, 2000).

Democratic Deficit

At local level there have been recurrent disputes and opposition to many different environmental management projects (Devine-Wright, 2005). Pressure groups representing individuals or alliances within communities can have significant power and financial backing (Firestone and Kempton, 2007) allowing them to use mass media to convey their message to a wide audience to increase their presence and influence on the project (Devine-Wright and Howes, 2010; Firestone and Kempton, 2007). The press seems to give more weight and voice to the outspoken minority that opposes the projects while ignoring the less newsworthy supporting populace (Warren et al., 2005). Van Rensburg et al., (2015) observed that pressure groups in favour of wind energy expansion are more prevalent than environmentally oriented groups which oppose wind energy and as such the promotion of support groups by the developer may balance the input. Devine-Wright and Howes (2010) showed how the absence of a pressure group in one town may have been a factor in the lack of both engagement with developers and protest against a proposed renewable energy development, however Wolsink (2000) indicates that in some cases it is not the actual installation that draws the opposition but the developers and their approach which instils mistrust and suspicion and gives rise to unrepresentative groups.

Qualified support

Misleading national opinion polls may be the cornerstone reason stakeholder perceptions have, until recently been overlooked by renewable energy developers (Bell et al., 2005; Wolsink, 2000). National opinion polls infer support for renewable energy on a national basis but the majority include conditions for that support (Bell et al., 2005). Teisl et al., (2015) illustrates this phenomenon in a study of the public's evaluation of benefits and costs of offshore wind farms, where acceptance of wind energy development is high as long as it leads to fuel security, and environmental benefits but this support could diminish if wind power leads to economic losses such as reduction of property prices or viewscape degeneration. There is such a discrepancy between social and community acceptance of renewable energy that Jones and Eiser, (2010) suggest development of precise analysis methods to accurately record the caveats that stakeholders put on their support for renewable energy.

Place protection

The value the local community or individual puts on the aesthetics of a location or a view can greatly influence their opinion on whether or not to support a renewable energy project (Waldo, 2012). Place attachment encompasses the connection a person or group may have with certain locations or views (Devine-Wright and Howes, 2010). Rejection of a project on the grounds of place attachment may easily be mistaken for NIMBYism (Waldo, 2012), which ignores the actual reason of rejection. Warren et al., (2005) also shows that the concept of NIABYism (not in anyone's backyard) exists which describes an opinion that the wind turbines themselves are ugly and spoil any view, both on land and at sea in any location, and so rejects

the concept of wind farms anywhere (Waldo, 2012). However, in a study based in Sheffield, exploring attitudes towards proposed wind farms in nine different locations around the UK, Jones and Eiser (2010) confirmed that resistance to the wind farms decreased when the wind farms were not visible from the participants residence or location (Jones and Eiser, 2010) which refutes Warren et al.'s (2005) argument for NIABYism. Place protection is a phenomenon not only limited to local communities, but can also be applied to tourists and visitors to those areas (Ladenburg, 2010). The aesthetic value and restorative status of coastal areas can be an incentive for those outside the 'local' community to actively reject proposed projects (Karydis, 2013).

4.2. Levels of Stakeholder Engagement

In a study examining the success or failure of decisions made by work place managers Nutt, (2002) found that over half of 400 implemented decisions which were studied, failed. The over whelming factor for the failures was identified as the degree to which stakeholders were involved in the problem solving process (Nutt, 2002). Another major component of effective decision making is to ensure that support and backing exists for its successful realisation (Vroom, 2003). Since its publication in 1969, Arnstein's ladder of citizen engagement (Arnstein, 1969) has remained a core guideline and benchmark against which to measure levels of involvement (Luyet et al., 2012; Reed, 2008; Collins, 2006). The ladder is divided as follows:

Non-participation

1. Manipulation
2. Therapy

Tokenism

3. Informing
4. Consultation
5. Placation

Citizen power

6. Partnership
7. Delegated power
8. Citizen control.

Non-participation

Manipulation and Therapy

The bottom two rungs of the ladder are classified as non-participatory. Neither of these levels demonstrate an allocation of influence in any form and as such are seen as non-participatory (Bishop and Davis, 2002)

Tokenism

Informing

Early dissemination of information and ease of access to that information allows the local community make informed decisions about a project (Klain et al., 2017). The value of information is illustrated by Brennan and Van Rensburg's 2016 study on attitudes to wind farms in Ireland where the community was asked if they would prefer no information or 100% increase in compensation to the community i.e. be totally uninformed of plans but compensation would be significant. 64% of respondents chose information over increased compensation.

Consultation

Consultation is the collection of stakeholders' opinions and suggestions, which may or may not be taken into account (Luyet et al., 2012). If information is not taken into account it may result in frustration among stakeholders, as illustrated by Reilly et al. (2016)

Placation

When stakeholders have the ability to advise and suggest courses of action, but the developers retain the control and ability to make decisions. This level of engagement is another form of tokenism (Arnstein, 1969) which can lead to further frustration on behalf of the stakeholders involved (Klain et al., 2017).

Partnership

When developers work in partnership with stakeholders, they base their decisions and actions on input and suggestions from stakeholders (Luyet et al., 2012). Developers and stakeholders learn from each other and together practice deliberative two-way learning, which is key to successful stakeholder engagement (Klain et al., 2017).

Delegated power

Delegated power enables the stakeholder to make decisions providing that authority and responsibility to make those decisions are also delegated (Tritter and McCallum, 2006). However, in renewable energy development decision making power is rarely extended to the stakeholder regarding the most crucial component of the planning process, that of location (Wolsink, 2007).

Citizen Control

Stakeholders have ownership of the project. Projects are managed and controlled by the citizens involved. In terms of renewable energy, citizens have control over issues like scale, location and orientation of the turbines (Walker, 2008). This model is part of the concept behind community owned renewable energy projects (Warren and McFadyen, 2010).

Although the ladder has continued to be of seminal interest to stakeholder engagement endeavours, its relevance and application is subject to ongoing analysis and revision (Collins, 2006.). A common criticism of the ladder is that 'citizen control' seems to be portrayed as the optimum level for stakeholders to attain, however some stakeholders may not want to nor need to be involved at all (ibid); referred to as the Arnstein Gap (Bailey and Grossardt, 2010). Arnstein's ladder and adaptations using Arnstein as a foundation (Luyet et al., 2012) fail to differentiate between methodologies, type of stakeholder and desired result (Tritter and McCallum, 2006). The linear relationship between non-participation and citizen control is also cause for debate over the effectiveness of the ladder (Collins and Ison, 2009). It implies that the problem remains constant and only participation is the element which changes (Bishop and Davis, 2002). Indeed, Treby and Clark (2004) point out that defining consultation as a participation method is a misleading concept; if consultation was all that is needed to change perceptions, then current models of top-down information dissemination should be resulting in attitude and behaviour changes which is not the case (Treby& Clark, 2004). Tritter and McCallum (2006) go further to say that Arnstein's ladder makes no provision for the dynamic and evolutionary nature of participation and as such misses an integral part of participatory processes. This has led to the development of other models such as Davidson's Wheel of participation (Fig. 1.).

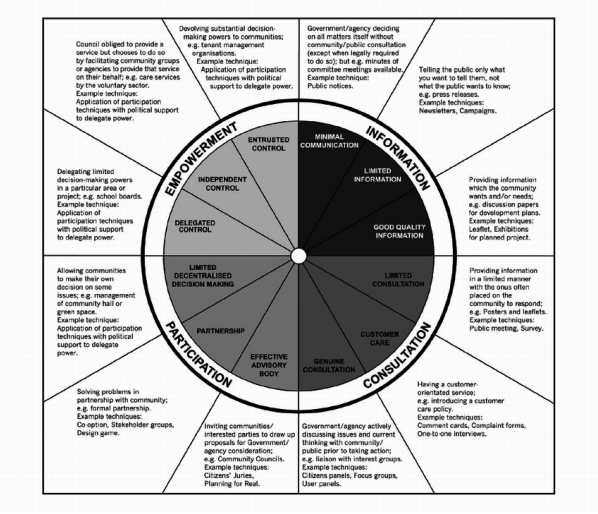

Fig.1. Davidson's 1998 wheel of participation

Collins, (2006) suggests social learning as a different approach to stakeholder engagement. Communities learn from each other, by developing an understanding of the differing

perspectives and rationalities from the variety of stakeholder groups involved (Wever et al., 2015) leading to more resilient and long lasting environmental management decisions (Reed, 2008).

If approached in a robust and meaningful manner, stakeholder engagement can be used as a tool to create strong collaborations between developers and local communities (Klain et al., 2017; Jones and Eiser, 2010). Effective, early deliberation can result in real and practical knowledge exchange between developers and stakeholders, which can ultimately lead to mutually fostered objectives and inventive solutions for all parties (Ritchie and Ellis, 2010). This type of engagement can be referred to as *Upstream* engagement (Walker et al., 2010a) which can occur during initial planning stages, before any decisions have been made (Klain et al., 2017). The concept of engagement as a proactive partnership is illustrated in a study by Klain et al (2017) of the Martha's Vineyard community owned wind farm and Block Island, America's first offshore wind farm. From the outset of both of these projects residents and stakeholders were engaged, involved and empowered. There was a sense of trust and knowledge exchange, and as a result two successful projects ensued (Klain et al., 2017). Reilly et al., (2016) demonstrate how fishermen were informed, consulted and involved from the beginning of the consultation phase of the AMETS project. The result of this two-way deliberative partnership between developers and fishermen was the re-configuration of shape and size of the original test site which mitigated against impacts on crab fishermen in the area and allowed the project to proceed unhindered (Reilly et al., 2016).

A proactive, positive approach to stakeholder engagement by developers can increase their own credibility and reduce public opposition (Komendantova and Battaglini, 2016). Having an involved, participating citizen can lead to two-way deliberative learning and co-production of solutions for environmental problems (Abelson et al., 2003).

4.3. Best practice for stakeholder participation

Regardless of participatory technique being used there is a need for well-defined objectives for the participants to know why they are participating and what is required of them (Reed, 2008; Glicken, 2000). Communication must be clear and honest to instil trust in the process and the developers (Brennan and Van Rensburg, 2016; Walker et al., 2010b). Lange et al., (2018) highlighted the importance of access to reliable information at the pre-planning stage and maintenance of effective community liaison. Facilitation and freedom of speech and equity are two areas which are common through the literature pertaining to best practice for stakeholder participation:

Facilitation

The facilitator plays an essential role in the entire participatory process, regardless of what technique is chosen (Reed, 2008). They must have the skills to successfully guide meetings which have the potential to result in conflict, in a flexible and approachable manner (Richards et al., 2007) while being highly versed in the field of discussion (Schumacher et al., 2018). In order to maintain group dynamics, facilitators must be able to encourage less dominant participants, while handling more vocal ones and generally steer the meeting to a positive (constructive) conclusion, while being unbiased and fair (ibid; Bell et al., 2012; West et al., 2010; Reed, 2008; Abelson et al., 2003). Bell et al., (2012) performed a systemic review of literature spanning 2001 to 2012 and concluded that within the area of participation and participatory methods, there was an overwhelming disregard for factors such as how the dynamics of the group, location, methods and skill of the facilitator can affect the outputs of the method chosen. Reed (2008) recognises that although facilitators can train and prepare, experience is the best learning tool for effective facilitation.

Freedom of Speech and Equity

Webler and Tuler, (2000) discuss the importance of ensuring that participants have the freedom and equality to give their opinions in a fair and open arena. But in order to do so Klain et al. (2017) points out that they must understand the question at hand. Technical terms should be translated to lay terms and jargon should be clarified. It's the responsibility of the facilitator to create an environment where information is exchanged at the most comfortable intellectual level of the audience. Here the issue of method of data collection must be considered. An 'open forum' may not be conducive to free speech if certain members feel intimidated, or subjects may be socially sensitive (Dowler et al., 2006) in which case a different participatory method should be chosen.

Reed (2008) has proposed 8 key features of best practice for participation which could be used as a checklist for participation planning:

1. Stakeholder participation needs to be underpinned by a philosophy that emphasises empowerment, equity, trust and learning.
2. Where relevant the stakeholder participation should be considered as early as possible and throughout the process
3. Relevant stakeholders need to be analysed and represented systematically
4. Clear objectives for the participatory process need to be agreed among the stakeholders at the outset
5. Methods should be selected and tailored to the decision-making context, considering the objectives, type of participants and appropriate level of engagement.
6. Highly skilled facilitation is essential
7. Local and scientific knowledge should be integrated
8. Participation needs to be embedded in developmental plans

4.4. Factors influencing success and failure of Stakeholder engagement and participation

Because of the very nature of stakeholder engagement and participation; the diversity of issues, scenarios and stakeholders themselves, there is a major challenge in finding the most encompassing and fruitful way to undertake it (Webler and Tuler, 2006). Although it is impossible to suggest a definitive guide to participation, a number of themes are emerging from case studies throughout environmental management which are helpful in steering the process (Reed, 2008). Some common factors which are evident are below:

- Timing (Devine-Wright, 2005; Sorensen et al., 2002)
- Trust (Walker et al., 2010b)
- Transparency, competence and fairness (Wolsink, 2007)
- Two-way deliberative learning and empowerment (Brennan and Van Rensburg, 2016; Sorensen et al., 2002)
- Community benefits
- Community ownership (Brennan and Van Rensburg, 2016; Devine-Wright, 2005; Warren and McFadyen, 2010)

Timing

It has been shown that timing of stakeholder engagement is an essential factor in gaining trust of communities (Glicken, 2000). The early dissemination of information and inclusion of the local community is critical to nurturing trust between the developers and stakeholders (Klain et al., 2017; Reilly et al., 2016; Haggett, 2011; Jones and Eiser, 2010; Wustenhagen et al., 2007; Sorensen et al., 2002). Lange et al. (2018) highlights how the inclusion of the community, with the help of well-chosen intermediaries at the pre-planning stage of a development can help in the success of a project.

Wolsink (2007) demonstrated the U shape curve of community acceptance of renewable energy projects over time (Fig.2.); acceptance is high at the initial stages of the project, support then reduces during the development phase and rises again to relatively high acceptance on completion of the project. This could lead to the conclusion then that given time a community will learn to accept a development (ibid). Sorensen et al., (2002) concur with this view and go further by suggesting that very large development projects should have periods of adjustment worked into them to allow communities become accustomed to the change, however a study by Devine-Wright (2005) concludes that there is no empirical evidence that public perception of wind energy improves over time.

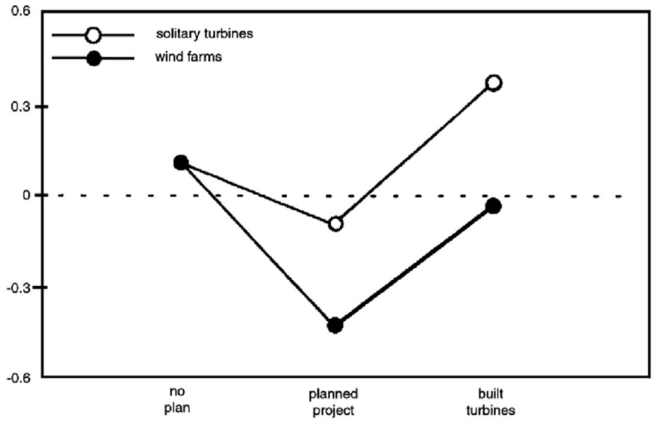

Fig.2. Wolsink's (2007) U-shaped curve of acceptance over time.

Trust

The element of trust is common among all of the case studies examined (Klain et al., 2017; Ek and Persson, 2014; Walker et al., 2014; Reed, 2008). Stakeholders must have trust in the developers (Reilly et al., 2015), the facilitators (Reed, 2008), the processes used (Bryson, 2004), the intermediaries or messengers (Klain et al., 2017) and the decision makers (Haggett, 2011). Even though there may be support for the project itself (Devine-Wright, 2008.; Wolsink, 1996), many developers are met with suspicion (Reilly et al., 2015). In order to surmount this, developers often employ local or trusted intermediaries (Klain et al., 2017) when working with local communities.

Walker et al., (2010b), illustrated how lack of trust can be a major inhibitor to project support when they explored the role of community initiatives during the implementation of renewable energy projects in the UK. Out of six case studies covered, two stood out with greatly differing results; the study based in Gamblesby had significantly positive results in terms of community support and trust in the developers and the study at Moel Moleogan had significantly negative overall responses in terms of community trust and support for the developers. Results showed that the pivotal factor was trust.

Transparency, fairness and competence

Transparency in process can achieve a sense of trust if approached correctly (Glicken, 2000). The historic suspicion with which developers can be met with can be alleviated if early connection with the community is coupled with transparency (Reilly et al., 2016). The stakeholder must perceive fairness of process or *procedural justice* and fairness of outcomes or *distributive justice* (Walker et al., 2010b). If people feel that the methods used are fair then they are far more likely to support the results of that process (Gross, 2007). Rudolph et al. (2018) also includes *recognitional justice* - pertaining to who is represented and overlooked

and how this can be addressed. Community benefits and the allocation of them are closely associated with perceptions of justice (Rudolph et al., 2018) and have been shown to have significant influences on attitudes and support of renewable energy projects (Walker et al., 2010a). If the lines of communication are kept open between developers and stakeholders areas of concern or potential dispute can be abated or at least managed before they magnify (Gross, 2007; Webler and Tuler, 2006; Sorensen et al., 2002; Glicken, 2000).

Two-way deliberative learning

Irrespective of what participation technique or method is used to engage stakeholders, deliberative learning allows the stakeholder to learn about the issue, discuss the information and use it to come to a conclusion of action or at least consensus (Abelson et al., 2003). Two-way deliberative learning contrasts with the decide-announce-defend (DAD) model, which minimises stakeholder engagement; where stakeholders are informed of decisions which have already been made with no input or provision for discussion (Komendantova and Battaglini, 2016). This situation can often lead to poor planning decisions and wide-ranging dispute as seen in the Corrib Gas Project (Lange et al., 2018). However, if learning is two-way, the developers can learn from local information and use it to make more informed decisions with respect to key project issues and have a direct input to practical project issues (Reilly et al., 2016). Social learning, where different groups of stakeholders learn to understand each other's view points and potentially learn from each other can also have a positive and constructive effect on the entire project (Collins, 2006.) In a case study by Klain et al. (2017) trusted intermediaries assisted in the two-way deliberative learning process by being available to explain and inform stakeholders about project information in addition to explaining stakeholder concerns to developers. The result was a mutually beneficial process with high acceptance of the project and ongoing stakeholder satisfaction (Webler and Tuler, 2006).

An example of two successful projects which illustrate the incorporation of all of the factors listed above are shown by Sorensen et al., (2002). The first development was based off the coast of Denmark, the second based off the coast of Sweden. In the Danish project, as soon as a potential development site was earmarked, the government immediately engaged with a group of locals to form Copenhagen Energy (which included members from the Municipality of Copenhagen and local utilities). This immediate engagement with local stakeholders set a precedence for two way deliberative learning and empowerment for the local community. Each of the concerns raised by the locals were comprehensively investigated and acted upon and as a result there was overwhelming support for the development with only a handful of objectors. The Swedish project also involved the local community from the outset and ensured the locals had a high degree of involvement from the planning stage, with local recommendations and input being incorporated into the final development. This strategy had the knock-on effect that the local community were more receptive to changes because they were part of the process. The overall feeling from both of these case studies leads to the

conclusion that both communities trusted the developers because of their early incorporation into the planning process. The communities experienced *procedural justice* which led to a feeling of *distributional justice* (Walker et al., 2014).

Community Benefits

Although the overall benefits from renewable energy include clean energy and energy security (Rudolph et al., 2018), when proposing specific projects it has become common place for developers to offer community benefits to the surrounding locality for various reasons including to act as a 'good neighbour', as a result of community demands or at the request of the local authority (ibid; Cass et al., 2010; Walker et al., 2010b). These community benefits vary in size, allocation and motivation and can include community funds, benefits in kind and the awarding of contracts to local businesses during the construction and ongoing maintenance of the development, community ownership and equal distribution of revenue (Rudolph et al., 2018; Klain et al., 2017; Cass et al., 2010; Gross, 2007). Rudolph et al. (2018) categorises community benefit into 5 areas, emphasising the importance of the definition of the benefit, which frames the community's acceptance of it:

1. Spreading the positive – distributional justice, sharing the wealth of the produce.
2. Recognising hosts – recognitional justice, the developers are recognising that the community is hosting the installation of the project.
3. To increase local acceptance – but this may be perceived as a bribe depending on how it is presented to the community.
4. To account for impact – the disruption of construction.
5. Compensation for disruption.

According to Terwel et al., (2014) it is essential that developers consult with the community about potential community benefits before they are offered, this will ensure the company is regarded as being fair and honest. Benefits offered to the community without consultation could be construed as trying to 'buy' support, which may lead to diminished support and increased mistrust in the developer's motives (Terwel et al., 2014; Walker et al., 2010b). Klain et al. (2017) highlights the importance of careful consideration and flexibility when determining community benefits. Factors such as the type of community (or groups of stakeholders) effected by the development, the perception of the impact of the development and the understanding of what the benefit is, will all have a bearing on how the potential benefit is regarded by the community (Rudolph et al., 2018).

Community ownership

Community ownership can be seen as a more successful way of providing community benefits (McHarg, 2015). Financial benefit is more substantial and extension of community benefits suggests that part or whole ownership of a renewable energy project reduces the extent of

opposition to a development and can result in successful stakeholder engagement (Ek and Persson, 2014). Furthermore, in a study of local residents involved in community renewable energy Walker and Devine-Wright (2008) concluded that close involvement with a local community project led to greater support and acceptance of renewable energy projects. This is supported by a 2010 case study of public attitudes towards two wind farms in south-west Scotland where Warren and McFadyen (2010) revealed that although attitudes towards both wind farms were relatively high, local support for an existing commercially owned development would increase if it were community owned and correspondingly, support for a community owned development would decrease if it were to be commercially owned. However Veelen (2018) challenges the view that community projects are always more democratic and the empowerment of decision making can always result in successful projects. This opinion is in the minority within the literature with evidence pointing to higher rates of successful renewable energy development in countries which have higher rates of community owned renewable energy projects such as Germany, Denmark and The Netherlands (Toke et al., 2008).

4.5. Participatory Techniques

In a review of the literature spanning 2001 to 2010 Bell et al. (2012) concluded that there is a plethora of participatory methods available which can be used in different contexts with varying degrees of effectiveness. However there is a lack of information about how the methods actually work. For most of the existing methodologies, they found that there were equal numbers of adaptations and variations of the same method of participation depending on the scenario and participants;

> '…participatory researchers have applied just about every conceivable form of engagement to attempt to undertake participatory research in new, novel and varied manners.' (Bell et al., 2012).

Table 1. Gives a summary of participatory techniques evident in the literature and a short summary of what is in involved in the technique.

Table1. Participatory techniques with summaries of what each one involves. Drawn from findings of Klain et al., 2017; MacFarlane et al., 2017; Luyet et al., 2012; Warren and McFadyen, 2010; Dunn, 2007; Tippett, 2007; Dowler et al., 2006; Abelson et al., 2003; van Asselt Marjolein and Rijkens-Klomp, 2002; Walker, 1998; Renn et al., 1993; Dalkey and Helmer, 1963.

Relevant to	Method	Participation type	References
stakeholders	Newsletters and reports	Information dissemination	Tippett et al.,
	presentations public hearings	Information dissemination	Richards et al., 2007
	Web site	Information dissemination	Luyet et al., 2014

Interviews	Can be semi-structured or structured. Qualitative method to collect information about an issue	Luyet et al., 2015
Questionnaires	Participant answers a set of open ended or closed questions. The most popular quantitative method of information gathering	Warren and MacFadyen, 2010
Deliberative polling	An opinion poll with the opportunity to discuss and deliberate with other stakeholder before answering the polling questions	Abelson et al, 2003
World Café	Allows open forum discussion of issues and connection of divers perspectives , identifies patterns and commonalities in discussion	MacFarlane et al, 2017
Choices Method	Participants are given a choice between a number of scenarios described by a number of characteristics, with different levels of trade-offs measured	Walker, 1998
Future Search	Generates action by building a shared vision among stakeholders	Walker, 2001
Guided Visualisation	Use of a script to take a group on an imaginary journey into the future to visualise a development	Walker, 2002
Open Space	Democratic framework allowing discussion about a central theme.	Walker, 2003
Participatory Appraisal	Highly flexible, highly visible methods to encourage learning and interaction	Walker, 2004
Participatory Strategic Planning	Enables a group come to a shared vision of its desired future and to create a detailed participant-owned action plan	Walker, 2005
Team Syntegrity	Allows the sharing of as much information and ideas about a complex issue as possible and explore creative solutions over three to five days	Walker, 2006
Participatory GIS	Allows public participation and takes local information into account when producing the GIS system	Dunn, 2007
Focus Group	Stakeholders are guided through and debate different aspects of the proposed project. Focus groups can also assess suitability of questionnaires and surveys, using a pilot survey	Dowler et al, 2006; van Asselt Marjolein & Rijkens-Klomp, 2002
Surveys	Similar to questionnaires	Dowler et al, 2006

stakeholders and experts	Site Visits	Allows information dissemination and consultation. Allows participants to see visualise what is proposed	Klain et al, 2017
	Scenario Analysis	Amalgamates instinctive learning and judgement about possible future events with existing analytical models	van Asselt Marjolein & Rijkens-Klomp, 2002
	Consensus conference	Meetings to discuss issues, initially in small groups with one expert. Conclusions are then presented to the entire assembly	Abelson et al, 2003
	Local Sustainability Model	Helps a community to assess its present position and test the likely effects of projects	Walker, 1998
	Round Table Workshops	Allows key players to generate a vision and strategy for development. Allows for idea exchange and brainstorming	Walker, 1998
	Action Planning	Collaborative events where stakeholder and experts work together to deal with the proposed project	Walker, 1999
stakeholders and developers	Participatory mapping	Bottom up approach to allow information flow from stakeholders to developers	Forrester et al, 2015
	Citizens Juries	Deliberation regarding issues between stakeholders and experts and results presented to developers	Abelson et al, 2003; Walker, 1998; Renn 1993
experts	Delphi	Experts answer questionnaires about an issue, answers are collated and resubmitted to experts for review	Dalkey & Helmer,1963
	Group Delphi	As Delphi but based on group interactions instead of individual responses	Renn, 1993
	Expert Panel	Groups of experts and non-experts are discuss the issues	Abelson et al, 2003
Stakeholders experts & developers	Social Audit	Allows developers to measure, understand report on and improve their performance during a project	Walker,1998

Klain et al., (2017) created a comprehensive flowchart (Fig.3.) as a result of their study of offshore community windfarms in The US. It encompasses the key areas which need to be taken into account during deliberation and provides a wide-ranging overview of key public participation processes and outcomes.

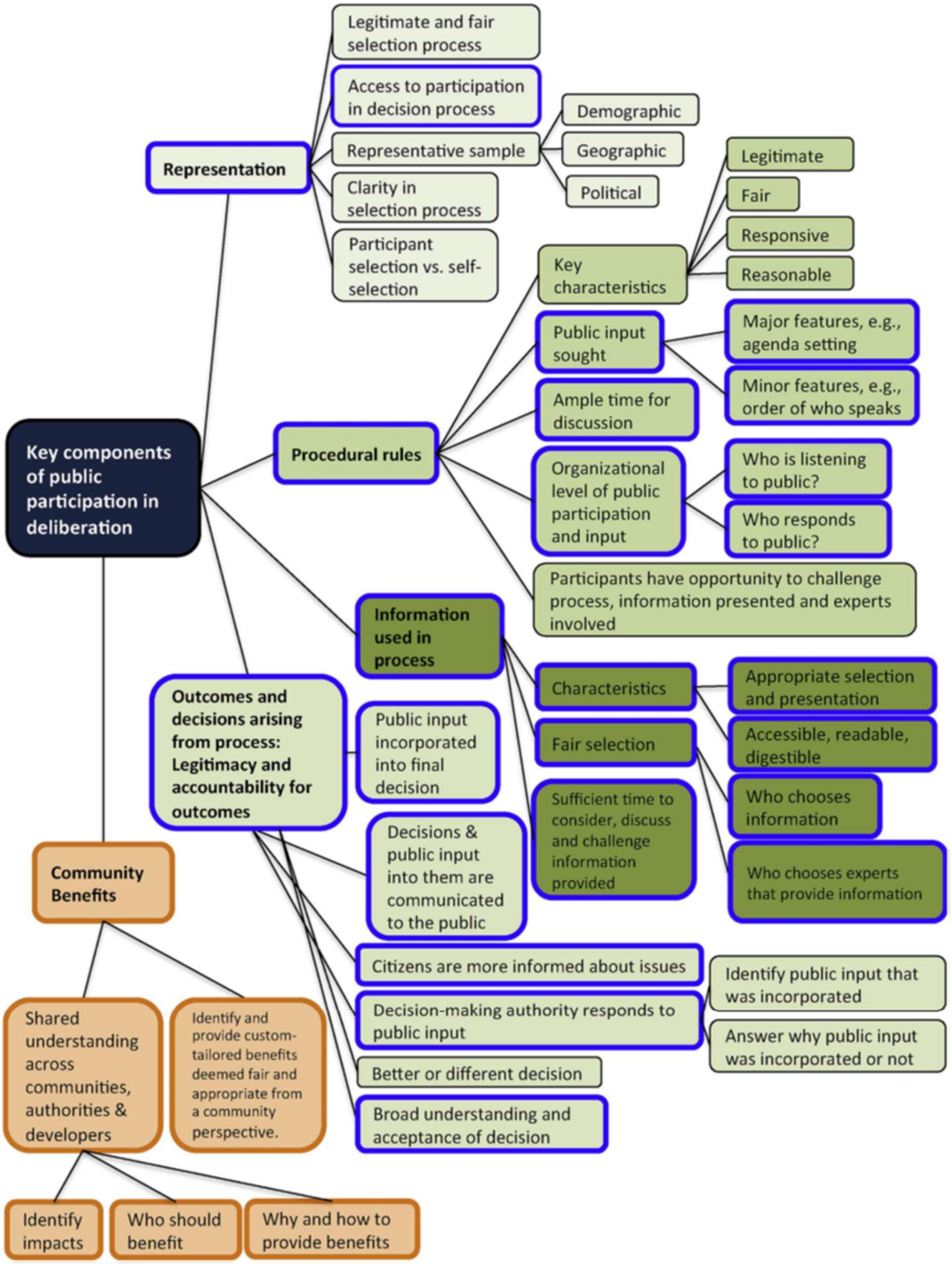

Fig.3. Design and evaluation principles for public participation processes with community benefit outcomes (Klain et al., 2017)

5.1. Ireland

There have been many studies of attitudes and perceptions of renewable energy globally, such as the US (Teisl et al., 2015), Australia (Bishop and Davis, 2002), Denmark (Ladenburg, 2010), Sweden (Ek and Persson, 2014), France (Kermagoret et al., 2016), UK (Devine-Wright, 2005; Jones and Eiser, 2010), and Scotland (Warren and McFadyen, 2010).

Case studies pertaining to stakeholder perceptions of offshore wind in an Irish context are limited (Reilly et al., 2015), consequently Ireland's experience of both onshore and offshore renewable and non-renewable energy development will be drawn on to evaluate Ireland's record in stakeholder engagement and participation.

In a study by Warren et al. (2005) covering existing wind farms, two in Cork (Currabwee and Milena Hill) and two in Kerry (Tuarsillagh and Beenageeha), results showed that residents living closest to the wind farms showed highest support for them, with opposition increasing the further away the respondents lived from the wind farms (but were still within sight of them). This is concurrent with findings from studies which show that those living in closer proximity to wind farms are more supportive of them (Ladenburg and Möller, 2011). In the same study 40% of respondents were unhappy with the consultation process (most of the respondents had heard about the development by word of mouth, with only 5% having heard about the public meetings held by the council and the developer) yet still supported the development (Warren et al., 2005). This outcome is contrary to arguments throughout the literature stating that stakeholders must be satisfied that the processes are fair and equitable in order to support developments (Luyet et al., 2012; Reed, 2008). This may be explained by the phenomenon of increased support for operational wind farms over time (Wolsink, 2000) as opposed to increased opposition to *proposed* wind farms (Warren et al., 2005) and large multi-national developers (Reilly et al., 2015). It may also be explained by the fact that wind farms are becoming more commonplace in Ireland (Brennan and Van Rensburg, 2016) leading to increasing support as a result of stakeholders having more experience of and being more familiar with wind farms (Devine-Wright, 2005).

'Templederry Community Wind farm' in County Tipperary is an example of Ireland's first successful, co-owned renewable energy project (Lange et al., 2018). The major factors contributing to the success of this project echo those covered earlier in this paper pertaining to good stakeholder engagement, i.e. trust in the processes, trust in the facilitators and intermediaries, with open and transparent engagement with the community. But other factors are also significant. The area was experiencing deteriorating local population and employment, a factor which Devine-Wright and Howes (2010) suggested contributed to higher levels of support for an offshore wind farm in Colwyn Bay, Wales and to a greater

extent the 'Awel Amen Tawe' project in the Mynydd Uchaf Mountains in South Wales (Devine-Wright, 2005). Other factors contributing to the success of the project are also evident in the literature; the similarities between the Templederry case study and the community owned renewable energy cooperative, Vineyard Power which successfully developed an offshore wind farm 12 miles south of Martha's Harbour (Klain et al., 2017), show that the community had an integral part in the pre-planning, planning and development stages of both projects. Community benefits were 'custom tailored' (ibid) and well defined leading to a successful, co-owned renewable energy solution.

One of Ireland's most infamous and long running examples of badly managed stakeholder engagement is the Corrib Project (Lange et al., 2018) which concerns the building of a gas pipeline through the townlands of Rossport, on the Erris peninsula in the West of Ireland (Gilmartin, 2009). It began with the granting of planning permission in 2004 (Killian, 2010). The dispute is underpinned by deep place attachment by the local community (Gilmartin, 2009), a factor which is explored by Devine-Wright and Howes (2010), coupled with a mistrust of government and developers resulting in the imprisonment of 5 local farmers (Murphy, 2013). The socio-economic benefits of this project were completely overshadowed by the general feeling of the community that the government had been acting in partnership with the corporates and did not have the welfare of the community as a priority (Lange et al., 2018). The translation of technical terms and jargon in order to include stakeholders and give them a sense of empowerment was inversely used during the Corrib oil dispute. Killian (2010) suggests that the language of accountancy was used to side-line objectors whose protests were not based on economics. This obstructed local stakeholders' comprehension of the project and shifted authority and power away from those whose opposition was under pinned by place protective behaviour (Devine-Wright and Howes, 2010). The dispute is ongoing, with the latest high court challenge being ruled on in June 2018. It has been reported that the government worked with the corporate entities to ensure that the project would be realised in spite of local concerns and protests (Cox, 2015; Murphy, 2013; Killian, 2010). The resulting longstanding dispute and unrest can be held as an example of the damage the *decide-announce-defend* approach can do to stakeholder relations (Komendantova and Battaglini, 2016).

In their 2016 study of public preferences for community consultation in Ireland Brennan and Van Rensburg examined how community consultation effects stakeholders' attitudes to onshore windfarm developments and if increased community involvement would allow for decreased monetary contribution in order to boost support. They found that in general participants would be willing to accept less monetary compensation for greater involvement with the project. These findings support those of Klain et al. (2017), Warren and McFadyen (2010) and Sorensen et al. (2002) which show that development and expansion of community windfarms seem to be less problematic when the community is more involved.

6.1. Discussion

The indications are that participation improves the problem of stakeholder engagement and opposition. Local communities who find themselves subject to any large scale development will invariably engage, be it through amicable, constructive processes or protests and obstructive practices. There is a lack of research focused on understanding the factors driving acceptance and opposition of renewable energy which seems to be the keystone to unsatisfactory engagement processes.

The studies which have been done to date have each tended to concentrate on one single area of research, such as physical aspects of the proposed development i.e. location of the windfarm, number of turbines, proximity to stakeholders. Each of these studies are stand alone and isolated examples of specific cases. There seems to be no cohesion or relation to other pre-existing studies. As a result the literature is fragmented and littered with examples of specific points of interest with no interconnection between study sites, or projects. There is a need for studies pertaining to stakeholder perception to be more cohesive and structured in order to create a system to understand best practice and recommended approaches for future studies.

The key reason for developers and policy makers to partake in stakeholder engagement is to attain a social licence to operate. It is evident from the literature that it is the process of engagement which is paramount to the stakeholder. If the approach is goal oriented (Decide Announce Defend) as opposed to process oriented (Inform Consult Involve) the result can be one of conflict, demoralisation and potential failure of the project.

Integral to the engagement process is facilitation. Regardless of methodology used or technique applied, the facilitator can make or break the process. Attributes of successful and unsuccessful facilitators have been identified, but the overall consensus is that experience is the key factor for a successful facilitator and the ability to engage actively, fairly and openly with the stakeholder group.

Timing, transparency, and fairness of process are regularly cited as key components in any stakeholder engagement process. Timing is an area which is common to many aspects including, the need for timely information dissemination, and also the phenomenon of acceptance of developments over time leading to the question of staggered development of large projects in order to facilitate acceptance. Two-way deliberative learning has emerged as a commonly accepted key part of the engagement process; developers learning from stakeholders and stakeholders learning from other stakeholder groups as well as giving input to developers has been shown to be a consistently effective.

Democratic deficit, NIMBYism, qualified support and place protection are the four most common barriers to renewable energy development. Because of the prevalence of democratic deficit and qualified support there have been calls for further study into this phenomenon to address the reasons why it occurs and to examine the reason for this gap. NIMBYism is the most controversial subject throughout the literature with increasing numbers of academics calling for the abandonment of the term, as it carries negative connotations and is too general to describe the underlying reasons for objections, however it continues to be in widespread use and is a convenient way to describe objectors in general terms. Place protection is often misconstrued as NIMBYism, but it has been shown in a number of studies that it is a legitimate and complex reason for objection.

In terms of objectors, three interesting observations emerged from studies conducted around the proximity and experience of windfarms:

1. An increased negative response to potential developments from stakeholders, as opposed to a less negative response when the project is realised. The literature attributes this to heightened *perceived* impacts which, when the project is operational, are not as severe as expected.
2. Objections from those who live further away from proposed sites are more pronounced than those who live closer to the site.
3. In terms of offshore wind farms, seasonal visitors to the coastal areas of proposed farms had a more negative response than those who live in that area year round.

These results would perhaps support the view that engagement needs to be fluid and flexible both temporally and spatially in order to take into account the unexpected nuances of each stakeholder perspective.

Historically there have been two exclusive types of research method used to data collection, qualitative and quantitative, however throughout the literature the use of mixed methods for assessing public perception were common. Quantitative and qualitative methods complement each other and can be used together to more effectively harness more elusive influencing factors, while allowing for concrete data analysis. This allows for a more robust and reliable dataset to be developed and reported on.

Community benefits and ownership were concepts which emerged from this review as being essential factors in steering the acceptance of renewable energy development. Consultation

with the community and correct framing of any benefits offered by the developer is paramount, as there is a risk that community benefits can be seen as bribes which have the potential to backfire on the developer. Included in the area of community benefits is the concept of community owned renewable energy projects, which have shown to have high success rates throughout Europe including Ireland. Although the topic of community benefits has been widely reported on in the literature there is little known about direct community benefits of offshore developments, indeed there is little known about where and how to identify the 'local community' directly affected by offshore windfarms and as such research into potential offshore community owned wind farms is lacking.

O'Mahony et al. (2009) undertook a comprehensive baseline assessment of users of Cork Harbour in order to contribute to any future spatial planning or integrated management plan. This concept of pro-active community engagement could be scaled to a national level in order to gain initial insights into attitudes and perceptions to offshore renewable energy projects in Ireland. In order to avoid the problem of qualified support, it would be necessary to present many local surveys (as opposed to one large national survey) to gain insight into local support or rejection of potential offshore projects. The introduction of the concept of potential offshore renewable energy development could also be useful as a tool to initiate engagement and participation with local stakeholders in each area and gauge potential areas of conflict. The design and choice of research method could draw on existing methods of best practice and employ variations or combinations of existing methodologies.

7.1. Conclusion

This review has reported on the current methodologies used to identify, analyse and map stakeholders. It has informed on the findings of current research regarding what influences public perceptions and the tools available to assess it. The reasons behind undertaking stakeholder engagement have been examined using case studies to illustrate successes and failures of processes, giving attention to the reasons behind objections and the ongoing debate regarding onshore and offshore renewable energy installations.

The levels of stakeholder engagement is a constantly changing arena, with ever evolving models and theories behind interactions between stakeholder, developers and policy makers. This paper examined the changing rationales and philosophies behind the varying levels of stakeholder engagement.

The most important aspects of best practice for stakeholder participation were reported on with a comprehensive list of participatory methods being collated from current research. Examples of success and failures of stakeholder participation and engagement were drawn on to examine Ireland's track record renewable energy development and examples were illustrated of effective and non-effective practices.

The ability to achieve a social licence to operate is a complex one, difficult to harness and impossible to conclude. The area of stakeholder engagement must be approached from many different angles, and perspectives in order to get the most comprehensive understanding of which triggers incentivise stakeholders to firstly engage, and secondly accept renewable energy developments.

The process and every aspect of the process is paramount to successfully engaging with stakeholders. If the stakeholders perceive that they are involved and are making a difference to the decision making process it has been proved that there can be valuable and active input into any renewable project, which will ultimately lead to successful conclusions. The key is to choose trusted intermediaries and show transparency in process.

Despite the Irish governments theoretical support of marine renewable energy development, Ireland's first and only working offshore wind farm was connected to the grid in 2004 (Lange et al., 2018). As a result of this slow progress, the Eirwind project is now in a position to learn from countries which are the forerunners in offshore renewable energy development. Germany and the U.K. have made the greatest advances in this area and as a result, lessons can be learned from the mistakes they have made and guidance can be taken from their successes. Eirwind is now in a position to reduce the deficit of proactive dialogue to engage energy citizens with a long term view of sustainable energy development.

For further recommended reading on this subject please see

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