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A vision and action plan for a low-carbon Europe

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R&Dialogue

European Dialogue Report

Lessons from ten low-carbon dialogues

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Executive summary

The R&Dialogue project has facilitated ten low-carbon dialogues with representatives from energy, the low-carbon R&D community, social actors and others. In each of the ten countries involved, a 'coalition of the willing' explored the challenges and articulated their view on improving the dialogue. This European Dialogue Report is a collection of these experiences, and it reflects upon the themes emerging from those dialogues. Below is a short summary of each chapter of the report. For a set of more detailed recommendations, please refer to the project's Vision and action plan for a low-carbon Europe[1].

Aim of dialogue: what do we mean with vision and why do we create it?

In each country, we endeavoured to create a vision with the dialogue participants. A vision is an idealised image of the future, one that can help any organisation or community in identifying its goals, forging a strategy to achieve it, inspiring for change and give a sense of common purpose to a collective effort. When a highly diverse group of people build a vision together, it is bound to run into a range of challenges. In R&Dialogue, these were some of the challenges and difficulties we encountered: different values and interests; polarised views; different ideas of the future; lack of continued commitment.

How do we set up dialogue and build trust

The ten National Dialogue Councils hosted on average ten to 15 participants and met around five to ten times for half or full day meetings over the course of 2014 and 2015. A wide range of dialogue formats and methods was applied to achieve interactive Council meetings: Roundtable Discussions, Design Thinking, Focusing, Nonviolent Communication, World Café, Future Workshop, Dynamic Facilitation, Dragon Dreaming. Particular attention was also given to other dialogue characteristics as venue, facilitation, rules, relationships and maintaining communication between meetings. Trust has been a focus for R&Dialogue, which prioritised honesty and clarity while striving for an open and inclusive atmosphere.

Different scales of dialogue towards a low-carbon society

The R&Dialogue Dialogue Councils mostly had a national focus. Most concluded that dialogues at the national level are important for e.g. developing national objectives/targets, legislation and fit-for-purpose subsidy schemes. Development of corresponding national energy and climate roadmaps have much to gain from involving civil society and local perspectives through dialogue. Unfortunately, time pressure on decision making can provoke an exclusive dialogue that might seem efficient on the short term, but this can also lead to frustration and delays in the long run.

The climate and energy systems are often international, which makes Europe a suitable level for agreements on targets and to implement a system such as the EU Emissions Trading Scheme. One possible dialogue concept to build further on would be the European Energy Dialogue of the European Economic and Social Committee.

[1] Available on http://www.rndialogue.eu/downloads.php

Relationship of citizens with technology

Citizens have a wide variety of roles in the energy transition: voters, energy consumers, media and information consumers, employees and residents. As such, their opinion of technologies in the energy transition varies as well, along with the corresponding level of acceptance of these technologies.

Dialogue with citizens and civil society on the energy transition can take different forms, including a focus on specific technologies and on the energy transition in general. A positive engagement on a specific low-carbon technology can pave the way for a longer, more open and more generic dialogue. This can also give us more insight in other conditions that enable support for low-carbon technologies and in identifying obstacles such as lack of knowledge or trust.

Energy transition economics and dialogue

National Dialogue Councils often talked about economic aspects of the energy transition: consumer prices, affordable energy, economic interests, resources, import, export, decentralisation, incentives and investments. Besides citizen interests, the inclusion of the energy industry allows for an energy transition that also pays attention to competitiveness and jobs.

Decentralised energy can turn energy consumers into energy project participants or even “prosumers”, which sends the strong message that people can take the energy transition into their own hands – at least to some extent. This may lead to acceptance of low-carbon solutions. Other relevant economic aspects of dialogue are incentives to spark sustainable consumption and investments in the necessary innovations.

Science and civil society

Scientists produce a wide variety of findings with sometimes conflicting conclusions. This can cause confusion, mistrust in scientific findings and lack of action at societal level. Solutions for that could be to create open spaces for continual exchange (and e.g. using Design Thinking) or even “clearing centres” for knowledge. Also, civil society could be consulted at the start of research projects to integrate their perspective in research. Civil society representatives such as local NGOs and citizens groups can be considered valuable experts in the local context, since they often know the people and the local setting best.

Aspects for further dialogue

Many questions remain unanswered. To fully reflect the dialogue in this document, these open issues are noted here as inspiration to follow-up dialogues.

It proved hard to find agreement on the role of transitional technologies and energy sources such as natural and shale gas and CO_2 capture and storage. The role of conventional and non-conventional fossil fuels in the energy transition is crucial to talk about, but difficult to agree on. The best way to support and subsidise low-carbon technologies was another unresolved matter.

Dialogue as a concept has been a topic in itself too. Is dialogue a means towards an end, an end in itself or both? Moreover, many Dialogue Council members discussed the dilemma of how to provide information that is complete, easily accessible and objective. Some participants found it hard to believe this is possible at all. Another open issue is the proper participation of society in a dialogue when the discussed topics do not (yet) directly concern participants.

Keep talking: the future of dialogue

With dialogue now established as a potential key enabler of the energy transition, we suggest a range of ways to continue the dialogue.

Overall, the following stakeholders were identified that are well suited to carry on the dialogue:

• Policy makers and governments in general

• National Dialogue Councils, of which some have expressed an interest in remaining active as dialogue group and think tank

• R&Dialogue member organisations, who have invested much time and effort in successfully carrying out the project and have all expressed an interest in further developing the dialogue.

The dialogue continues at the European level through the European Energy Dialogue established by the European Economic and Social Committee, which is embedded in the Energy Union. E-TRACK of the European Commission's Joint Research Centre is another energy dialogue arena in Europe. Various dialogues at national and local level will build on the R&Dialogue experience, for example by National R&Dialogue Councils that continue working as a think tank.

Introduction: why another dialogue?

There are numerous ways an individual can give input to energy policies in the European Union and its member states. You can, for example, contact your member of a regional, national or European parliament. You can write an answer to a public consultation. Or you can join a civil society organisation whose objectives you share.

If the channels for input and influence are diverse, the interests and perspectives of various groups in society are even more complex. Consumers want low energy prices. Nature lovers want picturesque and unspoilt coastlines and hills. Industry, commerce and energy companies want to run succesful and profitable businesses. Scientists want their expert advice to be heeded. Environmental non-governmental organisations want clean energy and less pollution.

Between 2012 and 2015, R&Dialogue project partners from ten European countries have set up Dialogue Councils with a diverse mix of stakeholders. The main objective has not been to reach an agreement on exactly what a low-carbon society should look like. Rather, we have tried to explore how a multi-stakeholder, low-carbon dialogue can help improve the connection between societal aspirations and preferences and research & development on low-carbon technologies and options. The participants in the project, including the authors of this report, have mixed backgrounds. Some are geologists and natural scientists, some are social scientists, and some are political scientists. This means that the writing style and approach for the various chapters in the report might differ somewhat from each other.

The R&Dialogue project adopted a 'coalition of the willing' approach in order to facilitate beneficial communications between different stakeholders and the research and development communities. Since participation was entirely voluntary, it was inevitable that the stakeholders involved would have to be willing to be involved on a voluntary basis. However, we did not wish to establish a dialogue between stakeholders who all agreed with one nother, as the challenge of climate change and decarbonisation is precisely to try and reconcile very different perspectives on the problem to be solved. Hence, a balance was struck between recruiting the willing while ensuring diversity in perspective. The R&Dialogue approach therefore has two key features. The first is to bring together a broad set of stakeholders, including representatives of the energy and low-carbon R&D community. The second is to use open approaches that allow time and involve activities for dialogue participants to get to know one another and each other's point of view.

The present report outlines challenges with low-carbon dialogue between stakeholders and the R&D community, and gives examples of possible ways of improvement. The report describes the processes that have taken place in the R&Dialogue project's ten National Dialogue Councils. The chapters of the report are divided into the key themes that arose from these ten dialogues.

The vast majority of the public and all too many civil sector stakeholders continue to be ‘under the radar’ as far as senior decision-makers are involved. The conclusion from this project is, therefore, not that Europe needs just another dialogue. We need a different type and style of dialogue, one that is more autentically participative and not captured by elites, whether from private industry and business interests, the public sector or non-governmental organisations.

1 Aim of dialogue: what do we mean with vision and why do we create it

This chapter aims to explain what the ten countries/regions in the project extract from the vision of proper dialogue experience. The origin, as stated in the Description of Work (DoW) of the R&Dialogue project, is the following:

The objective of R&Dialogue project is to organise a dialogue between R&D organisations (RDOs) and civil society organisations (CSOs) that results in a joint vision of CSOs and RDOs on the development of renewable energies and CCS for a low-carbon society and identification of actions to improve the dialogue and associated mutual learning.

Moreover, it is important for the project consortium to stress that the actions we suggest are needed now, not in some medium or long term future.

1.1 Designing a vision: our starting point

A vision is an idealised image of the future, one that can help any organisation or community in identifying its goals, forging a strategy to achieve it, inspiring for change and give a sense of common purpose to a collective effort. The importance of a clear vision tends to be underestimated in a society that most of the times prizes what is immediately tangible. However, a vision is necessary when one seeks ambitious goals in a distant future, and when these goals require immediate action.

Since the use of low-carbon technologies is a societal challenge, we have developed our own definition of a dialogue on low-carbon and sustainable energy options:

“Dialogue is an encounter where two or more people exchange, communicate and understand different feelings, perspectives and points of view, through an open, fair and respectful process and cooperation, because the use of low-carbon technologies is a societal challenge.”

Producing a vision implies a practical exercise of creative thinking. However, realities, experiences and idiosyncrasies of the ten countries involved in the R&Dialogue project are diverse. As a consequence, visions and how to implement them result in very different approaches. This is the challenging and productive result that lies in the spirit of the project and that shapes its added value of sharing experiences, learning from each other and striving to build a path together.

Although different starting points have been taken from each country depending on its own reality, a general overview of the ten visions can be presented in terms of geographical and temporal dimensions (see table 1).

COUNTRY	GEOGRAPHICAL DIMENSION	TEMPORAL DIMENSION
Czech Republic	National	2050
France	National and local	2050
Germany	Regional	2044
Greece	National	2035
Italy	General and local	Not specified
Netherlands	National	Not specified
Norway	National	2050
Portugal	National	2044
Spain	National	Not specified
United Kingdom	National (Scotland)	Not specified

Table 1. Overview of geographical and temporal dimensions in R&Dialogue national visions.

Most have adopted a national scope. There are several reasons for this. The British team has focused on Scotland, due to the coexistence of different climate change policies and the different stages in the transitions to a low-carbon society in the four nations of United Kingdom. Their vision includes aspects which are Scotland-wide and others which are related to particular places or institutions but which could be replicated. Furthermore, the UK team have found it much easier to engage people in trying to find solutions to local challenges that can be scaled-up at the national scale rather than large capital intensive projects such as e.g. a CO_2 capture and storage (CCS) facility. In Greece, the process was conducted at national level, due to the fact that a Greek energy roadmap and all the relevant directives and targets are addressed at national level. The small size of the country guided the Czech Republic to a national view. In Spain, the competencies of the public bodies and agencies are complex. The dialogue has taken place at the national level, but with representatives from local, regional and national levels present at the same time. In Portugal, the national scale seemed an obvious choice as regions in the country are not autonomous. In Italy the vision followed from the strategic choice of the Council of getting involved with citizens. It encompasses a general and universal level and a local concrete and specific level. The local part of the Vision was developed in the context of the more general framework elaborated by the Council, and was the fruit of the interaction with the local community.

There are different levels of development and speed in the implementation of actions towards a low-carbon society. Therefore, different temporal scopes have been proposed in various visions. Some countries, such as Greece, Czech Republic or Germany, adopt a view which looks towards a specific point in time (e.g. the year 2050). Others, like Spain and Scotland, explain that the insights regard possible components in the general transition to a low-carbon society, rather than being a picture of the future at a particular point in time.

When they chose to focus on a specific point in time, the countries also differed in the time frame and in the justifications for doing this. Thus, Greece produced its vision with a time frame of two decades (2035 approximately), looking for a timeframe where all the actions proposed in the vision would be feasible and realistic. In this case, and keeping in mind two key dates for international roadmaps, the Greek Council have considered that taking 2050 as a reference point could be too far away in time, while 2020 was too close. The Czech Council agreed to work with the horizon of 2050, which is compliant with the European Commission's decarbonisation roadmap, although there is no comprehensive national low-carbon strategy/policy that would correspond to the EU 2050 roadmap. Moreover, other national documents and policies work with different time dimensions (for example the update of the Czech State Energy Policy works with the horizon 2040). In the case of the German national dialogue, 2044 has been the agreed time framework due to its proximity to the final stage to reach the North Rhine-Westphalia climate mitigation targets and also because it is a timeframe within which all participants in the Council may still be alive. In this way, they will realistically be able to picture themselves in a low-carbon future that they themselves envisage[2].

1.2 Shaping a joint vision

The process of preparing a vision can motivate and move people to explore unknown possibilities and could encourage unpredictable thinking. There is no set structure for the process of dialogue itself; it is a process of self and mutual learning, and it is flexible enough to be adapted to the changing reality if necessary, as long as it remains open, fair and respectful. The establishment of a vision is dependable on each partner country's situation, the National Councils that were put together, the work that was done, etc. For example, the original idea in Greece was to produce a vision paper that would end in the hands of the Ministry and it would be at their disposal in case they need to consult it. However, previous unsatisfactory experiences of dialogue processes in the country have caused a feeling of fatigue among the stakeholders. That resulted in lack of participation and collaboration from the whole range of stakeholders. Consequently, this impacted upon the initial positive expectations. But it should be noted that despite this general reluctance towards dialogue processes, the R&Dialogue Greek Council made the effort to promote and move forward with the dialogue in the country and succeeded in producing a Vision Paper. Nevertheless, it should be noted that it doesn't reflect the whole society since not all the stakeholders' groups were in the Council.

[2] The methods Dragon Dreaming relies on the imagination of the participants how the future looks like they will live in. Further information: http://www.dragondreaming.org/. See also Annex: R&Dialogue Theories and Methods.

This is to say that, among other things, the way the dialogue can lead to a vision is sometimes unpredictable. It could also yield no vision, which would be a result in its own right, or to multiple visions, which would need to be reconciled among those involved.

The R&Dialogue project aims to develop national and European visions. But is it really possible to establish a joint vision (national or European) within the scope of the R&Dialogue project? This depends on what we mean by 'vision'. It is probably possible to establish some kind of a 'vision' in the sense of it being a perspective on a possible ambition for the future that is proposed by the individuals involved in R&Dialogue based on what we have learnt from the dialogues we have been engaged in. But we need to be clear that it is just *one* vision, not *the* vision. There are many different, equally valid ways of framing the problem and its possible solutions. Therefore, according to the Scottish team, our 'vision' should simply sum up the insights we have gained from this particular process. At the same time, as pointed out by the Italian team, the individuals producing the specific vision are part of their cultural environment and bring with them all its contents and contradictions. We can therefore expect that the vision produced will often resonate with other members of their social context. In this way, the exercise made by R&Dialogue participants could provide impetus for more energy visioning in Europe.

Another aspect would be whether there should be full agreement on all the points included in a vision document. The Czech team stated that their vision is not a common, generally accepted national vision. It includes options (especially concerning the ways on how to reach the goal in the best way) and in some places statements of disagreement. For the Italian team, what is key is including in the document those aspects which unite people more than others. After all, one function of a vision can be to unite and drive coordinated change.

The Dutch team has focused the vision on the role of dialogue in the energy transition. This is because in the country, before the meetings of the Dutch R&Dialogue Council started, a National Energy Agreement was developed establishing a vision to achieve the goals and objectives on energy policy set for 2020. This vision was created by forty stakeholders active in the country. Dutch politics has embraced the outputs of the National Energy Agreement and is continuously seeking to improve legislation and policy in order to meet the objectives of the agreement. The National Energy Agreement vision has not raised the expected interest and collaboration of the populatio. In Portugal, despite the inspiring and consensual co-creation of a vision for a low-carbon future, there was a perceived difficulty in what regards the creation of dialogues on specific Plans and Projects to achieve the vision.

In the processes of agreeing on common visions, the R&Dialogue project's dialogues faced diverse types of challenges, such as:

- Different values and interests, dealing with different interests or stakes of stakeholders and polarization of interest (pointed out by Germany, Netherlands and Czech Republic). The German team has pointed out that "it is only possible to have a general common vision, but the details are rather diverse."

- The Dutch team has listed conflicts like: a) not all stakeholders are willing or able to speak openly about their interests; b) not all stakeholders are able to share their interests; c) difficulty to create a dialogue with a multitude of stakeholders and d) lack of a common goal to work towards (some stakeholders consider working together too high a risk for their image and interests).

- The Czech team has noted the polarisation of the stakeholders in two strong antagonistic groups: "traditional energy" and "green renewables". These groups persist in keeping their opinions and positions, which makes creation of a common vision almost impossible.

- Difficulty to get all participants to agree on a single common vision for the future (Scotland). Therefore, the approach that was taken was to assimilate all the different outputs from R&Dialogue activities into a single document which reflects the insights and ideas that emerged, and comments on how these might be taken forward in the future.

- Less attendance than estimated (Greece). A vision was nevertheless produced, and this was based on the discussions and on the opinions of those who did attend.

On several occasions, the importance of the dialogue *process*, as well as the resulting solutions, has been highlighted.

The Scottish team has found that there is always a normative justification for creating a space for people to engage with each other on complex issues. Therefore, they acknowledge that even if the stated purpose of the dialogue is not achieved, the process in itself is likely to have benefits such as social learning, reflection and a feeling of inclusion for participants. However, it is not evident that the concept of a national or international-level dialogue (in the sense of an open, honest, value-based, exchanging of stories) on low-carbon transitions is necessarily feasible in the existing politico-institutional context. From the Scottish team's perspective, a national or international dialogue must take the form of lots of smaller dialogues around specific issues which can feed in to the national/international decision-making processes. For many countries, it is not actually dialogue itself that is lacking – people are engaging in dialogue all the time. The Scottish team concludes that we need to concentrate on – and this

is currently lacking – an effective means of converting the outputs of dialogue into policymaking and action.

The experience of the Italian team seems to point in a different direction. While there are many opportunities for people to meet, skilful dialogue appears to be a rare experience. In particular, dialogue among stakeholders of different sectors (for instance between science and civil society or between science and policy, or between industry and civil society and so on) was generally found to be missing. Converting the outputs of dialogue in policy making and action would be much easier if policy makers were taking part in the dialogue with civil society stakeholders. From this point of view, a better understanding of how the conditions for skilfuldialogue can be created could build the premises for starting a virtuous cycle of creating visions through reciprocal understanding. These visions would then lead to solutions and action.

In the Netherlands dialogue, the two concepts of dialogue and solutions are considered to be equally important. For the Dutch National Council, the topic of energy transition or dialogue on the energy transition demands a clear solution or common vision as well as a process towards creating this solution or common vision. This intermediate view is shared by a member of the Greek National Dialogue, who declared that “so far, the actions have shown that the solution is more important that the dialogue. Most of the times, the problems demand immediate actions that don't leave space for dialogue. On the other hand, one could object to that as there is always time for dialogue, especially if you have set the base beforehand”.

1.3 Conclusion

The concept of a ‘vision’ means different things to different people. Whereas all Councils have strived to reach a common vision, most believe that the process in itself is valuable, even if the measurable outputs are not always very concrete. A ‘vision’ serves the purpose of inspiration, rather than bringing a conclusive end to a discussion once and for all.

2 How do we set up dialogue and build trust

2.1 Introduction

This chapter reflects upon the experiences that project partners had in establishing and sustaining a constructive and meaningful dialogue process at the national level. First, we introduce the R&Dialogue approach on which the set-up of the national dialogues was based. Then we consider the composition of the ten Councils, reflecting on the differences in the types of stakeholders that were involved and the influence this had on the process and outputs. Following this, we examine how and why the format and facilitation of the dialogue processes varied between countries, and the lessons we have drawn from these different experiences. Finally, we identify and explain how building and maintaining trust has been a particularly crucial component for success for all countries at all stages of the dialogue process.

2.2 The R&Dialogue approach

The central ambition of the R&Dialogue project was to establish a deep and skilful dialogue between a diverse group of energy stakeholders within each of the ten participating European countries. In order to achieve this, a common framework for the dialogue activities across these countries was developed, based on the Demand Analysis[3] approach, integrated with contributions from humanistic psychology such as Nonviolent Communication (Rosenberg, 2003; 1999) and Focusing (Gendlin, 1997; 1982). For more information about these and other methods used in the project, see the annex "R&Dialogue Theories and Methods".

Common criteria to support the dialogue action were identified through the exploration of emotional dimensions and elaboration of consortium exchange. Four basic principles were proposed to inspire the work of the country teams with the stakeholder group of each National Council:

1) joint definition of the objectives of the dialogue activities (ownership of the objectives on the part of the National Council, within the project's framework);

2) dialogic support based on a listen and feed-back process (listening to the National Council members as a group and reflecting back with an empathic and responsive approach to help the Council elaborate and make decisions);

3) establishment of functioning rules for the dialogue group agreed by participants;

4) use of interactive settings (to facilitate learning to know each other, mutual understanding, knowledge sharing, circulation of ideas, etc.).

[3] The Demand Analysis approach has been developed in Italy by Carli and Paniccia as a specific framework for clinical psychological intervention in a variety of contexts, from individual psychotherapy to group and organizational change. For a brief presentation see Vercelli et al (2014) and for full reference see Carli and Paniccia (2003, 1981)

This common framework was not prescriptive regarding the precise format and delivery of the dialogue process. As the documents produced by each country team demonstrate, the current position in the transition to low-carbon society in each of the ten countries involved in R&Dialogue is different. Furthermore, each country involved in the project has a different history of stakeholder engagement and dialogue on low-carbon energy issues and, consequently, the level of interest or familiarity – and perhaps also fatigue – amongst stakeholders varied across the countries. Consequently, having established this common framework, the country teams were encouraged to design a dialogue process that would best suit the national context, taking into account the specific needs and interests of local stakeholders.

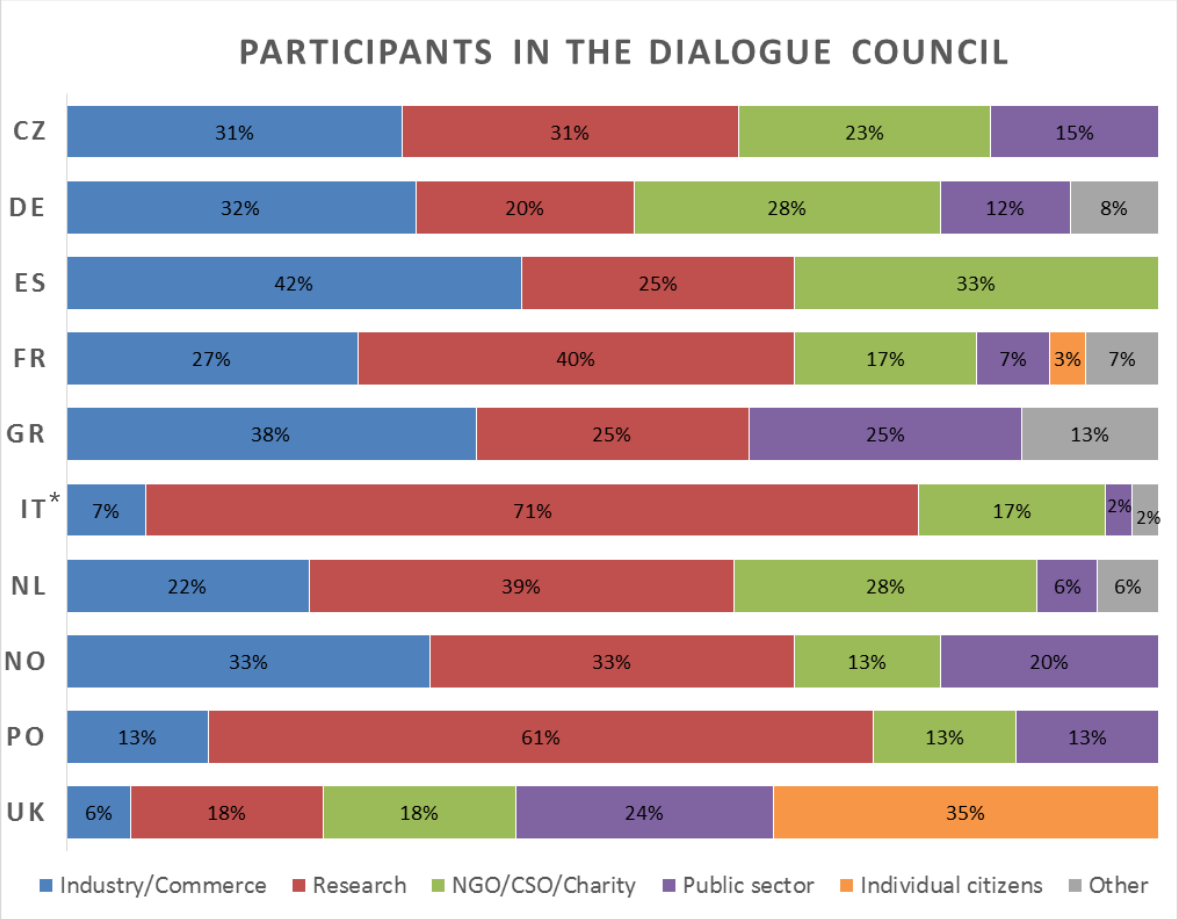
The R&Dialogue activities, therefore, developed and evolved quite differently in each country, in a way that was sensitive to the particular context in which they occurred. These variations have inevitably influenced the nature of the dialogue that took place, the people that were empowered and the issues that were prioritised. As Escobar et al (2014) notes, "At every step when you design and facilitate a public engagement process you are making political choices: from the location and timing to who is organised in and out, to what knowledges are included or what patterns of communication are fostered" (p.96). These are often conscious and intentional choices of the organisers which are explained and made public. But they may also be latent, subconscious or concealed choices, which arise from the organiser's underlying values and framings of the issues and their perspectives about the proper way to conduct a dialogue process. In R&Dialogue these choices were the object of constant exchange and reflection. In addition to the Demand Analysis approach and in its context, the Emotional Text Analysis (ETA) (Vercelli et al, 2014; Carli and Paniccia, 1981, 2003), was used to raise awareness of the country teams on the choices they were making and their implications. The objective was to maximise the chances that the dialogue experience could become a carrier of change, being generative of new relationships and activities in the field of energy innovation.

The dialogue was framed in ways that were respectful of cultural characteristics, conscious of local fears and wishes and aware of specific assets or limitations. This was meant to increase the likelihood of a skilful dialogue process. The work for making explicit and elaborating emotional and unconscious aspects of the dialogue action accompanied the activities throughout the project. It was an essential part of the overall work on the social process, which included regular periodic workshops and continuous exchange in the consortium and it allowed each country to develop a unique and original energy dialogue experience.

2.3 The composition of the dialogue

R&Dialogue strived to establish channels of communication between a diversity of stakeholders with contrasting perspectives and priorities regarding a low-carbon energy transition, to forge partnerships and facilitate cooperation. As such, a key theme encountered and discussed during the process of founding and implementing the dialogue was that of achieving a 'balance' of stakeholder interests within the Dialogue Council, which found different interpretations by the country teams. As Graph 1

shows, the composition by sector of each Council varied considerably between countries. These differences reflect the different choices and experiences the country teams had when it came to identifying and recruiting a diverse group of stakeholders.



* *Although individual citizens were not formally included in the official Dialogue Council for Italy, it should be noted that many citizens participated in, and contributed to, the Council activities, as explained below.*

Graph 1: Proportion of Council members from each sector

It is inevitable that the reputation and relationships of those initiating and hosting a dialogue process will, to a certain extent, influence the people who are involved in that dialogue. Within the R&Dialogue project, this is particularly well illustrated by the experiences in the Netherlands and Greece.

The Dutch R&Dialogue partners have strong existing relationships and a positive reputation within the energy industry in the Netherlands. The team found this to be very beneficial in helping to attract a number of high-profile stakeholders to the Dutch Council. In particular, they were able to secure a former director-general at the ministry of economic affairs and chairman of the supervisory board of the company Gasterra, to chair the Dutch dialogue process. As a well-known and respected actor in the Netherlands energy sector, this individual added further legitimacy to the Dutch dialogue process which, in turn, helped to gain the trust of other key stakeholders. However, the R&Dialogue partner's reputation for working closely with the fossil fuel industry was not beneficial for gaining the trust of all stakeholders. In particular, this reputation made it more challenging for the Dutch team to gain high

levels of trust from environmental organizations, who were fearful that they would be overpowered by the other members of the Council, and would not agree with the outputs of the dialogue. As a consequence, only two of the original Dutch Council members were from environmental NGOs.

The team in Greece also found it more challenging to recruit Council members from social and environmental organisations. This mostly had to do with logistics/funding of travels, and because an NGO was unhappy with the composition of the Council. The Greek team found that stakeholders from within the energy industry and research were well-informed on the issues R&Dialogue was addressing, and most had experience of previous low-carbon dialogues. In contrast, civil society organisations (CSOs) and environmental NGOs were much more difficult to engage. Although a number of CSOs and NGOs agreed to be interviewed during the pathfinding phase, only one expressed an interest in being part of the Dialogue Council. For the environmental NGOs, as with the Dutch experience, the main objection was dissatisfaction with the composition of the National Council. They stated that they would prefer to initiate a dialogue process themselves so that they could have more control over the parties involved and issues discussed. Unfortunately, the one CSO representative that accepted the invitation to the Council and attended the first meeting could not participate in the rest of the dialogue due to a lack of resources to cover the travel expenses (and the offer of a teleconference was not accepted). The Greek team raised the issue of a lack of CSO and NGO representatives with a wider Greek audience during the later stage of the project. It was then discovered that everyone who had previous experience with dialogues had faced the same problem.

As the graph shows, for many countries, there was a large representation of stakeholders from research. This was particularly true in Italy and Portugal, where researchers made up over half of the Council. In Portugal, the team found that the R&Dialogue theme was of particular interest among researchers as they have been challenged to become closer to the public, and have been requested time and again to explain complex matters such as energy, climate change and sustainability issues. More and more attention is being paid to the interaction between research and the non-specialist community, so researchers seem to have been more available and willing to explore new paths for dialogue. During the national dialogue activities, this asymmetry was tackled in order to progress towards a more balanced set of participants.

In Italy, the composition was guided by the focus of the project on research and civil society dialogue. Therefore the country team aimed to the representation of a variety of energy research sectors in the

Council, together with an equal share of civil society organisations. However, as in other countries, there was a greater responsiveness of the research organisations, which led to an even higher representation of these in the Council. This was only partially related to the fact that the Italian R&Dialogue partner was a university, something which certainly encouraged participation of other research institutions.

Making a closer examination, an important factor in this process was the constraint in time and resources. In other words, the work implied in getting the involvement of stakeholders from different fields than one's own, requires longer time and greater effort. Some non-research stakeholders required many initial contacts before a good enough communication channel was established, and this was not always possible to pursue within the limits of the project. However, the high number of researchers in the composition of the Council was balanced by the fact that the Council undertook the enlargement of the dialogue to a local community. The meetings of the Council therefore progressed together with the meetings with the population. It was very interesting to see that at local level the involvement of environmental NGOs proved much easier. The interest of the Council for the concrete problems which are near to the people created a favourable situation, where it was easier for everyone, including environmental NGOs, to participate to the exchange and discussion. Another important criterion that regulated the composition of the Italian Council was self-selection of the organisations, based on their interest in participating in the project. This proved effective in ensuring a fairly stable and constant participation.

The UK had a significantly different Council composition to other countries. This was primarily due to the fact that the UK team decided to include a significant representation of 'non-expert' citizens. The inclusion of citizens had a significant impact on the dialogue process in Scotland. This was the fundamental driving factor for employing a specific interactive method, called "Design Thinking" (see annex "More on R&Dialogue theories and methods" for more details of this approach). This provided a facilitating framework for the dialogue with a group of people with varied backgrounds and was instrumental in driving the types of outputs generated. Furthermore, because a large proportion of the Council did not have any technical expertise in renewable energy options, and as there were a significant number of representatives from public institutions, the topics of discussion were focussed primarily on designing socially attractive low-carbon solutions in specific social contexts, , as opposed to the relative merits of different technologies (which is not an exercise which would work well in a Design Thinking approach).

In Spain, in order to attempt to minimise the influence of the R&Dialogue host institution on the make-up of the Dialogue Council, the name and role of the institution – which focuses on the development of Carbon Capture and Storage technology – was consciously moved into the background. This was done to avoid the dialogue being associated with a specific technology. To encourage the participation of stakeholders to an open exchange on a variety of technologies that the project aimed to cover, all communication was delivered under the umbrella of 'R&Dialogue Spain', as opposed to any particular organisation.

The Czech Republic also believe they got as close as possible to a Dialogue Council which adequately represented all the stakeholder groups. However, the team found that achieving this 'balanced' and diverse group of stakeholders can increase the difficulty of facilitating a dialogue. Whilst the Council incorporated a wide range of perspectives on low-carbon issues, it was found that this diversity of views made it very difficult to come to any unanimous decisions or to agree on a consensus. This was particularly the case in the early phases of the dialogue process, when individuals were more likely to stick to their pre-existing official positions. Therefore, they found it beneficial to ease gradually into the dialogue by discussing light, relatively uncontroversial topics to build up relationships and trust before moving on to more difficult and complex problems.

It is important to note that the R&Dialogue project was established with the intention of recruiting a 'coalition of the willing'. Therefore, ultimately, the stakeholders who were involved were limited to those who were willing to be part of a dialogue process. Many country teams found that the stated purpose of the dialogue had a significant influence on whether certain stakeholders were interested in the process or not. For example, some stakeholders were more willing to participate when they were made aware that the purpose was to inform national or European policy, whereas others were more interested in networking and making connections. In addition, many of the country teams consciously chose to invite stakeholders who they expected would be willing and able to engage positively and constructively to a dialogue process. An interesting avenue for further work, therefore, would be to find out what could motivate those stakeholders who are currently less enthusiastic about the notion of a low-carbon dialogue as, arguably, these are the stakeholders that it is most important to reach. One approach could be to offer incentives for participation. In the UK, compensation was paid to participants to cover the time they contributed and expenses incurred. The fee paid was tokenistic for professionals but acted as an important incentive for members of the public who participated, and allowed a better balance of participation.

2.4 Dialogue methods

In the process of setting up the Dialogue Councils, each country team had to make decisions about how the meetings should proceed, including, for example, the duration of the meetings and the number of meetings that would take place, as well as design the format and assign facilitation responsibilities for the meetings. Table 1 provides an overview of the different approach taken by each country.

	Number of meetings	Meeting format	Dialogue rules
CZ	10 x half day	Facilitated whole- group round-table discussions and presentations with Q&A	Some communication rules were set, including 'non-violent communication'
DE	5 x half day	Different methods for each meeting: - 'World Café' - 'Future Workshop' - 'Dynamic Facilitation' - 'Dragon Dreaming'	'Chatham House Rule' was used
ES	3 x half day	Whole group round-table discussions	No specific dialogue rules were decided
FR	7 x half-day + 3 x 2hour + 1 x full day	Sub-group round-table discussions, followed with whole group round-table discussion	'Non-violent communication' rules were used
GR	4 x half day	Whole group round-table discussions	Some rules were set by the Council, for example, a time limit was set for initial comments to ensure everyone had a say before opening up to an unrestricted dialogue process
IT	7 x half day + 3 x weekend + 1 full day	A range of plenary and sub-group interactive activities, including, focusing exercises, creative activities using movement and imagination, an Energy Festival, and video interviews.	A specific set of rules was agreed (inclusive process, listening, flexibility, positive competitiveness, playfulness, modified 'Chatham House Rule', responsible participation)
NL	6 x half day	Two presentations followed by Q&A and a round-table discussion.	No specific dialogue rules were decided
NO	6 x half day	Whole group round-table discussions and "World Cafe"	'Chatham House Rule' was used
PO	1 x full day + 2 x half day	"Dragon Dreaming" and "World Cafe"	Some communication rules were set (e.g. only the person holding the 'talking stick' should be speaking; use constructive, not destructive, vocabulary)
UK	2 x weekend 4x half-day workshops	Design-thinking workshops	The dialogue followed the principles of design thinking (e.g. 'Defer judgement'; 'One conversation at a time'; 'Be visual'; 'Encourage wild ideas'; Build on the ideas of others')

Table 1: Overview of each country's approach to the Dialogue

As this table shows, the number and duration of meetings varied widely across the ten countries. On average, between four and seven meetings were held by each country, although some countries held just two or three face-to-face meetings, and some as many as 18, with the meetings varying in length from two hours to whole weekends.

In addition to the number and duration of the meetings, the other major variations between the countries were related to the dialogue format, facilitation, rules, venue and additional communication methods. These will be discussed in more detail below.

Dialogue format

The format of the dialogue can have a significant influence on the nature of the interaction between the participants. Many teams followed a traditional 'round-table' format, whereby the whole Council sat together and discussed various issues openly. Germany, Portugal and the UK used other established formats, including Dragon Dreaming, Design Thinking, and World Café.

The Italian dialogue process used a range of formats, which developed in time following the dialogue strategy decided by the Council, which soon included participation of a local community. Round-table exchange and group work were structured and managed to encourage reciprocal listening and involvement, also with the help of Focusing exercises and the use of creative and imaginative activities. A variety of dialogic sessions were designed by the country team, which culminated with the organisation of an Energy Festival, as an unconventional context and format for reciprocal acquaintance, listening and exchange between Council members and citizens on the Vision for a low-carbon society.

The Greek team started the dialogue process by implementing a very precise structure of the meetings. This was designed to ensure a fair dialogue. For each sub-topic, the members had a limited time to comment and, at the end, they could freely express their opinion and respond to the comments of the other members. This approach aimed to avoid overlapping voices and allow everyone to be heard.

The German and Portuguese teams both used the 'Dragon Dreaming' and 'World Café' formats to structure different meetings, and the UK chose to use a 'Design Thinking' model to structure their dialogue process. These methodologies were used in order to create a process different from the meetings to which participants are used. These methods foster creativity and exchange in a group.

Other country teams found that the final number and type of participants involved shaped the type of process conducted. For example, in Norway, the intention was for the Council to split into smaller groups during the meetings to work on particular issues. However, when the meetings took place, they found that this was not a particularly successful format, partly because all Council members were not present at all meetings, so it was a rather small group at some meetings and it made more sense to do discussion in plenary. Flexibility and readiness to adapt the programme depending on the roll out of dialogue can be important to ensure success as well as involving the participants when these decisions may be necessary. During the process, the Norwegian team also found it worked well when they prepared draft texts for the Council to work on and develop further together during the meetings. They found that the Council members responded well to having the opportunity to produce some concrete outputs together.

Other country teams used also techniques such as relaxing exercises, social interaction games for team-building during the meetings, or providing news or objective data from official reports which could introduce the discussion and prompt input.

Facilitation

Whatever format a dialogue takes, it should be an open, honest, and non-judgemental forum in which participant's perspectives are valued equally. This can be a difficult and complex task. There are often entrenched, unconscious power hierarchies within diverse stakeholder groups, and some stakeholders may feel intimidated by the process and by the other stakeholders involved, which can restrict or alter their contribution to the dialogue. As such, effective facilitators, or chairpersons, can be a crucial component in creating an atmosphere which enables a productive, collaborative dialogue. As well as organising the meetings, in the majority of cases, a member of the R&Dialogue country team acted as either the primary facilitator, or chair, of the dialogue during the meetings.

It should be noted here that there is a subtle, but important, difference between a 'facilitator' and a 'chairperson' with regard to the active involvement of the country teams in shaping the direction and content of the dialogue. Facilitators remained strictly neutral on the substantive discussions occurring within the Council, not contributing to the debates or answering questions on the topics under discussion (even if they knew the answer or had an opinion). A facilitator takes no ownership over the content of the dialogue and, therefore, does not try to influence this, but helps to draw it out from the Council members. Whilst the facilitators are likely to have identified some key questions to be covered by the Council before the meetings, they were flexible on the content (for example, if a particularly interesting, unexpected discussion began, they may have decided to allow this to continue rather than move on to other planned topics). Overall, the facilitator's primary role was to ensure that the Council members all expressed their viewpoints effectively and that everyone had their say. In contrast, a chairperson had a more active role in shaping the content of the dialogue process. They acted as a mediator between different viewpoints, and responded flexibly to different needs and preferences of the participants, but also retained a reasonably strong steer on the overall direction of the Council and contributed their own knowledge and experience to the discussion (and actively drew upon this in formulating the vision). The chairpersons tried to synthesise the different viewpoints, looking to reach consensus amongst the Council members wherever possible.

Whichever role they took, chair or facilitator, the country teams tried to give the floor to those that wanted to speak, encourage others that didn't interact a lot, and ensured that all the topics were covered and received the necessary attention. In some countries, including Norway and France, a member, or members, of the Council supported this role. For example, in Norway, each meeting (except the kick-off meeting) was hosted by a different Council member. At the start of the meeting, the host would briefly introduce and explain the activities of their institute or organisation. The Norwegian R&Dialogue partners felt, as well as helping the participants get to know each other better, this helped to create ownership of the dialogue process among the Council members. In France, the

R&Dialogue partners organised the dialogue into small thematic groups. For each group, they choose one 'co-president' who had the expertise the French team did not have on the subject to be discussed (wind power, oil and shale gas, European construction, or territorial organisation of the energy transition). The role of the co-president was not to facilitate the meetings, but to help the R&Dialogue team with the meeting preparations, including selecting the participants to invite and selecting the specific subject and issues to discuss. In Italy, members of the Council supported the country team in facilitating the exchange with the local population.

The Netherlands and the UK were the only countries where the overall responsibility for facilitating the dialogue was passed to a Council member or an external professional facilitator. In the Netherlands, round-table discussions were preceded by presentations from experts on particular low-carbon topics. In this type of format, where the event is set up as an 'expert' presentation followed by a question and answer session, there is a danger that an explicit hierarchy develops in the group whereby the 'non-experts' defer to the 'experts' on the subject. In order to address this, expert facilitation was vital. The Dutch team appointed a chairperson who is a well-respected leading figure in the field of energy, and who they knew would be very well able to guide the discussions and provide focus when necessary. Having made this appointment at an early stage of the project, the Dutch team found that the chairperson's authority and status certainly helped in the development and image of the project. This increased the willingness of others to participate, and raised the gravitas of the topics that were discussed.

In the UK, the design-thinking approach was specifically chosen in an attempt to address the issue of hierarchy and power in the dialogue. As the process was new to all the participants, and to the UK team, an expert in design thinking was employed to facilitate the national Council meetings. This ensured the process was procedurally correct and encouraged Council members to buy into the process, which enabled the full benefit of design-thinking to be experienced by the group.

In addition to an experienced and competent facilitator, almost all country teams introduced some kind of 'rules' for the dialogue.

Rules

Many country teams choose to set clear rules for the Council members to follow during the meetings, such as, listening without interrupting, treating all dialogue members equally, and striving for open, transparent and respectful communication.

To ensure the openness and free sharing of thoughts, the German, Norwegian and Italian teams formally employed the 'Chatham House Rule': "When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed." [4]

[4] http://www.chathamhouse.org/about/chatham-house-rule

The Norwegian team also made it very clear that the Council members should be seen as ‘resource people’ who represent themselves, not their employers, in this project. The Council felt that this meant that everyone could speak more freely and not fear that anything they said could be used against them and that quotes from the meetings should not be shared without approval. Other country teams also stressed to the participant that they were taking part in the dialogue as an individual, rather than as an employee of a particular organisation with a particular expertise or role. For example, in the French process, during small group meetings participants were introduced without mentioning their job.

The French team used the ‘Nonviolent Communication’ framework to ensure a peaceful and understanding discussion. The four basic principles of nonviolent communication are: listening without judging; observing one’s own feelings and thoughts; identifying the human need behind the feeling; and expressing oneself without negative feeling or words.

The Italian team took inspiration from Nonviolent Communication principles too, but also extended the proposition of rules to several other aspects to clearly define the situation for the new and diverse group of stakeholders. The concept of group rules was developed as a form of self-regulation. The group process was defined as inclusive (importance of considering all positions, without exceptions, to understand energy issues); based on listening (taking time to empathise and understand before reacting, allowing enough time for expression to everyone, etc.); flexible and open to change of programme when necessary; avoiding of judgement, which creates tension, and favouring positive competition games and learning by playing; respectful of privacy (Chatham House Rule); reliant on personal responsibility.

Other teams did not set out any particular rules at the start, but used various methods to encourage a fair process. Some of these were quite simple tools, for example, the Portuguese team used an object which was passed around the group and empowered participants to speak without interruption. In order to facilitate a constructive dialogue, the Portuguese team also asked participants to avoid using "but" words and replace them with "and" words. As part of the Design Thinking process, at the start of the first Dialogue Council meeting, the UK asked participants to reflect on, and share, their known strengths and weaknesses when participating in a group discussion or working as a team, for example, talking too much, being shy, being judgmental, not listening. This helped participant to better understand the dynamics in the group but also to get conscious of their own responsibility in the evolution of the dialogue.

Venue

For determining the venue of the dialogue, the most important factor was to make it easy to access for the Council members. It was important that the location did not exclude, or deter, certain stakeholders. For this reason, many countries elected to hold the meetings at a neutral location, rather than, for example, at the offices of any of the Council members.

In some cases, the location of the meetings was particularly important due to the geographical dispersion of the Council members. The team in Norway addressed this by arranging for the meeting location to rotate, with different Council members hosting each of the meetings. In Spain, Madrid was chosen as the most appropriate meeting point, mainly because most of the stakeholders worked there and this fact facilitates travels, agenda availabilities and, consequently, increases the attendance at events. In this sense, a successful outcome has been reached proposing a neutral venue, geographically and conceptually speaking, to host meetings.

The Spanish team found that allowing Council members to send 'proxies' was also an effective way to enable participation. Whilst all the members of the Spanish Dialogue Council attended the kick-off meeting, in subsequent meetings, if these 'official' members of the Council have not been available, a proxy or substitute has been designated for their representation. This enables all stakeholders to be represented throughout the process, without placing too much pressure on individuals. One could, however, argue that such an approach would disrupt the dynamics of a group, as trust has to be re-built each time if there are different people in the room. Some country teams (including Greece and Norway) made participation via video conferencing available for those who were not able to attend the meetings in person.

Ongoing communication

In addition to face-to-face meetings, most country teams maintained additional forms of communication, such as telephone, email, and social media. The Norwegian team established a public blog, where half of the Council members have written posts. These have, in turn, been shared in social media. The Italian team opened a Facebook page which has become a channel for sharing with both Council and local population members. Most of the ongoing communication tended to focus on encouraging the Council members to comment on documents linked to the dialogue process (the preparatory documents, the discussion paper, and the vision paper) and, generally, the dialogue outside of the proposed working structure was rare. In some cases Council members sent emails with interesting events or initiatives or a LinkedIn discussion group was created. The Italian Council has email exchange as a preferred channel in between meetings, where interesting discussion have taken place. It was difficult for all countries to take full advantage of the possibilities offered by social media and data sharing facilities, due to the high resource requirement of

maintaining this kind of contact. Even though participants were highly interested in the topics raised by R&Dialogue, few were able to dedicate significant additional time to the process beyond the meetings.

Overall, it was discovered that different stakeholders were more willing, or more able, to engage and contribute to the dialogue process in different ways. The Spanish team, in particular, found during the preparation and pathfinding phase that some stakeholders were very active on social media and via email communication but were less likely to attend events or face-to-face meetings. Others would be more interested in participating in formal meetings. The information of these diverse reactions was valuable to plan and customise actions that lead to the most suitable performance of the dialogue process in Spain. This highlighted the importance of adapting and finding ways for different stakeholders to contribute to the conversation effectively, rather than requiring stakeholders to fit a particular model of communication.

2.5 The importance of trust

Despite the substantial differences in the way that the dialogue was set up and managed, all countries found that trust was both a precondition to participants agreeing to be involved in the dialogue, and an essential element of the process once the dialogue activities were underway. As Allwood (2014) argues, "…trust is so basic to dialogue that it can be said to be a kind of default mode of the interaction and communication that takes place in dialogue" (p.197).

Relationship between the dialogue hosts and participants

In preparation for the dialogue, the country teams needed to reach out to stakeholders to invite them to be members of the National Councils. Gaining the stakeholders' trust in the R&Dialogue process was critical at this early stage. In many cases, trust in the R&Dialogue partners was based on existing relationships that had been established through previous collaborations and projects; of the 264 stakeholders that were contacted and interviewed in the early 'pathfinding' phase of the project, almost half were individuals that were already known to the country teams.

For stakeholders who did not have an existing relationship with the R&Dialogue partners, the reputation of the institutions played a critical role. As discussed earlier in this chapter, in the teams in the Netherlands and Greece, in particular, found it challenging to recruit stakeholders from environmental organisations due to the organisers' existing reputation and relationships with the fossil fuel industry. This issue has been identified in previous studies of NGO involvement in multi-stakeholder dialogue processes, where it has been observed that opportunities for NGOs to engage with business can raise "concerns over possible containment through co-option, a de-radicalisation of the movements and a diluting of issues to accommodate them within the established political order" (Burchell & Cook, 2013: p.509). In addition, participation from NGOs can also be restricted due to time and resource constraints. There may be a reluctance to invest in a lengthy dialogue process when there is uncertainty about the benefits of the final outputs (Burchell & Cook, 2007).

Hemmati (2002) has stated that, amongst the most fundamental conditions for building trust in a multi-stakeholder dialogue, is a perception of "fairness, transparency and equity of the process" amongst the participants (p. 95). In line with this rationale, from the outset of the R&Dialogue project, the country teams strived to be clear and candid about the project's objectives and deliverables, the dialogue process, and the effort that would be required from the participants (for example, the number of hours they would need to commit). For many country teams, the interviews that were conducted during the initial phase provided the ideal opportunity to explain these details and build trust.

However, it is important to note that some country teams found building trust at this early stage to be quite challenging as a result of the open and flexible nature of the dialogue process. The desire for an open-ended and adaptable process meant that objectives and deliverables were not clearly defined beforehand. This was sometimes felt to be in conflict with a desire to provide clarity about the expected outputs from the start.

Relationships between the participants

Equally important as establishing trust between the dialogue organisers and participants, is establishing and maintaining trust between the various participants. "Trusting relationships are often depicted as the essence of collaboration. Paradoxically, they are both the lubricant and the glue – that is, they facilitate the work of collaboration and they hold the collaboration together" (Bryson et al, 2006: p.47).

In the majority of countries, some of the Council members knew each other already, either from previous working relationships, or from an awareness of each other's work, but many did not. Consequently, some form of a 'kick-off' session was organized at the start of most of the dialogue processes. These were informal events which were designed to introduce the Council members to each other, inform them on the purpose, process, and rules of the project, and to discuss each other's expectations and topics of the Council meetings. These meetings left space for participants to chat in a relaxed environment, often in smaller groups, which helped build trust between the stakeholders in advance of the more formal proceedings.

Throughout the course of the dialogue process, country teams found that it was vital to maintain a friendly and equitable atmosphere between the Council members to ensure everyone felt respected and free to talk. To enable this, some national teams felt the need to have a neutral person, outside of the Council, to facilitate the process and to ensure to all that all parties would be treated equally. In some cases, this position was assumed by the national team, whereas, in others, an external facilitator was hired.

Continuous communication throughout the dialogue process was found to be a key component to maintaining trust. Country teams used various methods to keep communication channels open, including, using online discussion forums, blogs, and social media, sending regular email updates, and organising additional interim events to promote networking between participants. However, these

activities take time and resources, for both the organisers and participants in the dialogue, which must be accounted for when planning activities.

Relationship with the dialogue process

An important factor that influenced the development of dialogue was trust in the process of dialogue itself and its potential in producing valuable results. Dialogue of the type used in this project is not a frequent practice in our society and most people either do not realise its transforming potential or lack the experience to use it positively, or both. The concept of dialogue is sometimes mistaken with a generic idea of conversation, however.

Gaining confidence in the dialogue process was therefore an important challenge in R&Dialogue. Particularly so, as dialogue does not hold an immediate and linear relationship with action. The idea of taking time to talk and reflect together, without close connection to some kind of material product, is by some felt as a loss of time. Related to this, expectations of immediate results, for instance in terms of impact on policy makers, contrast with the fact that the inputs received through dialogue often have to sediment to mature and that the mechanisms set in motion by dialogue are more likely to show their effects in the long term. To increase trust in the dialogue process the consortium and country teams developed their sensitivity in trying to meet what seemed to be most relevant for the National Councils. It could be for instance protecting privacy and the dialogue space (Germany); offering a very well structured but non-hierarchical process (UK); maintaining a high degree of flexibility (Spain); supporting initiatives that increase visibility of the group (Norway); finding creative ways for temporarily setting aside hierarchy (France); creating spaces for involvement with citizens (Italy); giving room to role differences (Portugal) or to authoritative leadership (Netherlands) or to the need for innovation (Greece). These are but a few examples of the many aspects taken into account by the country teams, and these were felt to be important conditions for increasing trust of the participants in the dialogue process.

From this point of view, trust in the organisers and in the other participants was an ingredient for what was often the main interest of the participants: learning about the dialogue process and how it could help them in other professional situations to face energy innovation challenges. In this respect, it is the quality itself of the dialogue experience that becomes generative of trust. For instance, in some Councils it was observed that, when the dialogue allowed the participants to overcome conventional exchanges (and common fights), trust in the possibilities of the dialogue process would increase. It was also observed that trust in the process grew as members felt increasingly part of a group that shared a common problem and objective, even if with different ideas about solutions. Several participants, developed reciprocal understanding with stakeholders who held different positions on energy issues. This created a new and fascinating experience and, an unexpected interest to be together and grow in the relationship. So, while some kind of trust was necessary to initially establish a relationship, at the same time an impression of deeper trust grew as a side effect of dialogue. It should never be forgotten that trust is the result of a long term endeavour, as it needs continuous verification and construction of reciprocal reliability.

2.6 Inclusiveness matters

Governments have a significant influence on which other energy stakeholders play the most important role in the energy transition: industry, Civil Society Organisations (CSOs), Research and Development Organisations (RDOs), or others. The National Councils in the R&Dialogue project have commented that there are dialogues that support inclusiveness and others that do not. For the latter, it oftentimes happens that they only seek inclusiveness when there is a specific problem or concern. That is one of the issues raised in the Portuguese discussions. For example, a specific debate about energy in the media only arises when, for economic conjuncture reasons, cost issues become the focus. There is, however, a formal obligation for public consultation regarding national, regional and municipal programs and plans as well as regarding environmental impact studies of specific projects.

A lack of inclusiveness is also noted in the Czech Republic, where there are a number of diverse discussion platforms. However, many of these seem to be dedicated to an 'inner circle of initiates', i.e. people with clear-cut opinions who are unlikely to change their entrenched positions. In addition, not everyone seems to agree as to whether the outputs of such public debates have any significant impacts on general awareness levels and on the subsequent decision making processes.

Greece is a similar case. The Dialogue Council demonstrated that even though there is inclusiveness at high-rank level and in decision making, there is little or no inclusion of local communities when it comes to actually implementing the decision. A reason for this could be that these communities are regarded as uninformed or as having a distorted view.

In Spain, inclusiveness drives the process within the R&Dialogue National Council. Following the principles of openness and democracy of the R&Dialogue initiative, it has been generally warmly welcomed and considered positive to establish contact with other national and European platforms to coordinate efforts. Lately, participatory procedures in which citizens can engage in the decision-making process are increasingly in demand. Society was seen by the experts involved as the driver of climate mitigation politics.

Participation and democracy was extensively discussed in the Greek National Dialogue phase and it is clearly stated in the German Vision Paper, where there is an action that aims at improving participation. A best practice example from real life is the process for drawing up the climate mitigation plan in North Rhine-Westphalia, which outlines some 360 suggestions for measures to be taken to achieve the climate mitigation plan targets. This process involved over 400 people in its drafting, and has already delivered its initial findings on how a process that fully integrates the society can be practically implemented. In Italy, the R&Dialogue Council has formulated a proposal for an action of social dialogue that could help the local community overcome those conflicts that at the moment block a fully inclusive energy dialogue.

In order to achieve more participation in the transition to a low-carbon society, there must be behavioural changes from all the parties involved. "The individuals should take responsibility for their

actions and should accept the costs that come with that transition", the Greek stakeholders stated when they were asked about the prerequisites for a low-carbon society. Moreover, citizens will need to adopt a different lifestyle, e.g. increasingly use public transportation, be aware of the labelling of the products they consume, etcetera. The above points were not only part of the Greek discussions, but were confronted also in the German and the French dialogues. In Italy, this topic was discussed with a different approach, prioritising the need to give access, provide opportunities, enable dialogue between people and professional stakeholders. This kind of inclusive process is supposed to lead to energy change in the Italian society, including behavioural change, without the need to force or pressure people. New methods and structures to involve citizens in the transition process is an issue that concerns also the German stakeholders. In addition, they do not feel that it is possible for a low-carbon society to be reached only through the application of technology.

A very good and to-the-point declaration that summarises the importance of early inclusiveness came from Norway. It can be a challenge to find the balance between the desire for open processes and effective project development, something that has been underlined by Minister of Petroleum and Energy Tord Lien. At the launch of the Sima-Samnanger power line in Western Norway, he declared that “the debate taught us that early and strong local involvement is a precondition for a good licensing process.” [5]

At this point, it is worth mentioning that inclusiveness in the dialogue is a characteristic that the whole R&Dialogue consortium agrees upon. That was made evident in the efforts of the country teams to include in the National Council stakeholders from all the categories of the society and also from the fact that most countries tried to have stakeholders with national, regional and local interests. The level to which that was successful reflects the existing level of dialogue and awareness in each country and was also dependent on the role, expertise and contacts of the national teams.

2.7 Conclusion

Despite beginning the dialogue process from a shared starting point, the way each country team within R&Dialogue set up the dialogue, and the methods that used during the meetings, were very different. In this chapter, we have discussed the reasons for these differences, the impacts that they had on the process, and the lessons we learned. What has emerged from all the different dialogue processes is that, whatever format, venue, or facilitation method is used, trust is always an essential component of the process. For the R&Dialogue teams, this was achieved by prioritising honesty and clarity throughout the process, and by striving for an open and inclusive atmosphere where all participants felt able to express their views. Overall, the R&Dialogue partners found that the Council members were active and respectful participants in this process. This gives us cause to believe that there could be a wider appetite across Europe for fair and meaningful multi-stakeholder dialogue to help the transition to a low-carbon society.

[5] https://www.regjeringen.no/no/aktuelt/apnet-kraftledningen-sima-samnanger/id750034/

3. Different Scales of Dialogue towards a Low-Carbon Society

3.1 Introduction

The value of interaction and dialogue, as a way of joint and mutual learning, has become more and more crucial in an effort to find more satisfactory decision making processes. Dialogue has the potential to create understanding, shared meaning and a shared view, stimulating unforeseen collective creativity. Dialogue can help construct a safe space for relationship building between stakeholders which allows for development of visions that can subsequently produce action plans.

A dialogue about a low-carbon society is meant to go beyond existing and insufficient consultation processes and promote understanding, stimulate practical action and have a measurable influence on energy policy-making by stimulating convergence (agreement, cooperation) at all scales (Fig. 1), in particular as a way to attain a balance between energy provision, costs and climate objectives.

Fig. 1. Different scales of dialogue

In R&Dialogue we believe that in order to achieve the EU energy objectives and make the transition to a low-carbon society, public involvement is essential. While public involvement in decision-making in the EU is facilitated by the stipulations of the Aarhus Convention (1998), all too often approaches to participation for decision-making may be superficial, or even absent. Consultation remains to be the dominant form of participation (as defined by

Arnstein's ladder of participation[6]), but it fails in offering a multi-directional and responsive form of dialogue. This prevents understanding and addressing the interdependencies between the different energy challenges and responding adequately. In order to achieve skilful dialogue, Arnstein's processes of partnership or delegated power would be more appropriate.

National action on climate change and the international negotiations are interlinked and mutually reinforcing. The international negotiations in recent years (e.g. Lima Climate Change Conference (COP 20 / CMP 10)) have stimulated national actions especially on 'Low-Carbon Development', i.e. development with minimal output of greenhouse gas emissions.

In a dialogue for the low-carbon society, the goal is to involve citizens, civil society organisations, national and local authorities and all types of energy organisations in order to combine different perspectives. To achieve this, actions must be carried out at national, regional and local level. Hence, dialogues at different scales, depending on the issue and the goals that need to be met, should be in communication with one another. Regional and local authorities are recognised, by the stakeholders participating in the R&Dialogue, as key drivers for the energy transition. Thus, empowering stakeholders at all levels seems to be a prerequisite for the achievement of the climate and energy ambitions for the 2050 horizon.

The most important lesson learnt during this project is that 'one size does not fit all'. This means that there should be no strict general framing for a dialogue process. The dialogue process must be constructed according to the circumstances and context to be successful. Most of the dialogues that we organised were national. The exceptions were regional, like in Germany (North-Rhine Westphalia), or regional with national orientation, like in Portugal. Moreover, the need for different scales of dialogue was also acknowledged by the National Councils in all participating countries. In The Netherlands, the Council distinguished two types of dialogue: policy dialogue (policy making) and project dialogue (implementation of an energy project, generally). In Italy the dialogue included both the level of national organisations and a local community.

Multi-level dialogue is essential for numerous reasons. The most obvious one is that a low-carbon future affects all sectors of the society. Dialogues should therefore be as inclusive as possible. Furthermore, companies that develop facilities (power plants, wind parks, high voltage lines) often encounter resistance from local communities and authorities. In some cases this leads to nationwide resistance, causing a deadlock in the policy implementation (CCS is an example of that in some countries). This affects the behaviour of project developers, since possible delays in project progress and increased project costs create a business risk. This in turn affects environmental objectives.

[6] http://lithgow-schmidt.dk/sherry-arnstein/ladder-of-citizen-participation.html

3.2 Regional and local dialogues as the place for low-carbon technology dialogue

Moving to a low-carbon future is a decision which comes under national laws, but often has to be implemented at local level. The experience gained by the Energy Cities, the European Association of local authorities in energy transition, indicates that entrusting a local administration with power and responsibility often leads to better results than trying to manage the implementation from national capitals[7]. In the field of energy, local participation is a strong leverage for transition as it can increase citizens' acceptance of the infrastructures. Inclusion of citizens and acceptance of infrastructure may foster creativity and innovation, and stimulates local activities which can create economic added-value that remains in the territory.

Local/regional dialogues are often the most appropriate option when it comes to implementing low-carbon projects such as wind, solar, CO_2 Capture and Storage, and increasing public awareness. This is the experience in Portugal, where the Discussion Paper mentions that when project advocates dialogue directly with landowners and municipalities, providing rents, fees or other benefits to the communities, there was local public support, even with known environmental impacts. This was the case of many wind parks.

The discussions in the Greek National Dialogue reached similar conclusions. The construction of two different wind parks was given as an example. In one case, there was complete support of the local community when the constructor/ stakeholder approached the community and explained the benefits of the project and asked their opinion. And in the other case, the disapproval, the strong opposition and the long judicial disputes of another constructor/ stakeholder led to cancellation of the project.

Regional and local authorities, and stakeholders, are key players for moving towards a sustainable, low-carbon future. Thus, by empowering them, reasonably and efficiently using their territories' resources, rethinking financing solutions, inventing new suitable governance models, and using urban planning, the targets set at national level can be achieved. The German state of North Rhine-Westphalia (NRW) can be seen as such a case. The German National Council mentioned that the development of this state could have nationwide influence, and that such influence might also resonate beyond Germany. It was stated that NRW is the industrial heartland of Germany, and can be said to have a particular responsibility due to its cumulative emissions since the Industrial Revolution. However, if the state successfully proceeds to a post-fossil-fuel society and industry, its lessons might be applied worldwide. In order to support a stabilisation of the expectations that are being placed on the energy transition, the German Dialogue Council found it necessary that high-ranking officials participate in dialogue processes at the levels of German states (Länder), regions and local communities.

[7] http://www.energy-cities.eu/IMG/pdf/cahier_short_jan2014_en.pdf

The example of the Czech Republic is also a good one when it comes to highlighting the role of local dialogues in the implementation of energy projects. In the Czech Discussion Paper, it is stated that so far, Czech citizens have been uniting forces to fight against “third-party” projects, i.e. projects developed by investors coming “from outside” the community or region. However, these forces could well be used in a constructive manner if civic associations started to plan and implement their “own” community projects.

In this respect, it is important to take into account that this is not an easy and straightforward change to be made. It is a difficult shift for a local community, once negative experiences have taken place, which have made energy issues instrumental to political polarisation. In Italy, for instance, the work in the small town of Caprarola (Northern Lazio) has brought to the surface a strong skepticism among the population. This is linked to a past proposal by a multinational company to build a biomass plant. The idea had initiated environmental and citizen opposition, which has remained after the company had withdrawn and up to this day. Through the dialogue process, it was stated that this has made the discussion on any potential use of biomass, which is produced abundantly in the area (waste cuttings from the local hazelnut production plus wood maintenance) very complicated, due to the crystallised political conflicts and lack of trust between different factions within the community.

A very important move that reflects the importance of involving the regional and local is the Covenant of Mayors. This is a mainstream European movement involving local and regional authorities that voluntarily commit to increasing energy efficiency and use of renewable energy sources on their territories. The local authorities are partially responsible for improving the awareness level of the people and for making efforts towards a more sustainable community. In Greece, in the wider area of Athens, there are three such municipalities that are part of the Covenant, and they are thus characterised as "green" due to their efforts to promote a low-carbon future. The Municipality of Caprarola, which has been involved in the activities of R&Dialogue Italy, is also involved in the Covenant of Mayors.

Although the role of local communities is often recognised, the relationships between central and local authorities and other stakeholders are complex. There is the need to have greater trust in local authorities to make decisions, but in order to do so there are features that should be jointly considered and dealt with by the authorities (local and central).The Italian Council, for instance, discussed the need to improve understanding of the impact of national politics at local level. It is often the case that what seems appropriate at a general level is at risk of failing if it does not sufficiently take into account particularities and constraints of local situations. A critical aspect is the (lack of) connection that national politicians have with local issues, and at the same time the dependency of local government on central government for resources. While some European countries have responded to this with a devolution of power from the national to the regional/local levels (e.g. Germany, where the success of renewable

energy generation has been attributed to this devolution of power), other countries (e.g. UK, France) are more centralist. However, this is being challenged, for example through the devolved parliaments in the four UK nations.

3.3 National Dialogue

Decisions at national level cannot overlook the importance of local/regional dialogue and support. The R&Dialogue approach followed mainly national dialogues. Many of them concluded that national dialogues are appropriate for e.g. setting general objectives/ targets, developing legislation and devising fit-for-purpose subsidy schemes. And here lies a problem that was recognised by the Dutch National Council: The lack of coordination in the organisation of dialogue initiatives. The sometimes unclear role of government representatives in specific projects can lead to confusion or lack of trust with certain stakeholders. A good example of a decrease in trust in The Netherlands is the implementation of the Rijkscoördinatieregeling: this allows national governments to bypass local and provincial policy makers and push through certain projects such as large wind parks. This narrows the possibilities of an actual dialogue for the sake of speeding up implementation processes. This emphasis on top-down decision making has in a number of places caused bottom-up protest. Conversely, well-organised minority opposition groups can cause delay to renewable energy projects, despite an overriding national interest and need for energy generation as well as decarbonisation. National governments are left with the task of balancing legitimate local reactions with national objectives.

The Dutch Discussion Paper describes the tension between the policy dialogue and the project dialogue. Policy and policy goals are discussed on a high and abstract level between stakeholders (usually) at national level. This includes European and national energy policy instruments. Dialogues at project level on the other hand, are more concrete and look to implement low-carbon energy projects. While these projects are being developed, the policy dialogue will take its own time, and in the meantime processes and attitudes might change. The policy dialogue generally takes place between politicians, policy-makers, market stakeholders and civil society organisations. The policy dialogue has a dynamic and complex character, which often makes it challenging or even impossible for stakeholders in low-carbon energy projects to find alignment. In other words: why should residents get involved in a wind park dialogue when national government keeps changing its opinion on the necessity of wind power? In cases such as this, dialogue processes such as those we have carried out in this project, which aim to channel dialogue up to the highest national and EU levels, are imperative to enabling citizen engagement in higher level energy problems.

Also in the Italian R&Dialogue experience, finding an integration between policy processes and dialogue processes proved challenging. Dialogue requires time for reciprocal listening. It

might be difficult for policy makers to find time for this, since they are always under pressure and continuously need to make decisions.

Importance of a national energy roadmap based on the input of all stakeholders. The dynamic and complex character of the energy system and the energy mix was highlighted during the Greek National Dialogue, where the lack of a National Energy Roadmap was discussed. This Roadmap was out for public consultation on March 2012, but no official document was released since then. Participants in the Greek dialogue also pointed out that the energy targets should be discussed nationally with the inclusion of all the relevant stakeholders.

Importance of the coordination of national and local dialogue. In Spain for instance, due to the administrative structure of the country and the complexity of the competencies of the public bodies and agencies, it makes sense for local, regional and national levels to be represented in the dialogue at the same time. Members in the Spanish R&Dialogue Council represent associations or organisations that are active on the different levels of administration and policy making, and that express case based solutions that are linked to a national vision with a European dimension. This dialogue consists of providing ideas to promote a national debate on a low-carbon future, something which is currently urgent and crucial for the country.

Role of the EU at national level. The EU, with its roadmaps and directives, has a great impact on national decisions, and this influence is not always perceived to be positive. Lack of dialogue between the national/local and the European level can make European policies hard to understand for the population. This might make implementation difficult. The EU also has a huge importance in shaping Norwegian policy. All the EU Directives regulating energy issues have been adopted as part of the EU internal market, and are seen as relevant to the European Economic Area, of which Norway is a member. In the Norwegian Dialogue it was mentioned that politicians have to take into account the signals coming out of Brussels when developing the energy and climate policy for the years to come. However, the fact that there is still strong scepticism within the Norwegian population to joining the EU (following the 'no' vote in a referendum in 1994) may make this job more difficult. In the same dialogue, participants agreed that there is a clear need not only for a definition of a low-carbon society, but also a genuine political commitment to it.

The Norwegian dialogue also concluded that authorities have to work together in order to achieve a truly holistic approach to a low-carbon society. The participants in a workshop organised by the Greek National Team came to the same conclusion. At the workshop, participants played a role play game. They were asked to propose actions that will lead Greek society to a low-carbon future, but from a perspective different from their own. This encouraged participants to think outside their own box. From the beginning of the procedure,

they recognised that in order to achieve that, the collaboration of all the stakeholders is necessary, if not obligatory.

In Spain, multiple changes have been implemented since the last decade in the regulation and plans that directly affect the energy sector and always taking into account the European directives and framework. However, in the view of the Spanish Dialogue Council, these changes are not the result of a defined long term strategy or policy, and an energy debate with a national vision has not really taken place. Instead, regulatory changes are mostly based on ideological concepts that try to solve urgent problems in the short term, such as electricity price or energy poverty. In this situation, spontaneous debate in some national platforms has emerged in certain fields (e.g the electricity sector) in order to minimise effects of the existing problems. These debates have, however, only partially addressed the overall energy situation.

In Italy there has been recently a stronger effort to gain input from civil society on the national energy strategy (SEN) but this is still insufficient according to the Italian R&Dialogue team. Similar to the Spanish situation, the wealth of initiatives at a local level or those taken by certain stakeholder groups cannot compensate for the lack of a well-developed and well-coordinated national strategy.

When coming to define national dialogue, the story of the UK is complex as it is one state consisting of four countries. Scotland is a separate country within the UK, and there are several on-going national dialogues. The Scottish government recognises the importance and the necessity of moving to a low-carbon society, as witnessed by the Climate Change (Scotland) Act 2009, and, more specifically, in 2010 by the "Low-carbon Scotland: Public Engagement Strategy". On the other hand, ‘energy policy’ is not presently a devolved function and is therefore maintained in London for the UK as a whole. This has been creating tensions and dissatisfaction in Scotland given the direction of the UK’s energy policy.

3.4 European dialogue

The European Economic and Social Committee (EESC) has the following recommendation for Europe: "By 2016 energy sector stakeholders, citizens and civil society organisation will be engaged in [a] European Energy Dialogue, in the form of a coordinated multi-level conversation within and across all Member States.”[8]

The issue of the European Dialogue was discussed during the meetings of the Greek National Council. It was said that the different national strategies, different interests and resources can hinder a coordinated transition to a low-carbon society at European level. The adjustment to EU decisions in the energy sector, in regards to the demand for emissions reduction, has affected the Greek energy system. The Greek National Council believes that those

[8] Needs and methods of public involvement in the energy policy field
http://www.eesc.europa.eu/?i=portal.en.ten-opinions.25693

responsible for the decision making both at national and at European level need to clarify to the Greek society all the available options towards that direction. Finally, great importance was given to the conflict between short-term and long-term economic viability of established and less mature energy production methods.

The EU institutions appear to recognise the need for the involvement of civil society in the transition. For that reason the European Economic and Social Committee promotes a closer European coordination on energy issues. The French Dialogue Council believes that European bodies should encourage energy innovation in industrial production and coherently structure their strategic industrial-energy policy. This should happen both at European level and at national level. Moreover, energy projects should not contradict the initiatives and regulations of the European Union. The Spanish National Council too agrees with the necessity to provide more visibility to the European strategic roadmaps.

However, in order to have a successful European Dialogue on low-carbon energy, the necessary conditions must be in place. The policy fragmentation and the inconsistencies should be dealt with. That is the view of the Czech National Council, which said that the European Union needs a set of clearly defined and binding long-term targets. The member states need concrete responsibilities. At the same time, the states should have the freedom to choose the means and measures for achieving the long-term goals set at EU level. The Italian Council was of the view that high level institutions, such as European and national ones, should work on developing a vision and setting the goals, leaving decisions on their practical implementation to lower level and more local institutions (centralised decision making on global strategies, decentralised decision making on which options to choose and how to implement them).

The majority of the German experts involved in the North Rhine-Westphalia dialogue were of the opinion that climate mitigation targets agreed upon at international and at European level, together with their associated expert dialogues, are in themselves not sufficient to achieve public acceptance of a low-carbon future. This gap needs to be bridged.

Other concerns are the lack of prioritisation of the energy transition in certain member states, and lack of a well-structured framework for a dialogue for the energy mix in most EU member states. The Dutch R&Dialogue Council states that there is a tension and sometimes even a lack of alignment between European policy goals, national policy goals and the preferred actions taken by the energy sector. Having this in mind and taking into consideration that Europe believes itself to be a frontrunner in creating a low-carbon society, the perception that Europe is not able to live up to its goals could be createdfd. This raises questions about whether Member States are able to reach targets on time. However, this is not always the case. In Italy for instance, the targets were reached very early but the issue of developing the concept of a low-carbon society remains. As the experience of the Italian Council with a local

community shows, the development of appropriate measures and strategies requires involvement of the public. This is a big challenge in itself, as the theme of energy innovation is still remote for many citizens.

3.5 Be flexible, one size doesn't fit all

Each local reality is different. Dialogues should allow for flexibility in the approach, while following general dialogue principles such as openness, listening, sharing, and mutual learning. Some National Dialogue Councils integrated this local perspective in their work by opening up participation to a local community, making case studies, inviting local project representatives or making site visits. The experience was that locally organised dialogues generate more participation and emotions. It is important to frame the dialogue process (who to involve, when and at what level) according to the problem, question, decision or goal you want to solve or reach. Therefore, if we address a regional problem it's necessary to have a regional dialogue.

In the opinion of many stakeholders that participated in the R&Dialogue project, local communities were an important stakeholder that is very engaged in this area. Structures should therefore be created to enable towns and local authorities to implement dialogue actions and to achieve a better cooperation

While flexibility and tailoring the dialogue is essential, placing individual dialogues and specific solutions into the bigger picture requires attention too. The development of national or regional low-carbon energy programmes might challenge the coherence of the European energy market on a bigger scale. Decisions made on the local level influence the balance of the energy system. A higher presence of renewables and low-carbon technologies in one area, which is not going hand in hand with developing the grid and a holistic approach, might result in the destabilisation of the system. Therefore many believe that an integrated European energy market is needed.

3.6 Conclusion

Conducting dialogue at each scale (local, regional, national, European), has its own challenges, as well as the challenge of connecting dialogues at various scales. Not least, the issues of representation and inclusion of relevant partners present themselves differently at each scale. Different scales lend themselves to different forms of dialogue and this must be considered when aiming to encourage participation. For example, dialogue processes which aim to break down hierarchical barriers between members of the public, and stakeholders, and decision-makers at the local or regional level, may not be appropriate for politicians, policy-makers and leaders at the EU level. Consequently, design of dialogue processes should be context-based. In order to ensure progress and consistency at each individual scale, we believe that dedicated, multi-directional communication and interaction between the scales is essential.

4 Relationship of citizens with technology

4.1 Introduction

Climate change and its mitigation is a process that concerns, directly or indirectly, every member of society. In the discussion and vision papers, citizens are mentioned in various contexts, and they assume different roles. We will first look at these roles. Afterwards we will see how the national dialogues dealt with the role of technology in the energy transition.

4.2 Citizens and their many roles

First of all, citizens are in the role of voters. They exercise their right to cast a vote in national, as well as local, regional, or municipal elections. By taking this role, they influence the future direction and forming of the policies, by giving a mandate to make decisions in energy and other fields to elected representatives. However, the tenure of these decision-makers is limited to a short period of time in comparison to the time frame of transition to a low-carbon society. That is why it is important, as stressed in the French discussion paper, that the politicians give citizens the opportunity and means to initiate and actively participate in energy transition projects, and in particular in projects that will outlive political tenures.

Second, citizens can be seen as final consumers of energy. As such, they are generally concerned about the accessibility of favourably priced energy. It was perceived by stakeholders in several national dialogues (e.g. Greece, Czech Republic, Portugal, Italy) that citizens respond mostly to the issues of costs of electricity and gas, and that it is not always clear to them what technologies were actually used to produce it. In some cases, such as the Czech Republic, a part of a population lacks trust in the new low-carbon technologies and considers them too costly, risky, or not entirely necessary.

When encountering the issue of applying new technologies, many citizens tend to be defensive about demands to change their personal lifestyle, and are concerned about losing their comfort or even freedom. High consumption, as remarked by the Norwegian stakeholders, is perceived by citizens as a symbol of prosperity and welfare. One of the ways of dealing with this issue, as proposed in the Norwegian dialogue, could be to educate the general public about the impact of the consumerism by providing information on the products' environmental and carbon footprint on the labels. This measure could figure among the others as a part of an all-encompassing awareness raising program to enhance the capability of citizens to evaluate both the costs and benefits of the usage of particular technologies or goods.

It is clear from the national reports that, next to the material benefits, there is an increasing appeal on post-materialist values. The stakeholders involved in German dialogue noted, that

the moral issues are now the core component of public debate on climate change in Germany. Another example is Norway, where citizens believe it is prestigious to have their country setting a good example. In the Greek dialogue, an individual's responsibility and obligations towards the community were stressed. In Italy the importance of considering a variety of criteria was stressed, including environmental ones, in addition to economics, in relationship to the quality of life.

Third, citizens are also consumers of media content, which is becoming more and more accessible, but at the same time increasingly complex. As a result, citizens sometimes have difficulties understanding new technologies and their potential. The information they receive is often heavily framed, and it is hard for them to judge its objective quality. As experienced, for instance, in the Netherlands, there is a growing distrust and polarisation in society as people don't know how to deal with lots of contradictory information or different interpretations of the same information, also due to differences in knowledge levels of stakeholders. Participants in the Norwegian dialogue had the impression that climate sceptics are overrepresented in the Norwegian media. In the Czech Republic, the independence of the media is endangered by the fact that the Minister of Finance is at the same time the owner of a biofuels producing company and the owner of several print media. The Italian Council stressed the need improve the communication between journalists and researchers, which often leads to inaccurate reporting, causing mistrust of researchers towards the media.

The importance of transmitting objective, comprehensible information on technologies to the citizens has been stressed in multiple countries. In the Portuguese dialogue, it was suggested that where media fail to inform citizens properly and reliably, the non-governmental and research and development organisations should step in, since these are perceived as more trustworthy actors. A call for a precise, meaningful, and understandable information flow from researchers to the public was strongly voiced in several countries (e.g. Greece). In Italy it was suggested that new avenues for technology communication could be identified through collaboration between research institutions and scientific journalists.

Fourth, many citizens are in a position as an employee. These could be influenced by the impact of the energy transition on their jobs, mainly in carbon-intensive industries. Even if they are aware that transition could allow for a creation of the new employment opportunities, the social impact is not fully predictable. Moreover, this situation will often depend on the flexibility of labour factor to move from one sector to another. This contributes to the impression of complexity and incomprehensibility of the possible outputs of the progress towards the low-carbon economy**.** The employees are often represented by the trade unions. These unions could play a very influential role in the national decision-making process, even though they are more active and visible in some countries (Norway, Germany) than in others (Czech Republic, Greece).

Fifth, we can see citizens as residents, who have proven to be sensitive to the more significant changes in their immediate natural environment. According to a Eurobarometer survey published in March 2014, a majority of EU citizens recognise climate change as a very serious problem. When it comes to local actions, however, we often see that citizens are less eager to allow the low-carbon technologies projects to be realised in the proximity of their homes. As mentioned in the Norwegian dialogue, the scepticism of the society towards the innovative and untried technologies sometimes leads companies to bypass the public and quickly finish the project, relying on the fact that citizens are more likely to accept an already developed project. However, there are numerous examples where citizens are more willing to accept a project if they are included, for instance, as co-owners of the RES facilities by the means of collective ownership and cooperative funding.

Sweden, Germany and in particular Denmark have positive experiences with this approach[9]. Also in Italy there are successful energy projects based on cooperative effort of local municipalities, private sector and citizens' partnership. The stakeholders in the Czech dialogue expressed the same opinion, namely that a project has a better chance to succeed in the eyes of citizens if it is perceived as their own product and not as something which is imposed by a third party. In France, the decentralisation of energy production is perceived as effective: farmers are becoming energy producers and water-energy-treatment utilities are built based on the citizens' investments. This paves the way to the implementation of circular economy projects. In Scotland, the stakeholders called for the empowerment of the citizens to take a local action. The German dialogue remarked that the more educated the population is, the stronger is the demand to actively participate in decision-making and influence the process of energy transition.

Another way to gain acceptance of the citizens for these kinds of projects is to balance the costs and benefits by providing some form of compensation. In Portugal, the application of certain renewable energy sources (wind farms) caused public opposition when natural or cultural/economic patrimony values were at stake. This was in some cases mitigated by project promoters offering financial or other benefits directly to the affected landowners or municipalities.

[9] For examples from Sweden, see for example *Experience with establishment of wind power: Anchoring, acceptance and resistance.* Swedish Environmental Protection Agency (2008). http://www.naturvardsverket.se/Documents/publikationer/978-91-620-5866-1.pdf

4.3 The low-carbon technologies in the individual national dialogues

Many opinions were stated during the debates on the role of technology in the energy transition. It is, however, difficult to identify the attitude of a society as whole. The citizens and the other energy stakeholders form a diverse group with varying levels and types of education, access to information and willingness to contribute to the debate on the energy transition. However, we can consider the positions and attitudes expressed by the participants to the dialogue action as reflecting, at least to some extent, the discourse on-going in the respective societies.

When describing the citizens' attitudes towards technologies, we are drawing on the perceptions of stakeholders involved in the national dialogues. The main sources of information were the national discussion and vision papers, in which the stakeholders' experience and attitudes were recorded and which, to the large extent, reflected some of the discourse prevalent in the respective societies.

The next section offers brief country-specific information on the extent to which the individual technologies, as well as their specific attributes, were represented in the national dialogues.

The topics debated within the national dialogues with regard to specific technologies were dependent on the composition of the respective Councils. Where the representatives of a particular energy sector were present, the related technologies were underlined. Another factor setting a direction in a discussion was the nature of the current energy mix of the countries and their predispositions towards the use of particular energy sources.

In Italy the technologies discussed have been strongly determined by the decision of the Council to work on a local reality, characterised by abundance of biomass. It was interesting to note that, as the dialogue progressed, technological considerations evolved towards a tailored approach. With the growing awareness of the needs of the local community, the evaluation of the variety of technological options became more refined and specific. Also noteworthy, it was possible to connect to the local reality and make sense with citizens of all the technologies being considered by the Council, even the apparently more centralised and remote ones like CO_2 capture and storage (CCS). This seems to indicate that with proper conditions technological issues can become an interesting topic for citizens, who can in this way contribute to the development of research and policy agendas in this sector.

In Norway, the replacement of the national fossil fuels consumption is a highly debated topic. There is little agreement on the role the low-carbon technologies should play and whether they are the best alternatives available. The Council's focused mostly on the need for long-term investments and political will to support a large-scale deployment of new technologies, rather than discussing public acceptance issues. New technologies for zero-emission

transport, as well as wind and solar technologies were given the most attention. The importance of the hydro-energy sector was stressed, reflecting the decisive role it plays as a source of electricity in Norway. The discussion on the capture and storage of carbon dioxide was highly polarized. CCS is considered a potentially necessary technology in cutting emissions, but stakeholders disagree about the costs and the volume of investment required for this technology. Little attention was given to biomass, due to the absence of bio stakeholders in the National Council.

In Greece, the National Council didn't discuss specifically any low-carbon technology. Solar power, wind energy, biomass and CCS were mentioned and the future of fossil fuels in the energy system was considered, but the dialogue was focused mainly on the attitudes of the society towards climate change mitigation and the role of science in this process. It was noted that, with regards to the “new” technologies, the public is concerned mainly by their potential side effects and the overall distribution of costs. These issues will have to be addressed in the future.

Technologies which attracted the most attention in the Portuguese dialogue reflect the character of the state’s natural resources and the presence of representatives from the specific sectors in the National Council. Since the country has no significant fossil fuel reserves, the dialogue largely focused on wind and solar energy, as well as biofuels. On the other hand, the coverage of the issues like nuclear energy, high enthalpy geothermal energy or CCS was very limited. Some other energy sources, like ocean energy, were not deliberated due to their relative immaturity. Portuguese stakeholders stressed the need to utilize a large variety of technologies to embrace the country specific circumstances with regard to resources and to achieve a balanced and sustainable low-carbon energy system. The potential of some innovative technologies (e.g. the production of biomass from microalgae) is not easily predictable, but they could play a significant role in the energy transition. The Portuguese public interest for the debate on energy is limited and is highly polarised by the price of electricity and fuel. However, there is a visible trend that with renewable energy sources becoming less and less costly, the support of the general public is growing, despite some concerns (voiced mainly by environmental NGOs) about the cost issues and environmental impact of massive use of these sources.

The Dutch stakeholders reported they had experienced a lack of knowledge, interest and appreciation for the energy sector from society. The occasional mobilization of citizens reflects the polarization of the society regarding the energy issues. The influence of citizens is exercised by protesting against large energy projects and deployment of specific technologies, but, on the other hand, also by participating in local energy initiatives. The concerns of the public are mostly related to the safety issues or environmental risks of the technologies. However, the environmental organisations, which could have represented this

position, did not join the National Council. Moreover, another national dialogue with stakeholders was already working on a new Dutch Energy Agreement, which deals with low-carbon technologies in relation to energy goals for 2020. To create an atmosphere wherein the R&Dialogue Council's stakeholders were able to discuss openly the energy transition without (political) consequences, the Dutch team chose not to discuss specific low-carbon technologies but rather focus on the dialogue process and how to build trust among all stakeholders involved. This led to dialogue lessons that are relevant to any low-carbon technology.

In Germany, the dialogue focused more on societal and less on technological dimension of the energy transition. In German society, there is a relatively broad consensus on the existing challenges of the climate change. At the same time there are differing opinions on the application of the concrete solutions. The stance of the public towards renewable energy sources in general is very favourable, in contrast to fossil fuels and nuclear power. Nevertheless, similarly to other countries, the cost of electricity is a main concern of the citizens. Certain projects related to transition of the energy system often meet with resistance. German stakeholders generally state that there is a lack of public trust in technologies and in the stakeholders who promote them. This is largely related to the complexity that accompanies the transition process, and to a perceived lack of public awareness with regard to the magnitude and gravity of the specific long-term consequences of climate change, despite an acknowledgement of the general challenges posed by climate change. In addition to the engagement with innovative technologies, the Council calls upon citizens and companies to accept the costs of energy consumption and to change their consumer behaviour.

As well as professional stakeholders from R&D, industry, government and NGOs, the United Kingdom team invited informed citizens to participate in the dialogue directly, on their own behalf, and engaged them in the "design thinking" method. To adapt the topical focus of the dialogue to the very diverse panel, the emphasis was put on the behavioural and lifestyle aspects, including food, terrestrial transport, and going on holiday. Individual technologies were not debated in-depth at Council meetings, but the technical issues relating to energy efficiency were analysed at the subsequent workshops. However, it was indicated that the overall approach of the participating citizens to renewable energy is favourable, and the benefits of reducing carbon dioxide emissions are acknowledged. The costs of certain technologies, however, such as carbon dioxide capture and storage, were perceived as too high, considering their perceived limited effectiveness. Due to the limited public knowledge and comprehension of the CCS, this technology seemed to be less attractive to the citizens than, for instance, solar and wind energy. It was suggested that the application of the specific low-carbon technologies should be derived from the nature of a geographical area in question and the overall process should be supported through government subsidies.

In the French national dialogue, the topical focus was inspired by the interviews with stakeholders as well as a French national debate on the low-carbon transition organised in 2013 by the French government. In comparison with the above-mentioned countries, this dialogue dedicated considerably more time to specific technologies, such as wind power or electric vehicles. In the case of wind power, public acceptance was the main concern, with relation to the costs and to the potential of further development of wind power. In the public debates, the notion of efficiency was underlined, in connection to both innovative technologies and the responsible consumption of energy by citizens. The national panel also addressed the issue of nuclear power, acknowledging the specific situation of France, which is generated by the interplay of historical, military and industrial factors. The panel expressed a resolution to fulfil the European objectives of low-carbon technologies in the French energy mix.

In the Czech national dialogue, the focus on individual technologies played a very important role. The attention was given to solar photovoltaics, nuclear energy, biomass, and energy savings. The biomass and solar photovoltaics gained special attention, as they were a subject of expert presentations at the Council meetings. To some extent, also other issues such as wind energy, electromobility, energy storage and CCS were addressed. The debate centred on the public acceptance of low-carbon technologies, as well as their safety, costs, the state of the art in research, and the potential of further development. It was noted, however, that the prospect and the record of development of highly innovative projects has been rather unsatisfactory in the Czech Republic, and there is the general preference for mature technologies. A good example is the relationship of the Czech society to solar photovoltaic technology. Thanks to generous support by the Czech government, which caused an increase in energy prices, vast solar parks were constructed in many places, including those with very fertile soils. For maintenance, chemicals are used to prevent growth of grass. This may negatively affect also the neighbouring land. Due to this experience, many new technologies are perceived with worries and scepticism, including distrust of administrative decisions. A similar experience with solar parks is also true for Italy. Societal dialogue could be a way to prevent these kind of mistakes by applying only solutions that have been previously well discussed with local populations, who are more likely to be sensitive to potential harm and consequences on their territory.

In Spain, some of the stakeholders of the National Council had already participated in various platforms (e.g. Alliance for Research and Energy Innovation, ALINE) that discuss the potential of low-carbon technologies. The resulting outputs were used as a point of reference for the national dialogue. However, a wider framework was set to approach the general public and the specific technologies weren’t discussed individually. The topic of low-carbon technologies was introduced as a part of the general strategy to maintain the diversity of the energy mix in the future. Some technologies have been referred to during the spontaneous process of the discussions within the Council meetings and in the process of writing the discussion and

vision papers but mostly in a general way, as one of the relevant issues to be considered to reach a national energy strategy.

4.4. Conclusion

It is evident that topics discussed in national dialogues are very diverse. The main conclusion is that dialogue on the energy transition can take different pathways. These might include detailed discussion of specific technologies or rather focus on more general issues. Depending on many factors such as situation of the country, background and organisation of the participants, personal preferences, critical experiences, etc., the direct discussion of technologies can be a help in being concrete, something to avoid, a waste of time, a preferential “neutral” area, a way to raise interest, etc. Therefore careful consideration should be given to this aspect, when organising a dialogue action on this topic. Before any positive engagement on specific technology discussion can take place, a lengthy, open and more generic dialogue is probably necessary.

The extent to which technical aspects of the energy transition were talked about also varies from country to country. The same goes for the energy mix. Its exact composition was usually not agreed on. There was, however, a general agreement that the proportion of renewable energy sources should be increased, and that an emission-free energy system should be aimed at.

The topics covered during the national dialogues reflect, to some extent, the current (geo)political situation, e.g. international commitments, composition of national governments, and the relationship with Russia. The topics also reflect the fact that the energy transition is a long-term, societal project, which is more difficult to accomplish without the public’s involvement and approval.

The national dialogues often centred on public acceptance (and support) of low-carbon technologies and on the general public attitude towards climate change mitigation. A lot of effort was put into identifying obstacles, such as lack of public knowledge, interest or trust in low-carbon technologies, as well as looking for the possible ways to overcome concerns and distrust. The most debated issues were usually those that are at the forefront of citizens’ interests, particularly the cost issues in terms of electricity prices. This is probably caused by the fact that prices concern almost every member of society, as virtually every citizen is an energy consumer. The role of citizens as consumers therefore seems to be the most visible one, and the need for changing consumer behaviour was emphasised in some countries (UK and France).

Other roles that citizens take were also present in the debates. The issue of necessary investment, the burden of having new energy-producing facilities deployed near the populated areas, changes in employment, or potential side effects and safety issues were mentioned.

This happened even in cases where stakeholders who could most intensely articulate these issues did not participate in the National Council in question.

It seems that stakeholders are generally aware of the public attitudes, since they experience these in their countries on an occasional basis (in form of protests or local energy initiatives). Many stakeholders implicitly take these attitudes into account when they develop projects or visions, to ensure that these are feasible.

5 Energy transition economics and dialogue

The biggest issues can be the toughest to handle in a dialogue. The costs of the energy transition seem to be one of those issues. This chapter gives a rough indication of how money flows in our current energy system, and how economic aspects were discussed in the national dialogues.

5.1 Economic indicators of energy in the EU[10]

The EU energy sector comprises over 70,000 enterprises that employ around 2 million people, with a turnover of over €2,270 trillion[11].

The EU imports more than half of all the energy it consumes. Its import dependency is particularly high for crude oil (more than 90%) and natural gas (66%). The total import bill is more than €1 billion per day[12] or roughly €400 billion per year.

To realise the energy transition public and private institutions in the EU would need to invest an additional €270 billion or 1.5% of its GDP annually, on average, over the next four decades. Up to 1.5 million additional jobs could be created by 2020 if governments used revenues from carbon dioxide taxes and from auctioning of emission allowances to reduce labour costs[13].

On average, Europeans spend around 11.4% of their disposable income directly on energy[14]:

- To power and heat our homes: 5.6%
- To fuel our cars: 4.4%
- To get around in other ways than by our own car (rail, road and air): 1.5%

Across Europe, average electricity prices for households and industries have increased by 29% between 2005 and 2011[15]. This increase is mainly due to raised taxes on electricity. In consequence, energy poverty is becoming an increasingly important issue to European

[10] These figures relate to the 28 countries of the EU, not counting R&Dialogue country Norway. Norway as oil & gas exporter and big in hydro-power, would make the economic indicators of this paragraph even more impressive.
[11] http://ec.europa.eu/energy/sites/ener/files/documents/2014_pocketbook.pdf
[12] http://ec.europa.eu/energy/en/topics/energy-strategy/energy-security-strategy
[13] http://ec.europa.eu/clima/policies/roadmap/index_en.htm
[14] Figures from EU-27, 2010, Eurostat: http://ec.europa.eu/eurostatf, as presented in http://ec.europa.eu/eurostat/documents/3217494/6303711/KS-DZ-14-001-EN-N.pdf/d867b24b-da98-427d-bca2-d8bc212ff7a8
[15] http://www.iea.org/bookshop/615-Electricity_Information_2012

citizens[16]. The challenge of making the energy transition a fair transition has yet to be operationalised.

In other words, economy-related aspects such as employment, industrial activity, energy dependence, transition costs and consumer prices play an important role in the energy transition and in our low-carbon dialogue.

5.2 Affordable energy

Energy prices is what people talk about

When people talk about energy and the energy transition, energy prices for private households usually enter the conversation quickly. This in turn makes prices a key issue for politicians, policy makers, and the media. Therefore, putting the energy transition in practical terms often means answering the question: “what is the effect on consumer prices?” The dialogue on the energy transition revolves around that question to a large extent. For instance, in the Italian dialogue, any discussion on supporting new technologies was associated by the involved stakeholders with the costs for the consumer related to incentives and subsidies, which in the last few years have built up to a considerable burden in the electricity bill. At the same time the Italian participants observed that the focus on consumer prices can be detrimental if it does not include understanding of how those prices come to be formed.

Energy economics as a conversation starter

In R&Dialogue, economic issues were in many countries a good topic for getting discussions started. Economic issues in the Czech Republic, for example, are one of the most frequently discussed topics in the national energy transition debate. This is supported by a negative experience with “solar boom” policy a few years ago . This resulted in very high subsidies causing, among other, the rise of electricity prices. In the Netherlands, affordability of energy is in the top three priorities of energy policy, next to reliability and sustainability. Germany (North Rhine-Westphalia) and Portugal see a lot of debate on electricity prices as well. The Portugal Council notes that this debate would benefit from more and fair information to all stakeholders
on the composition of electricity prices.

The Italian Council targeted the electricity bill as a

[16] http://www.fuel-poverty.org/files/WP7_D26-1_en.pdf

tool for starting the dialogue with citizens. Greece in the second decade of this millennium is in a challenging economic situation. This has urged the Greek Council to put the energy transition dialogue in the context of growth and jobs, an approach that shows an overlap with the view of the European Commission. Feed-in tariffs and other ways of providing support to renewables and CO_2 Capture and Storage (CCS) were by the Greek dialogue participants mostly seen as creating higher energy prices for both households and business. In the Czech Republic the matter of the energy transition potentially increasing energy poverty was a matter of concern. The Czech dialogue also discussed which economic aspects of the energy system should be included in the energy bill: e.g. stability of supply, grid stability, carbon prices.

Economic aspects as a barrier to the transition

In Scotland, throughout the dialogue, economic issues arose almost exclusively as a barrier to low-carbon transitions, and participants stated that the level of investment needed is likely to require substantial government intervention. In Norway, it was even claimed that overrepresentation of economists (who are seen as focussing on the economy rather than the environment) in national ministries has had a negative influence on the speed of the energy transition.

However, economic aspects of the energy transition are difficult to talk about. In the dialogues, a variety of reasons were mentioned that make this issue a particularly sensitive one: high political sensitivity, high complexity and the different and opposing perspectives and interests of different stakeholders. The Italian Council noted that developing a “competent” exchange on this aspect of the energy transition is very complex, also due to the many hidden costs of the different choices.

The participants of the German (North-Rhine-Westphalia) Dialogue Council stated that it is essential for a successful energy transition to integrate climate mitigation goals and development targets for renewable energies in such a way that they ensure a socially, economically and ecologically prudent distribution of costs and benefits.

5.3 Economic interests

Big vested interests need to be tackled

In any system change, it is important to take interests of the existing system seriously. Participants in the dialogues stressed that awareness of these interests and corresponding power relations is a key consideration in any dialogue on the energy transition. In this context, the Portuguese Council stresses in the long-term return on investments in fossil fuel systems as a barrier to the energy transition. In any case, inclusion of energy market actors but also their ability to cooperate with other actors are essential for a successful transition towards a low-carbon society. This is reflected in the composition of the National Dialogue Councils of

R&Dialogue, where energy industry representatives play an important role. The transition of the next decades is likely to be characterised by a continuous debate about whether renewables or fossil fuels should dominate the energy mix. In the Czech Republic this is illustrated by the regular dispute between renewables and nuclear. However, the energy transition in the long term will require the creation of a new decentralised structure of the electricity market, as noted by the German (NRW) Dialogue Council. A dialogue on the energy transition therefore needs to be inclusive; all relevant stakeholders should participate.

Competitiveness: the concern for industry and governments

Economic competitiveness often appears in the dialogue as a matter of national interest. For example, participants in the Greek dialogue believe that the implementation of the environmental legislation has rendered the industrial sector less competitive in comparison to the neighbouring countries. This is a concern to the whole of Europe as well, always seeking to strike a balance between the speed of the energy transition and the international position of European industry. At the same time, some industrial players realise that anticipating the energy transition in time can bring them a competitive advantage.

The Portuguese Council urges not to underestimate the dangers to competitiveness on the short and medium term given the large share of energy costs in overall operating costs in Portugal. The development towards a low-carbon society is also seen in some Councils as a great opportunity to improve European economy and competitiveness. In this respect, one of the most serious challenges is making the right decisions on investments. As the Italian Council points out, the big effort and public investments required by the energy transitions could create high risks of speculation and prevalence of vested interests. These risks need serious consideration as they influence the optimal use of resources, which is fundamental to ensure competitiveness together with the achievement of emission reduction targets.

The German state of North Rhine-Westphalia is a highly industrialised region. Therefore some German dialogue participants are particularly concerned about the possible negative effects of climate measures, while acknowledging the possibility to set a positive example. Some participants in the German (NRW) Dialogue Council indicated possible dangers for the economic situation of North Rhine-Westphalia, given that in its position as an industrial location it will have long-term dependence on affordable energy supplies, both on a national and international scale. In the context of the European emissions trading system it would be a cause for concern if emissions were not avoided but merely relocated to different parts of Europe ("carbon leakage" within the EU, so to speak). Thus, the corresponding challenge arises to combine climate mitigation measures with the preservation of energy supply security at its high current level.

To mitigate the problem of competitiveness, the French Dialogue Council suggests a life-cycle analysis and an environmental tax on imports from outside Europe. This is intended to avoid a loss of competitiveness for European companies that have to adhere to stricter environmental standards than their competitors elsewhere.

5.4 Energy resources, imports and exports

Natural resources shape the dialogue

Energy provisioning relies on using available resources. Energy arguably amounts to the biggest economic interests in the world. As such they define a country's approach to the energy transition. In R&Dialogue, the available national energy resources have shaped the low-carbon dialogue of the National Dialogue Councils.

A good example of this is seen in the Netherlands, which is highly dependent on gas for households, industry and its government revenues. Gas plays a big part in the Dutch dialogue. Gas import and export has gained renewed interest from all over Europe as well due to the Ukraine crisis. Due to the large Dutch gas fields, the Netherlands is fairly independent of gas import. The Dutch economy benefits highly from the imports and exports of energy materials and products related to this. Gas is seen as a transition fuel that allows us to step away from more carbon intensive energy sources such as coal onto a renewable energy system. Flexible gas-fired power plants could play a role in supporting the energy transition. The Dutch Dialogue Council discussed the increasing importance of gas as such a transition fuel and acknowledged that any national energy dialogue in the Netherlands needs to deal with this properly. However, with low coal prices in 2015, new gas-fired power plants in the Netherlands are mothballed, while coal-fired power plants are running full steam.

In Greece the Dialogue Council concluded that the development of renewables and CCS should be based on national resources in order to achieve economic growth during the transition. The Greek energy transition needs to take into consideration available technologies and the economic impact that might come along in order not to block the economic growth and the development of the Greek society. Investing in energy efficiency fits this agenda very well. Paying foreigners for equipment (solar panels, windmills, carbon dioxide capture technologies) are watched with a sceptical eye in Greece at the moment.

In Scotland the Dialogue Council meetings took place immediately after the Scottish independence referendum in September 2014. As a result, one of the key Scotland-specific economic issues raised by the Dialogue Council was the clash between the (pro-independence) Scottish National Party's rhetoric of a low-carbon Scotland and their concurrent emphasis on the need to secure Scottish ownership of North Sea oil and gas. The Council questioned whether these two ambitions are compatible.

In the Portuguese dialogue, it was noted that Portugal, which has no significant fossil fuel resources, must in the long term invest in renewable energies and the electrification of transport. This seems to be especially clear when oil prices are high and less urgent when the price is down. The need for a long term energy strategy, usually not compatible with governmental cycles, was considered by the Portuguese Council as essential for the future energy system in the country. Similar considerations were made by the Italian Council.

These examples show that available energy resources will play a big part in any low-carbon dialogue, although in a different way in each country.

5.5 Decentralisation: the power of the people

From consumers to prosumers

Another important topic in many dialogues was the growing possibility for households and small and medium-sized enterprises (SMEs) to generate their own electricity, in other words going from consumer to 'prosumer'. This development has a big potential, both in lowering carbon dioxide emissions and in showing people that they have the power to play an active role in realising the energy transition. The implications of such developments were discussed with respect to their practical, societal, and political consequences. For instance, in the Italian dialogue it was observed that the advantages of independent energy production should be properly combined with those of more traditional forms of energy to ensure economic access to energy to everyone through public infrastructures. At the same time individual solutions need to be supported which might in the long term become affordable and available for all.

Decentralised power sparks the dialogue

As indicated by the Dutch Dialogue Council, the economic and political environment for the traditional power and energy production companies with large centralised power plants will change during the energy transition. This will mainly be due to the growth in the number of small decentralised entities generating electricity such as households, SMEs, cooperatives, and local communities.

As part of the wider dialogue process in Scotland, a citizen's panel was organised in the first half of 2014. This panel raised economic issues in relation to specific energy technologies. Participants questioned why there wasn't a greater emphasis on embedding renewable energy technology, such as solar panels, into the design and construction of new buildings as this would be more cost-effective than retro-fitting. It was suggested that citizens would be willing to accept the additional costs of assisting the development of renewables, but this would need to be completely transparent, with a clear indication of exactly where any extra taxes were going and why.

In the Czech Republic the topic of citizens and cooperatives owning renewables raised the question: do we have appropriate conditions? Do cooperatives or other forms of collective ownership/investment have a sufficiently strong position (legal, etc.) to enable or encourage public participation in the emerging decentralised energy sector?

5.6 Incentives and investments

Changing behaviour with incentives

Using and saving energy is a matter of behaviour and investments by both consumers and industry. Governments have a variety of means to influence this behaviour, by introducing incentives or penalties. These are mostly economic in nature and can have a big impact. As the German (NRW) Dialogue Council remarks: as long as a car journey with high carbon dioxide emissions remains a cheaper and more time-efficient option than an ecologically more preferable train journey, the majority would always opt for the car. The same was felt to apply to consumer behaviour in the area of product renewal as opposed to product repair. The path that would lead to a reduction in emissions would, in the final instance, also have to be the most economically advantageous. In this regard the contradiction emerged in the dialogues between the request to reduce consumption and growth strategies of our current economic system, which rely on constant or even increasing consumption. Different sets of values underpin different behaviour, but it is not always easy to distinguish between them. This is also because, as mentioned in the Italian dialogue, innovation could make previously impossible goals accessible at affordable prices.

Incentives and taxes to speed up the energy transition

An important recommendation of the discussion in the Dutch Dialogue Council was to give stakeholders economic incentives to improve the speed of the energy transition. This in turn led to the following recommendation: motivate leading stakeholders, stimulate average stakeholders, and sanction the stakeholders lagging behind.

According to the German (NRW) Dialogue Council, measures, instruments and structures must all be designed to enable a better and a more transparent breakdown of costs and benefits. As a consequence, political decision-making processes that address these aspects should be revised to allow for a more integrated and just economic approach to the energy transition. According to the participants in the German Council, such a revision had not yet been debated in public.

A similar remark was made by the Italian Council: if transparency and information on energy investments through a more systematic economic approach were improved, this would enable a better understanding of which choices should be incentivised. Life cycle assessment and

modelling of costs that also includes citizens' evaluation should be an important part of this process.

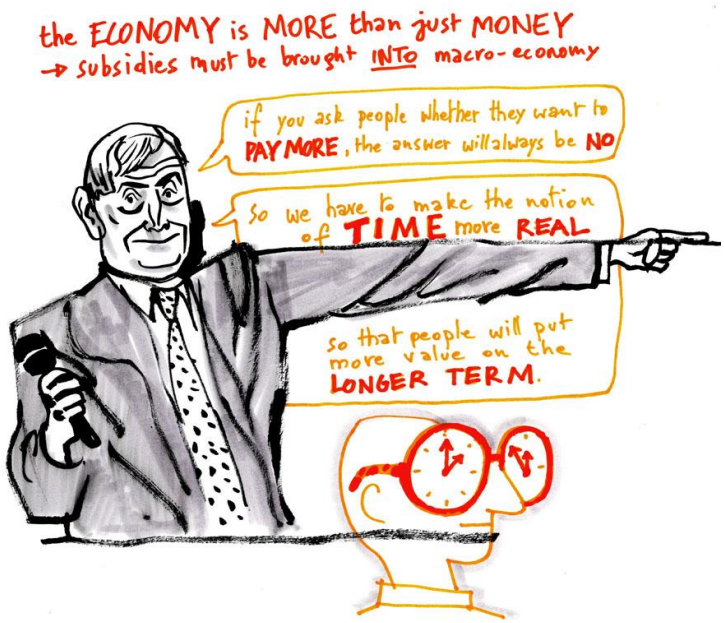
The Czech Republic Dialogue Council discussed subsidies and incentives as well. However, the Council had a hard time agreeing on how to implement them and on whether to go for a technology neutral or technology-selective approach. Also, the question arose how citizens with low incomes can take part in the (low-carbon) changes and the subsidy programmes currently on offer.

In Norway, the matter of green taxes was a recurring subject. Some political parties in Norway have asked for a tax transition that can nudge the choices people make towards more climate-friendly behaviour. The Norwegian Dialogue Council also supports the idea of a tax system that makes it easier to make green choices for both individuals and corporations.

The members of the Scottish citizens panel suggested that, whilst it is likely that consumers will have to subsidise the development and expansion of renewable energy technologies via increases to energy bills, it is the government's responsibility to ensure these costs are shared fairly and are transparent to the consumer. They suggested that the government should take a stronger lead in implementing carbon dioxide emissions limits and enforce taxes or fines on businesses that continue to emit high levels of carbon dioxide.

Necessary investments in technology and innovation

In Scotland, economic issues are closely tied into conversations about energy transitions, since a shift towards low-carbon energy production will require an unprecedented investment in renewable energy technologies. The Netherlands Dialogue Council even suggests that a government-instigated "war economy" is the only way to realise the necessary investments and prioritisation of the energy transition.



In Norway investments were mostly thought to be needed in innovation. The lack of funding available for the commercialisation of new technologies or new renewable projects is a subject that many bring up as

a potential roadblock for the transition. The Council members say that there are a lot of public funding alternatives for research, but that public or private investments in commercialisation are hard to come by. The need for long-term public investment-cycles was also brought up as a key to building up the necessary low-carbon industry. In general, the Norwegian Council calls on politicians to steer private investments and citizens towards a low-carbon society and for state enterprises to lead the way.

In Italy the Council stressed the importance of shifting investments from renewable commercial implementation projects to research and innovation projects. Prior to this a serious evaluation should be undertaken, involving all stakeholders, of the schemes of investments already employed to find more focus for reducing emissions in an economically profitable way.

A concluding remark on economic aspects of the dialogue and energy transition comes from the German (NRW) Dialogue Council, which reached a consensus among the participating stakeholders that purely economic measures would not be sufficient to reach a low-carbon society. The creation of a comprehensive master plan would be essential to promote investments, innovation and behaviour towards a real and secure low-carbon energy supply.

6 Science and Civil Society

6.1 Introduction

The relationship between science and civil society is challenged, amongst others, by a lack of communication and cooperation. At the same time studies have shown that successful climate change governance depends on improved collaboration between science and society, to develop robust and applicable knowledge to address wicked problems (Weichselgartner and Kasperson (2010)). Wicked problems are characterised by a high degree of uncertainty, inconsistency and complexity in a continuously changing environment. Climate change is such a wicked problem and so far it remains an unsolved challenge towards sustainable development. That is a reason why some postulate, that 'there is emerging agreement that sustainability challenges require new ways of knowledge production and decision-making' (Lang, Wiek et al. (2012), p. 25). Socially robust or context-sensitive knowledge can be generated through the co-production of knowledge – 'i.e. the joint production of assessments reports by experts and decision makers' (Weichselgartner and Kasperson (2010) p. 267).

During the dialogue process of R&Dialogue researchers have taken a new role: we have initiated, organised and moderated a dialogue between science and civil society. This chapter will describe first what the involved stakeholders have discussed about the interplay between science and civil society. The second part will show what we have learned within this dialogue process regarding the benefits, challenges and limits of dialogue between science and civil society.

6.2 Findings from the Dialogue about the interplay between Science and Civil Society

The involved stakeholders have discussed current problems and challenges of science communication but also of knowledge production and dissemination. Some national dialogues have also reflected on the role of science and what needs to be done to improve the identified challenges.

Identified challenges and problems

One challenge was summarised by the Dutch Council members as a 'knowledge dilemma', but also the German stakeholders described the same problem: Due to improvements in Information Technology and telecommunication, access to information has become easier and the percentages of people with an academic education rises constantly. This has led to a better educated and critical society, which often mistrusts decision makers and even scientific expertise. Whether information is perceived to be 'neutral' (meaning not used to promote particular interests) and trustworthy seems to depend, among other factors, on the respective stakeholders involved, being either those who have produced the information or spreading it. Furthermore, science does not produce unambiguous solutions; a large number of

contemporary studies exist, and they use different methods and reach different conclusions. On the one hand, this diversity of information is good, to avoid dominance of a single view, but on the other hand, it is hard to distinguish valuable and solid information from biased and manipulated information. This links to comments made by Sykes and Macnaghten (2013) about public scepticism of science, particularly amongst environmental/conservation NGOs:

> Science is no longer indisputably a force for good. It produces unforeseen effects, increasingly global in scale and long-term in nature. It is involved both in the production of environmental harms and in their resolution. It is also part of the contemporary social and economic order, and closely tied to processes of industrialism and consumerism. Scientists have taken different sides in these debates, and sometimes felt uncomfortably stuck in the middle. (pp. 86-87)

Some of the R&Dialogue project's National Councils identified that there exists a shortage of competencies, both among scientists, policy makers, and journalists in the area of communicating the complexity of scientific information in a manner that made it accessible and understandable to laypersons. (See Dutch Discussion Paper, p. 8; German Discussion Paper, p. 17; Greek Vision Paper, p. 11; Italian Discussion Paper) It was noted in the Italian dialogue that the scientific mode of functioning and its characteristic thought processes are far from common approaches to problems and it is often difficult for non-scientists to understand how they can integrate scientific findings/reasoning in their perspective.

Another aspect of the knowledge challenge identified during the Italian dialogue regards the fact that even if the best scientific information was to be perfectly communicated, scientific and technological issues in the energy and low-carbon field would still retain a high level of complexity. Furthermore, the range of possible solutions is vast and making decisions on which ones to choose is a difficult task. The greatest challenge, identified by the Italian Council members, seems that of finding ways to make sense of information and manage its complexity. In this respect, the experience in the Italian dialogue suggests that experts and lay people should

meet to discuss information and reason together. This might provide the kind of experience that makes a difference by finding useful and satisfactory criteria for orientation.

In France and Italy also a lack of background scientific knowledge in the lay population was identified, e.g. being aware of scientific matter and issues of scales. The Portuguese Council also acknowledged that there is a big potential for researchers to be more active in the communication efforts on complex issues, as they have a good credibility advantage among the communities, perceived as having no vested interests in the subjects conveyed. In Italy instead, the lack of sufficient recognition of the role of competence was highlighted and the confusion that is created when expert and not expert advice are considered as equals.

The Norwegian Council discussed the need for knowledge and learning (and education). However, they have also concluded that the type of education and way we learn may have to change to help us deal with the complex issues and transition that require interdisciplinary and transdisciplinary approaches. Some Norwegian Council members also emphasised the need for in-depth knowledge and specialisation, i.e. “not just width but also depth”.

The Greek stakeholders identified that the information is easily accessible and objective. However, they also felt that there is lack of interest from the citizens to reach that information or sometimes to participate in the dialogue when they are asked.

The role of science

Even though science seems to lack the ability to communicate its findings to society, universities and research, compared to local authorities, governments and industry, were seen by the Greek Dialogue Council as the most important institutions to start/initiate a dialogue on a low-carbon society. (See Greece Discussion Paper, p. 11) Both the Greek and the German stakeholders named the implementation and practice orientation of scientific knowledge in everyday life as the main goal of research. (Greece discussion paper, p. 13; German Discussion Paper, p. 17) The German and Dutch experts were of the view that research should be a process more open and transparent about its outputs and its technology. Among other things, research needs to deliver neutral information for public discourse on approaches to problems. Science does not have all the answers and cannot know everything; these insecurities need to be communicated. Correspondingly, science should develop, e.g. models and scenarios to indicate different courses of action and show the insecurities or difficulties in predicting and shaping models instead of producing predictions. At the same time, however, it was also argued by participants that more research of an applied character, and forecasts etc., should be a component of discussions.

The French dialogue had similar discussions and conclusion. The responsibility between science and politics was clearly defined: Science is to investigate feasibility, costs and impacts, while it is the society’s responsibility to decide whether a technology is to be used.

However, it was not clear at what point a decision should be made. The example of Shale Gas in France was given: policy decided that no shale gas exploitation should be done in France. Should that also mean that science shouldn't investigate it? This would result in a better understanding of the potentials and the risks. A similar situation was remarked in Italy with regard to nuclear power.

The Italian Council discussed the need for researchers to discuss and clarify which scientific findings can be considered agreed and consolidated by the scientific community. This was seen as part of the role of scientists and a way to facilitate communication of research outputs to the media and other stakeholders. At the same time it was pointed out that knowledge cannot be delegated. Science encompasses many forms of knowledge, but also those who do not belong to the scientific community are bearers of non-scientific knowledge. When the interaction of the different knowledge and experience takes place, as it happened for instance with the citizens of Caprarola, new ideas that are interesting for everyone emerge. Thus the role of science should be contextualised as part of a wider societal effort towards knowledge.

Possible solutions/ measures

In order for the most objective information possible to be generated, findings and knowledge from different stakeholders would have to be collated. This could prevent information from becoming partisan. An example could be the status reports of the United Nation's Intergovernmental Panel on Climate Change (IPCC), which have been drawn up and commented upon by a great number of authors. In parallel, during the process of integration of the different knowledge, there could emerge a better understanding from the stakeholders involved with respect to viewpoints and perceptions.

A further approach that was identified by the German participants was to establish a "Clearing Centre" for knowledge. This would take on the function of identifying best-practice examples and should offer the opportunity to reflect on recent happenings.

The German and Italian experts were of the view that a space for continual exchange should be created. In this regard, it was of particular importance to ensure that different opinions would be permitted and that openness would be realised for the outputs. The dialogue would have to be characterised by a sense of esteem and trust, which was felt to be lacking among participants in existing processes. For improvements in these areas, one of the necessities would be for dissolution of hierarchies. Further, the view was made clear that existing discussion processes and structures were inadequate. New methods should, therefore, be developed to achieve better processes. (German Discussion Paper, p. 18; Italian Vision Paper). The innovative method used in the Italian dialogue, which received a positive feed-back of both Council members and citizens, indicates that it is important to organise events that stimulate curiosity, questioning, and exchange of ideas, rather than events with the aim to

inform and explain. Initiatives that offered the opportunity of encounter and reciprocal listening between scientists and the other stakeholders were well received. This can help people feel involved in science development and allows them the freedom to develop their own interest in the topic. The Italian Council advises to extend this kind of initiatives to all targets and especially the young generation.

The Dutch Dialogue Council discussed the inclusion of science - civil society dialogue at the start and during research projects. One of the ways for scientists to better understand civil society concerns is by listening to them at the start of research projects (or even when developing research project proposals) and taking these concerns into account. The bigger potential societal impact of a project, the more important this is. Low-carbon technologies such as wind, solar, CCS are good examples of areas where such a dialogue needs to be part of research projects. It was assumed that taking time for dialogue early in (research) projects, results in quicker projects as a whole. The work of the Italian Council with a local community ended up with the conclusion that science – civil society dialogue should first be initiated independently of particular projects. This emerged as a possible toolnot only to build a trusting relationship, but also for providing to the scientific community much needed input on the characteristics of local reality and needs. This was seen by the Italian participants to improve the understanding of which projects might meet the objective of emission reduction while at the same time improving quality of life of citizens.

Knowledge and understanding of scientific results and research projects among the public would, in the view of the German stakeholders involved, have to be improved. One measure to be taken in this regard was given as the initiation of regional talks between the scientific establishment and society. In this context it was identified as being of particular importance for a communication to evolve that would be specific to a particular target group. This would enable, for example, a "story" to be told that would depict the benefits and the opportunities from the respective type of research.The German Council suggested that an independent media institution should monitor and assist any such process. But this should also involve a further training of scientists to enable them to give better reports about their work and findings and to communicate more effectively with the wider public. It was of additional importance for the existing "reciprocal mistrust" to be broken down. There was agreement amongst those involved that pure scientific knowledge was not devoid of actual value, and that neither was applied practice without knowledge.

During the Greek National dialogue, it was said that informed citizens are a prerequisite for realising the energy transition. Science, in collaboration with the government and the regional/local authorities should see to it that they introduce environmental education of society from the early stage of a person’s life. The society should be informed in order to be able to develop an informed and critical view.

The curriculum at nursery schools, (vocational) schools and universities, as well as that of the many other educational establishments, should be strengthened and aligned with the aim of increasing awareness of the transition process, and of creating an understanding of the technologies and determining conditions. Especially in the French dialogue process it was stressed that familiarity with scales, percentages etc. and ability to look at numbers critically needs to be improved.

In the Portuguese dialogue, the involvement of younger people was considered essential for the success of the transition to a more sustainable energy system, and the ability to engage in a trans-generational dialogue came out as an important asset.

6.3 Reflection on the Dialogue Process between Science and Civil Society

The 'Responsible Research and Innovation' strand of Horizon 2020 'Science with and for Society' programme underlines the benefits of cooperation between civil society and science:

> Responsible Research and Innovation (RRI) implies that societal actors (researchers, citizens, policy makers, business, third sector organisations, etc.) work together during the whole research and innovation process in order to better align both the process and its outputs with the values, needs and expectations of society. In practice, RRI is implemented as a package that includes multi-actor and public engagement in research and innovation, enabling easier access to scientific results, the take up of gender and ethics in the research and innovation content and process, and formal and informal science education.[17]

Also within our consortium we agreed on the need to establish knowledge-based governances of our societies, and address complex and uncertain challenges in the transition process. Scientific knowledge has a role to play and is needed. However, also local knowledge and "non-scientific" knowledge has a role in the transition and in creating the societies and communities we want. People living in the communities are experts in their own lives and also have first-hand knowledge of contextual aspects.

In the past two years the R&Dialogue country teams have made various experiences in multi-actor and public engagement in research and innovation to be able to reflect on the benefits, challenges and limits of this approach. The different national dialogues in the ten countries were framed quite differently and thus the partners of R&Dialogue took different roles in the dialogue process: as a facilitator, as a participant and as a moderator. Due to this variety of roles the experiences differ also, which helped to gain an in-depth understanding.

[17] https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation

The Scottish Team for instance were particularly interested in understanding how the design-thinking process worked to bring together different actors with complementary knowledge and experiences. Therefore, one of the team members became a full member of the Council so that an 'insider' perspective on the process could be gauged and reflected upon. As soon as we elevate science we end up with hierarchies, and in many discussions which seek to integrate 'science' and 'society' groups, there is often a strong 'us and them' mentality, from both sides. Therefore, the UK team selected a design thinking approach specifically to avoid creating a distinction between science and society. By focusing on some of the particular concrete low-carbon challenges that we are all currently facing in society, rather than trying to tackle wickedness intellectually, the UK team facilitated the Council to direct the questions for scientists and (even more so) engineers, by asking 'Can we do it this way?', rather than discussing a set of options already formulated by scientists/engineers.

The Italian team focused instead its attention on the psychological aspects of the relationships within a varied group of stakeholders. Continuous exchange in the country team, which is also characterised by multidisciplinary expertise, supported the dialogue development with the objective of creating a relationship in which all participants could feel equally relevant and create together a process of "collective intelligence" (Conklin, 2006). Rules and settings for the dialogue were developed that could facilitate the overcoming of distances and differences related to roles, competencies and power, by encouraging and supporting the expression of fundamental human skills like listening, empathy, interest for otherness. This approach, among other things, allowed the group of participants to easily find a common interest and to collaborate in relation to it. It is important in these discussions to acknowledge the roles and responsibility of individuals and institutions with technical expertise. It has long been the norm that responsibility for scientific and technical issues should be delegated to 'the experts'. Often a question that is (implicitly or explicitly) posed by non-scientists is, "Why are you asking us? Go and ask the experts!". There is something quite important in this response, in putting the focus of responsibility clearly on experts and their institutions. Many members of the public are happy to have experts and expert institutions to advise them on things they don't know about, and a criticism of participatory approaches to decision-making has been that they appear to be trying to spread this responsibility around to include civil society actors. A key issue which then arises is the lack of trust in those experts and how experts and their institutions need to work in order to cultivate or re-build trust. Another perspective on this problem was experienced by the Italian Council when meeting the citizens. It may be difficult for a lay man to imagine an equal exchange with the experts. In the view of the Italian team, this is something unusual and awareness about the contribution that citizens themselves can provide in the context of such an exchange is virtually not existent. However, when people in the Italian dialogue had the opportunity to make this kind of experience, they started to appreciate why they were being asked to participate and gradually developed their own

demand of interaction. This made them more active also in taking benefit from expert advice. In this case, the specific characteristics of the relationship that was established allowed each one to play a role, take responsibility and feel involved in finding solutions to the issue at stake.

The UK R&Dialogue team actively sought to address the problem of mistrust and hierarchies in dialogue processes by using 'design thinking', an approach to problem solving which mimics the characteristic of the design process, which is creative imaginative and emotional This allows participants to express themselves in ways that fall outside of the conventional bounds of rationality and language. It can thereby help to also break down the hierarchical relations implicit in 'expert'/'non-expert' dichotomies by giving equal value to broader capabilities, such as, humour, creativity, empathy, manual skills, and the capacity to work within a diverse team. As a result, design thinking was found to be an effective 'leveler', enabling the members of diverse teams to have an equal voice, regardless of their prior knowledge or experience of the issues (see the UK Discussion Paper for more details on design thinking). Whilst many participants embraced this format, some participants – particularly those with a deep academic understanding of climate change and low-carbon transitions – reported that they didn't feel able to fully contemplate the issues within the restrictions of the design-thinking format, and would have preferred a more traditional discussion format.

This highlights that it can be difficult for some stakeholders to see the advantages of alternative methods of exchange and problem analysis. Since these are, however, very useful to facilitate the joint work of all societal actors in the research and innovation process required by Responsible Research and Innovation there is the need for further research to understand how these barriers can be overcome. We are aware that the term 'research project', which we referred to in the second section in the chapter, is not clearly defined. Within the dialogue processes of our country teams this term wasn't defined by the stakeholders. However, research issues and scientific methods vary and can go from fundamental research to applied and further on to pilot/ prototype development. Therefore due to the variety of research projects it is not possible to generally aim for the involvement of non-scientific actors in research. For instance does research that analyses "the ion repartition at the water gas interface in order to better assess gas solubility" need practitioner's involvement? Further, to generate innovations more than a single project is needed. Thus we need to look at a more complex process of innovation and the question arises: At what point and how should non-scientist be involved? The experience in the Italian dialogue seems to indicate that a stable relationship of researchers with civil society organisations and/or communities could provide a general framework within which more specific moments of joint work could be activated as necessary. The idea of constant direct communication with civil society can be in itself a strong driver for a change of culture and facilitate both researchers and civil society actors in

finding appropriate ways for involving non-scientists in research processes. However, it should be clear that once people are involved their input needs serious consideration. In this regard, it needs to be better understood how to reconcile the need of independence and freedom of research, which is so important for innovation progress with the participation of all stakeholders.

On the whole we conclude that dialogue between organised civil society and the scientific community is an important element in developing robust and applicable knowledge. By means of the exchange of research findings and experiences between these two groups of stakeholders, a fundamentally more sophisticated examination of the current energy transition will be made, when compared with the positions that would have been adopted within individual disciplines or within the two separate groups of stakeholders. The Dutch Council concluded that a dialogue should even be broader and be between civil society, the scientific community, industry, politics and citizens. In the case of R&Dialogue Germany, there were no problems of communication or understanding between the participants, which can be explained by the fact that all of the stakeholders are experts in the field. The conflicts that arose were not generated between those stakeholders from civil society and those from the scientific community, but are rather based on the different emphasis put on available information and on different value orientations. The Czech team for instance observed that people working in different environments often live in a completely “different world”, and it is quite difficult to come to some general consent among them. This could be observed even in our project consortium where a “gap” between the social scientists and the people representing rather “science and technology” exists. We can also observe a similar gap between the world of environmental NGOs and researchers in the Czech national dialogue – a typical example is, e.g., the way these two groups are handling facts and literature citations. Many other differences have also been observed related to a variety of cultural dimensions. What we have learned is that it is worthwhile to spend time and energy to work on these gaps to improve reciprocal understanding, as when this work is successful it leads to better understanding of problems and possible solutions.

The identified ‘information deficit’/’public understanding of science’ framing of science-society communication both by the involved stakeholders but also from our own experiences as researchers has been criticised for ‘being one-way and top-down, rather than dialogic’ by Sykes and Macnaghten (2013, p.88-89). Therefore we concluded that everyone seems to be aware of the problem but in practice lots of efforts still needs to be undertaken to overcome it. Time and money issues seemed to be obstacles to knowledge co-production and proper dialogues between science and civil society. However, the topic not only touches the role of science but is rather an observation of democratic development. With regard to this, different reflections were expressed in the national dialogues.

Dialogue is anyway a tool – if the participants consider finding solutions together important, having the will and ability to listen – to make decisions and share information together. Whether participants are willing to act upon this is a matter of power perception, hierarchy and rule of law. In some cases, in the Dutch team but also people that were interviewed in the framework of the project argued that the 'Chinese system' – top-down implementation, not taking into account the environment and social context – is the easiest, fastest and cheapest way to reach goals and achieve objectives. This is, however, the opposite of dialogue and mutual decision-making.

7 Aspects for further dialogue

The question that the R&Dialogue project set out to address – "How can we achieve a low-carbon society?" – is a huge and very complex question. It encompasses a very wide range of issues, some of which are highly politicised and difficult to discuss. Many of these issues have been dealt with throughout the dialogue process. They have been addressed in either the written deliverables (Discussion Paper and Vision Papers), during Council meetings or even through public debate or new policy initiatives.

However, many questions still remain unanswered. This is partially due to the time and resource restraints of the project and the workload of the Councils – there simply was not enough time to cover every aspect of low-carbon societal transitions. However, there are also certain issues which were just too complicated, subjective, or politically-sensitive to be dealt with in detail in the Dialogue Councils.

In this chapter we identify and explain eight key questions that the R&Dialogue project has been unable to resolve and, therefore, still require further work.

7.1 Future European energy mix

What role should transitional technologies or energy sources have?

Some technologies and energy sources might be needed in the transition towards a low-carbon society, but should not be part of the final energy mix due to their environmental footprint or GHG emissions. This plays partly in to the discussion about the future of the fossil sector, like natural gas, and partly it revolves around technologies like carbon dioxide capture and storage for coal and gas. Depending on their respective backgrounds and employers, the National Council members have very differing views on this issue, and it has proven difficult for most to actually agree on a common vision for transitional measures.

Finally, in some countries we have seen a debate on whether or not fossil fuels should have a role to play in the actual transition towards a low-carbon society. The Greek National Council has in particular discussed whether fossil gas can be a part of the transition. Gas, being less carbon dioxide intensive that coal, can lower the emissions in a country, although as discussed in the Italian Council this relationship is not always simple due to potential losses of the strong greenhouse gas methane along the supply chain. However, relying on yet another fossil resource can create a situation where Greece becomes dependent on an energy source that will soon be phased out due to its carbon footprint and slow down the investments in alternative energy sources.

How should low-carbon technologies be supported or subsidised?

Different European countries have chosen different support measures to LCTs under national climate targets and the EU's 2020 strategy for "smart, sustainable and inclusive" growth. In most countries, the various measures have spurred at least some debate between consumers, industry, energy companies, NGOs and politicians. Since the National Councils have been and were intended to be quite diverse, the stakeholders have found it challenging to agree as to which support measures are the best, or how to actually ensure the necessary growth of LCTs. In Italy, for instance, there were complaints amongst some Council members from the fossil fuel sector regarding what they considered an ideological concept of low-carbon that did not acknowledge the real emissions of each technology.

Under the EU 2020 package of measures for climate and energy, certain European countries have implemented support schemes that do not favour one technology in particular. Other countries have used this opportunity to support less mature technologies in a targeted manner, e.g. through feed-in tariffs. The Czech Republic has discussed this at length, and for less wealthy EU countries this topic might of particular interest. It might be cheaper in the short term to choose the technologically neutral route, as this leads to the growth of the cheapest renewables. On the other hand, the development of new, less mature technologies might fall behind and the country might not have an incentive to build the infrastructure needed for a future low-carbon society.

What should the role of the fossil industry be?

Many European countries are still largely dependent on the use of fossil fuels or on the revenues from exporting coal and petroleum products. Many European countries still have large national energy companies, or they have a large part of the workforce that is employed (directly or indirectly) in the fossil fuel industry. The fossil industry might even be part of what we might call the "national identity" or the culture of a country. All these factors might make it difficult to discuss a future downscaling or closure of this sector. We have seen that energy and climate stakeholders also have very different views on how or when the downscaling should happen, or what role the fossil energy stakeholders might have in the transition towards a low-carbon society. Norway is an example of a country and economy that currently depends on its fossil industry: about half of the country's export revenues stem from the sale of oil and gas. In Norway, the future of this sector is a sensitive subject, and the National Council has not been able to agree on a clear answer to this question. Even in fossil fuel poor countries like Italy, where importing hydrocarbons like natural gas from Russia makes it vulnerable to geo-political and economic changes, it is difficult to imagine how such a transition can take place in the short term, both due to lobbies as well as the need for overhauling of the existing infrastructure and related costs. Other important issues discussed in Italy are the need to guarantee base-load and to supply the intense power requirements for heavy industry. Regarding the former, because renewable energy sources can be intermittent

and the problem of energy storage has not yet been overcome, backup power supplies that can be “instantaneously” started up will be needed; this will likely need to be in the form of fossil fuel plants (especially natural gas) kept in stand-by mode (which may incur significant costs).

In addition, some countries face the challenge of deciding who should determine whether or not a resource exists and should be explored. In most countries this decision has historically been left to the government. However, over the last few years we have seen that in many countries civil society and other stakeholders have been more vocal in this matter. This change is well exemplified by the ongoing debates about shale gas, and the French Council has been especially focused on this issue. With the exploration of this resource, the question about the future of fossil energy relates more to people’s neighbourhoods than ever before. For this reason it makes sense that civil society wants to be involved in the decision-making surrounding the future of a resource. The R&Dialogue Councils do not have a clear answer for how to solve this, however.

Should an energy strategy be formulated at European or at national level?

Today, the larger political strategies and roadmaps might come from Brussels, but it is up to each member state to attach measures to targets that have been agreed at EU level. The role of the European institutions and the way people feel about European legislation varies greatly from country to country. It might therefore be very difficult to answer this question for all ten countries represented in the R&Dialogue project.

The Eurobarometer on the Europeans and energy (2011) seems to indicate that Europeans rate the coordination of energy policies above national measures. At the same time, however, when it comes to energy cooperation, the priorities of Europeans are strongly influenced by the national energy situation[18]. The experience in R&Dialogue confirms this contradiction but also indicates that, at least to a certain extent, there is a lack of trust in the possibility of feeling represented by the solutions that might be adopted at European level. For instance, certain citizens are opposed to increased control from Brussels on virtually all issues. Finally, many stakeholders feel that the Member States themselves are best equipped to handle such issues as energy mix and emission reductions. The combined resistance to far-reaching EU action in these policy fields is therefore considerable.

7.2 Role of dialogue

Is dialogue an end in itself or is it a means to an end?

The R&Dialogue project has proved difficult to grasp for some stakeholders as it has been largely left to the individual National Councils to decide how the dialogue process should be shaped. This, as well as discussions within the Councils relating to the importance of

[18] http://ec.europa.eu/public_opinion/archives/ebs/ebs_pe_74-3_synth_en.pdf

dialogue, has led to the question whether dialogue in and of itself is enough or if dialogue should be a tool to come up with a solution to one or more specific questions.

Some Council members are satisfied with the act of dialogue as the output, and feel that the fact that they actually meet regularly and talk to other stakeholders, being free to decide the energy issues they want to discuss, is valuable enough. However, others believe that, in order to be worthwhile, the dialogue should lead to some sort of tangible deliverable or action, e.g in the form of a vision that would be handed over to policy makers. There is a danger that, if the outputs of the dialogue do not match the participants' expectations, they will be left feeling disappointed, frustrated and disillusioned at the end of the process.

It is an important ethical principle of any engagement process that there is clarity and transparency about what the outputs of the process will be for the participants before they begin. However, it is also a fundamental principle of dialogue that the direction and shape of the process is allowed to evolve organically as it proceeds, according to the will of the participants. Therefore, it can be difficult to balance these priorities, and to ensure that the outputs of the dialogue satisfy all those involved.

The UK experience provides a good example of this dilemma. The team, based in Scotland, was particularly conscious of the dangers of "dialogue fatigue" amongst stakeholders, due to the fact Scotland has seen several large (some nationwide) low-carbon dialogue initiatives over the last few years. Therefore, they were keen that their dialogue process was different from other activity that was already taking place, and added new value. This led to the decision to use design thinking as a way of generating practical and innovative solutions to particular problems. While this helped to satisfy most of the participants who were looking for clear outputs, there were a few participants who would have preferred for there to be less emphasis on delivering the outputs to allow for more exploratory discussions. Therefore, the question still remains as to how to balance the different perspectives on the value and purpose of low-carbon dialogue.

How should knowledge sharing between science and society be framed?

Many Councils identified the problem that information-sharing between research and civil society is lacking. The information might not be easily accessible in terms of not being shared outside the research community or that it is not communicated in a way that people understand. It might also be that it is not information as such the public needs, but rather a dialogue with the research community. In addition, there might not be enough information or knowledge-sharing from the public to the research community. We might not have the proper channels or arenas for such a dialogue to take place, but some of the Councils have not been able to conclusively answer this question. In Greece, for example, the Council concluded that science plays an important role as scientific stakeholders should disseminate results.

However, the Council highlighted that the results should be simple and easy to understand. Research should provide answers to real problems of the everyday life of society. In Greece, scientists are those that the people trust the most. In Italy the experience of the Council members with the population of Caprarola has highlighted that the information problem does not only concern the communication of science to people. There is also an issue with the information about the real world that researchers should know, to be able to understand what can be done in each case to tackle the energy problem. Collecting information about the local situation from the population was not an easy task. This kind of information is both difficult to collect and to understand in all its implications for the life of the people. The experience made raises many questions on how to better develop knowledge sharing between science and civil society, which is time consuming but can change completely the approach on the energy problem, making it more practical and functional (which can also reduce costs together with emissions).

Ensuring that communication from research to civil society and other stakeholders is understandable and holds the highest possible quality is important in order to avoid misunderstandings and miscommunication. On the other hand, many people might feel that all research and information (no matter the quality) should be shared with society so that everyone can make informed choices.

While some energy-related information is easily accessible and understandable (such as electricity prices and local energy projects), other information (such as policy developments on a national and European level) might be more complicated and specialized, but they all affect society and consumers to a certain extent. The crux of this issue is the ‘easily’ part of the question. One might share all the information there is related to a nation’s energy situation on a website or similar, but that alone doesn’t make the information ‘easily accessible’. The experience in the Italian dialogue seems to indicate that rather than only trying to inform people, working together on real problems creates more opportunities of reciprocal information exchange during which it is also easier to explain “difficult” concepts.

7.3 Stakeholder involvement

What role should individuals have in the transition and how do we include CSOs?

Some National Councils have focused much of their attention on the role of individuals in forming a low-carbon society, while others have focused more on energy sources and more technological aspects of the dialogue. In Norway, for example, where politicians rarely talk about or mention the role of individuals or consumers when it comes to achieving climate targets, the Council has been very eager to discuss this issue. In fact, a future consumer revolution was one of the most important issues in the national vision for 2050 that the Council developed.

The question of the role of individuals also relates to how to involve individuals in policy initiatives or the developments of new energy projects. In the EU and other European countries, policy developments and hearings are publicly available, but they rarely attract the attention of non-professional CSOs or individual citizens. Throughout the project, certain countries have found it challenging to involve CSOs in the national dialogues and we've seen that some members of civil society feel alienated from the political processes. The Dutch Council in particular had a difficulty attracting CSOs in the beginning of the project. How to ensure that CSOs are involved in policy initiatives has been a topic for discussion in most Councils, but we've found it difficult to answer this question with a simple measure. The Norwegian Council has suggested making these processes more available to individuals and CSOs through internet-based consultations written in an accessible language. In the Italian dialogue it was easier to involve individuals as members of a community or sub-community; at local level it was also easier to get interaction with CSOs. However, perhaps the biggest barrier to involving citizens and CSOs, is the degree of effort required, which can be too demanding on researchers within the present organisational setting. More structural changes are needed so that with time the interaction with civil society can become embedded in all energy research and implementation projects. How this can be achieved is still an open question.

How can the needs of future generations also be incorporated into the decision-making processes?

Many climate and environment policy initiatives are explained by the need to do something for the sake of future generations. Most of the decision-makers of today will not be around to experience the consequences of climate change. This does not however assure us that the needs of future generations are properly incorporated in today's policy-making. Certain European countries are making policy plans towards 2050 when it comes to the development of future energy systems or low-carbon technologies. These policy plans might create a lock-in situation for future generations which can't be foreseen today. Then again, the changes that society needs in order to prevent catastrophic climate change demand long-term investment cycles and strategies.

8 Keep talking: R&Dialogue after 2015

8.1 Dialogue is crucial to establish a low-carbon society

In the course of the project we have received support from a range of different stakeholders that dialogue between energy experts and civil society is important to establish the energy transition as a social process.

The realisation of its importance is not sufficient to maintain dialogue. In the work of the ten national dialogues, we have experienced how easily the topic of dialogue drops on the priority list if no one is taking the lead in its organisation.

The R&Dialogue country teams have faced various amounts of difficulty in keeping the National Dialogue Councils and the broader stakeholder group engaged. Several of the country teams have experienced that civil society dialogue has been postponed in order to respond to other and more urgent matters. This does not, however, mean that conditions for dialogue are poor in general. When it comes to dialogues that are part of a formal process to influence government or other policy makers, these will be often be higher on the priority list.

8.2 Who is going to do it?

The obvious question is: who is going to dedicate the necessary time and effort to the dialogue after the end of the R&Dialogue project? This question has been discussed in Council meetings as well. The following considerations have come to the fore:

Policy makers and government in general. The National Dialogue Councils agree that national governments have a key role to play in organising dialogue between energy experts and civil society. It is in the interest of policy effectiveness to find spaces in society to engage with energy experts and civil society on appropriateness and feasibility of climate and energy projects and policies. In the ten R&Dialogue countries, it has often been difficult to get the government involved. There are, however, examples to the contrary. This was seen for example in the Netherlands, where results were presented to Parliament. The same goes for Norway. In June 2015, the national R&Dialogue team presented and discussed the project's results with Tine Sundtoft, the Norwegian Environment and Climate Minister.

National Dialogue Councils. A considerable number of people have gotten to know each other in the context of the R&Dialogue Councils. These Councils would thus seem a logical place to keep the dialogue going.

However, without continuous facilitative support from R&Dialogue, this is easier said than done. Several National Dialogue Councils (Portugal, Czech Republic, Spain) plan to remain active in the topic. Other Councils have considered or are still considering this possibility. Still others, like Italy, are looking for opportunities to develop the dialogue through new joint projects. However, many members of the National Dialogue Councils have either in general or specific terms assured that their investment in the project will in any case be incorporated in current or future work of their respective organisations.

R&Dialogue consortium member organisations. The R&Dialogue is a diverse group of organisations ranging from research institutes and consultancies to sector-specific organisations and NGOs. All of these organisations have taken an active interest in continuing the dialogue. For some, the need to continuously check the social feasibility of any innovation is even engrained in its vision and mission statement. A strong example of this is the increased call for knowledge exchange with the public. Another is so-called collaborative enquiry. One good example comes from the UK R&Dialogue team. They plan to work with the Edinburgh Centre for Carbon Innovation and ClimateXchange to run a workshop to introduce the Design Thinking method to national policy stakeholders. The ClimateXchange is part of a so-called collaborative enquiry, where universities and research centres work together to advise the Scottish government on climate change mitigation, adaptation and the transition to a low-carbon economy. The Italian team plans to continue developing the dialogue approach and the relationships established with the Council and the local community through the joint proposal of new projects based on the Italian Vision and Action Plan. In particular, the possibilities of making the local community an outpost for demonstrating innovative technologies based on hydrogen coupled with renewables is being explored.

For many participants in the project, R&Dialogue is an important step in a longer-term process of initiating and maintaining dialogues. Numerous discussions on the way forward were still ongoing at the time of writing.

8.3 And on what level?

All levels of activities to carry on the dialogue seem to be equally important and relevant: European, national and local. The challenges are different, however. Smaller communities within limited geographical areas might be easier to get involved. European-level dialogue, on the other hand, is much more challenging.

European level. The European Commission has made funds and meeting space available for R&Dialogue. The challenge is to broaden the low-carbon dialogue as much as possible, and there are some encouraging signs of this. The recent Energy Union initiative has been

designated as a priority by key decision-makers in Brussels, such as European Council President Donald Tusk and Commission President Jean-Claude Juncker. This has placed the topic of a low-carbon society at the centre of the broader context of energy security, green jobs and preventing climate change. The Commission has said that the Energy Union's governance process should "involve an energy dialogue with stakeholders to inform policy-making and support active engagement in managing the energy transition."[19]

The following areas for dialogue will be interesting in the upcoming years:

Horizon2020. The Science With And For Society programme of the European Commission is specifically dedicated to closing the gap between researchers and civil society. With one-fifth of the whole Horizon2020 budget dedicated to climate change related research, there is potential for a lot of activity on the civil society dialogue in this topic.

The European Economic and Social Committee. The EESC has emerged as a strong partner in R&Dialogue and a champion of the energy dialogue in the next couple of years. Their initiative European Energy Dialogue, led by EESC member Richard Adams, aims to establish energy and climate issues as a topic of daily conversations all over Europe.

E-TRACK: The Energy Transparency Centre of Knowledge of the European Commission's Joint Research Centre was launched at R&Dialogue's Energy Dialogue Event in November 2015 in Brussels. This initiative focuses on civil society participation in energy projects and has taken over as torch bearer in the European context.

National level. In the ten R&Dialogue countries there have been different experiences when ascertaining exactly to which extent the low-carbon dialogue will continue beyond the end of R&Dialogue. What is certain is that most project participants, including the National Dialogue Councils, will continue a myriad of dialogues. Some will use established initiatives (such as Spain's CONAMA conference on the environment) and energy and climate policy networks. Others plan to use the R&Dialogue lessons in various projects.

Local level. Local dialogues have found various ways to get involved in the activities of the National Dialogue Councils. In Italy, the Council has partnered with a local community (Caprarola) to establish a local reality check of their activities. In the Netherlands, several representatives of case studies (e.g. wind projects, local dialogue tables) have made presentations to the National Dialogue Council. In the UK, a group of citizens have taken seat in the National Dialogue Council. They had all been involved in a previous dialogue on climate

[19] http://ec.europa.eu/priorities/energy-union/docs/energyunion_en.pdf, p 18

change, and played an active role in all Council activities. In Greece, the National Dialogue Council was asked to propose energy dialogue themes to the region of West-Macedonia.

It is expected that dialogue initiatives in various countries will use the lessons and experience in R&Dialogue to establish energy projects in dialogue with local civil society. Lessons from R&Dialogue could be also shared with South American initiatives which are linked with Spain in dialogue processes via collaboration with the CONAMA Foundation.

Concerning funding, it seems that public funding of projects holds the most promise to establish and maintain a civil society dialogue. The Horizon2020 programme is an example of this, but many (cross-)national and local funding opportunities are also available. This is not only important to be able to organise dialogues, but also as a way of reassurance that a dialogue is worth the investment in both time and money.

8.4 Involvement of stakeholders

Both Civil Society Organisations and energy experts have shown great enthusiasm in the work of R&Dialogue. It is worth the effort to simply be in the same room with people you rarely talk to and discuss strategy, daily work and common challenges in achieving a low-carbon society. Once the dialogue starts going, it is in many cases easier to find understanding and common ground, which often seems impossible to find in other ways.

Research institutes, public bodies, civil society organisations, and industry associations have been active proponents of R&Dialogue and a basis for its success.

Environmental NGOs, large industrial players, regulators, media, and politicians have been less universally enthusiastic and active in the efforts of the ten low-carbon dialogues of R&Dialogue. In some countries these organisations were very active and interested. In other countries they were hard to reach and difficult to include. These organisations are crucial for the success of any low-carbon dialogue.

The type of dialogue championed by this project does not usually fit the modus operandi of organisations. It involves a certain amount of openness, uncertainty and flexibility that may scare off some participants. This challenge needs to be further tackled in future dialogues.

8.5 Online presence continues

R&Dialogue will remain as an interested network organisation and maintain an online presence via the website rndialogue.eu. This will allow us to quickly organise for opportunities in the low-carbon dialogue and keep delivering the R&Dialogue lessons and experiences.

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Annex 1: Who and what does the R&Dialogue project represent?

The national dialogues, as designed by R&Dialogue project, are aspiring to improve low-carbon dialogue by engaging the various groups of society, represented by a number of bodies. Typical examples are Research Organisations, Civil Society Organisations, governmental bodies, and industry associations. The project can obviously not, however, aspire to include all parts of society.

This project represents the effort of a number of multistakeholder groups in 10 European countries to understand how low-carbon dialogue can improve their work and support their efforts towards a low-carbon society. We believe their story and experience can be useful for many others. We hope this report will provide insights about differences between stakeholders, countries and cultures, about what might be more important for different countries, stakeholder groups, individuals and how all these can find ways to interact and collaborate. We think there is a lot to be learned from this variety of perspectives, topics and problems that people participating to the project expressed.

Despite the variety of organisations and voices, it is clear that there will inevitably be many citizens and groups whose views are not represented at all in the R&Dialogue project. It was, for instance, noted by some of the national teams that mainly people with higher education were targeted. This does in part leave aside citizens with lower education levels who could have direct interest in realisation of particular projects in their neighbourhood. Nevertheless, the experiences gained in the R&Dialogue project is meant to serve as a starting point and inspiration for the future efforts to create an inclusive framework, encompassing the opinions of citizens in all their diversity, and stimulating the participation of those who would like their position to be heard.

Annex 2: More on R&Dialogue theories and methods

Demand Analysis

The Demand Analysis is a clinical psychology approach developed for work on the complexity of conscious and unconscious motivations in social relations as a function of the organisational context. It aims to widen the discourse of people participating in a given social process, be it therapeutic or related to needs of social change, towards greater awareness of the emotional dimensions, which always accompany human relations and the definition of shared objectives. It is based on clinical psychology and psychoanalysis and focuses on the analysis of affective symbolisation and elaboration of meaning. It can help people raise awareness about the relationships they are experiencing and the possible lines of development to transform them. Explicit and rational dimensions are in the Demand Analysis just as important as emotional and unconscious ones. Through the elaboration of the incongruities and paradoxes between these different dimensions, people may achieve new insights or discover new perspectives to overcome bottlenecks or loosen emotional entanglements that often block dialogue.

Emotional Text Analysis

Emotional Text Analysis (ETA), has been developed to help understand the emotional dimensions that characterise a group or a social context, in relation to a given topic, through the analysis of texts produced by the people involved, usually interviews' transcription. It is a useful tool to support reflection on and elaboration of the psychological dynamics on-going in a group but it also provides interesting clues about the wider social context to which the group belongs. This is because it draws on deep collective dimensions and representations which are widely shared. In R&Dialogue, ETA was used to explore the perspectives of consortium partners and of national and European stakeholders on the development of a low-carbon society.

Focusing

"Focusing" is to enter into a special kind of awareness, different from every day awareness, which improves the capacity to confront difficult situations and find creative solutions. It is a process and learnable skill developed by psychotherapist Eugene Gendlin. It involves holding a kind of open, non-judging attention to an internal knowing which is directly experienced but is not yet in words and which is accessible through bodily sensations. Focusing can, among other things, be used to become clear on what one feels or wants, to obtain new insights and to stimulate change. It can be used in any kind of therapeutic situation, but also in creative process, learning, thinking, and decision making.

Nonviolent Communication

Nonviolent Communication (NVC) is a communication process developed by Marshall Rosenberg. NVC theory supposes all human behaviour stems from attempts to meet universal human needs and that these needs are never in conflict. Rather, conflict arises when strategies for meeting needs clash. NVC proposes that if people can identify their needs, the needs of others, and the feelings that surround these needs, harmony can be achieved. Consequently the NVC process focuses on deep listening, empathy and honest self-expression to develop societal relationships based on a restorative, "partnership" paradigm and mutual respect, rather than a retributive, fear-based, "domination" paradigm. Through the practice of NVC, people can learn to clarify what they are observing, what emotions they are feeling, what values they want to live by, and what they want to ask of themselves and others, overcoming the need to use the language of blame, judgment or domination and experiencing the deep pleasure of contributing to each others' well being.

fig. The non-violent communication process

Design Thinking

Design thinking is the approach to solving complex problems that is embedded in the logic and decision-making processes of designers. This places meeting ‘user needs’ at the centre of the solution. In order to tackle problems, interdisciplinary teams progress through six phases: Understand – Observe – Point of View – Ideate – Prototype – Test.

The process starts with identifying the ‘users’ that are implicated in the problem that is being addressed. Participants observe, and empathise with, these users, in order to understand their needs and their point of view. The insights that have been gathered in the first half of the process are then used to generate, prototype, and test ideas for different possible ways to meet these needs.

Dragon Dreaming

Dragon Dreaming is a simple and playful methodology for visioning, planning, implementation and evaluation. It aims to foster creative, collaborative and sustainable projects and organisations. It involves four steps – Dreaming, Planning, Doing and Celebrating – which reflect four different ways of thinking, four different ways of speaking, and four different personality types.

Dragon Dreaming is founded on the rationale that you need all different types of people to create optimum solutions but that this inevitably leads to conflict. Therefore, the process seeks to uncover blockages limiting the effectiveness of groups of people working together to achieve a common task by inviting participants to confront and harness their inner Dragon.

World Café

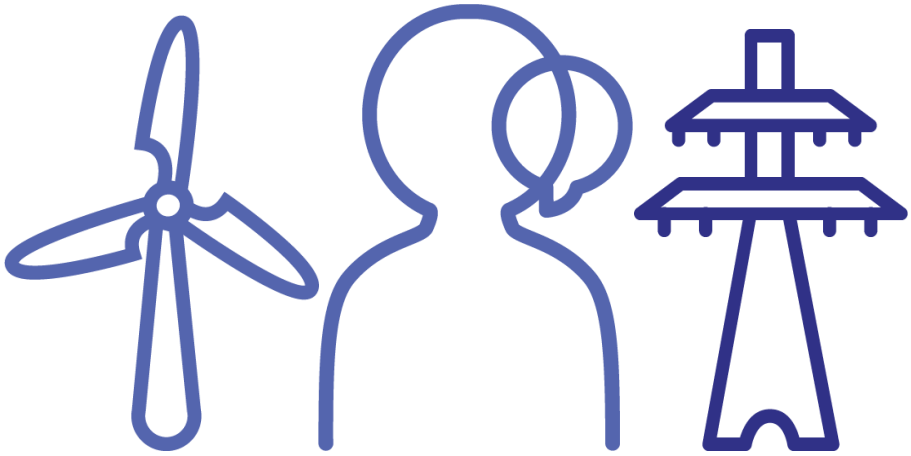
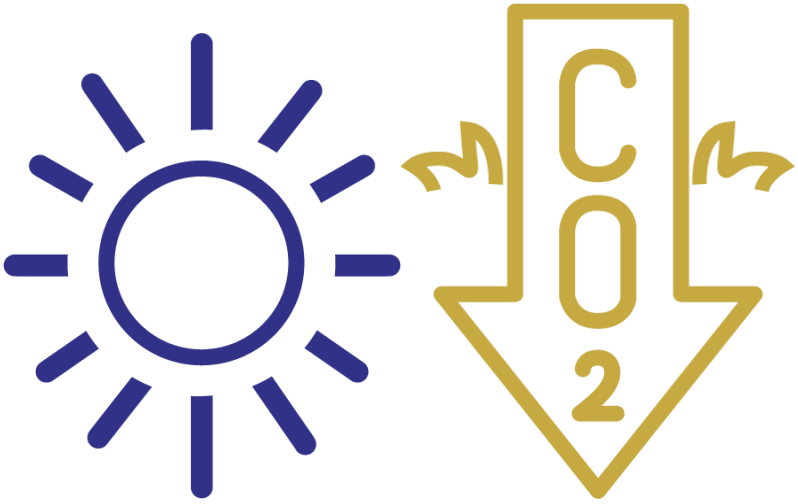
The World Café is a simple and flexible format for hosting large group dialogue which can be used to discover new topics or issues. The setting should be configured in a style similar to a café, with small round tables, to encourage conversation. The participants at each table are invited to discuss a particular question or topic for a set period of time, usually 20-30 minutes. After the time has elapsed, participants switch to a new table and share their perspectives on a different issue, with a different group of people.

The participants are encouraged to draw in points from previous discussions to identify key themes. At the end, the conversations are shared and bigger themes and patterns are discussed with the whole group. The objective of a World Café is to explore and open up issues, rather than problem solve.

Annex 3: R&Dialogue glossary

This report refers to certain documents and uses phrases that are particular to the R&Dialogue project. *National Dialogue Councils,* or *R&Dialogue Councils,* are multi-stakeholder groups that have been formed in ten European countries or regions to have a dialogue on how to develop a vision for a low-carbon society. *Country teams* are formed by the partner organisations of the project in each of the ten countries. These have coordinated the dialogues for their respective countries/regions. *Discussion Papers* are analyses of the current situation for low-carbon dialogue in the ten countries that participate in the project. *Vision Papers* are the National Councils' suggestions for low-carbon visions and action plans for a low-carbon society.

Most of these documents are available at the project's web site, www.rndialogue.eu.

R&Dialogue

Go to www.rndialogue.eu for more European and national reports and low-carbon visions, blogs and photos from the project