# Future national energy mix scenarios: public engagement processes in the EU and elsewhere

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## *Introduction*

*I greatly welcome the insights that this EESC-commissioned research study offers into the need for and methods promoting public involvement and engagement in the energy policy field. It highlights how important it is to build an extensive knowledge base for helping citizens become truly acknowledged stakeholders in the debate on our future energy needs.*

*We are all consumers of energy, and often our first priority is the ever-rising cost of something we cannot do without. But alongside this immediate concern, we also know that we owe it to present and future generations to bring our use of fossil-fuelled energy under control. This is the first challenge which the EU climate change policy is determined to meet. The answers will be difficult – each Member State has different needs and resources, and it is clear that building a consensus on how to achieve an affordable, secure and sustainable energy mix for Europe will be complex.*

*We will require research, innovation, applied technical flair, and massive investment. These are all major challenges, but ones which we are able to meet. However, the biggest challenge is generating political will in a spirit of cooperation and consistency. The decisions about energy faced by governments are too big for the politicians to take on their own. The responsibility for our energy future must be a joint enterprise involving the whole of civil society. The EESC's best contribution is a simple one – we want to start a conversation.*

*That is what public engagement and involvement seeks to do: stimulate an informed discussion, which raises the level of debate and understanding in a framework where policy-makers have pledged to listen. The 'Toolkit' section of this study outlines how this process can begin – by balancing expert knowledge with 'everyday' knowledge. The study not only emphasises how much is already happening in this area, but also indicates how much can be done by sharing knowledge and constructively framing the debate to make it useful to policy-makers. The EESC will continue to take a lead in encouraging a cooperative energy policy which will be all the stronger for being based on a properly structured public debate.*

*Staffan Nilsson*

*President of the European Economic and Social Committee*

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# Executive Summary

Recent climate change research suggests that, over the next few decades, there will be unprecedented global change, consequently affecting European human welfare and environmental systems. European Union (EU) policy already seeks to mitigate change through low-carbon, energy reduction and efficiency policies - but adaptation will clearly be necessary.

Achieving energy transition and adaptation at the pace and scale required will not be straightforward. Creating a low carbon and resource efficient economy will involve major structural changes to the way EU States work and live, including how we source, manage and use our energy. Because these developments will vary in their acceptability to differing sections of the public and for different stakeholders, and will also vary from country to country, we are now faced with collective choices.

In order to better understand the role of public knowledge, views and values about these choices and 'trade-offs', we conducted a Literature Review of recent 'energy futures' stakeholder initiatives, dialogues and public consultation processes in the EU and elsewhere at local, city, regional, national, and pan-national levels. We then selected and condensed five 'better practice' Case Study examples that highlight different ways of involving, and communicating with, the public. Following a 'lessons learned' critical analysis, we make a set of practical Recommendations for the Development of a Dialogue Toolkit and process adaptable for EU member states.

We found that public dialogues on energy futures generally conclude that 'business as usual' will not deliver sufficient change at the rate and scale required to lower climate change emissions - and public, energy sector, and government stakeholders will all need to play their part in transitioning to low-carbon economies. Key to this process is the balancing of expert knowledge and 'every-day' knowledge. By adding this element, an important step is made by distinguishing between what is technically and economically possible to what is feasible and acceptable to stakeholders.

Our review has explored the emergence of extensive and diverse energy futures participation - and we believe that there is a real practical need to channel and focus this diffuse involvement, expertise and capacity. The sheer weight of statutory, citizen, and stakeholder civil society involvement in energy futures dialogues documented in this study evidences the importance of this trend. Review of the academic literature supports this conclusion.

Findings from our Literature Review and Case Studies suggest that involvement-led innovation can be a powerful means for agreeing and/or delivering national, regional, city, and local strategic objectives, at a lower cost to the public purse and with less bureaucracy than traditional processes. Encouragingly, our evaluation clearly shows that, in the right circumstances, civil society stakeholders are more than able to analyse, understand, respond to and act on complex data. However, formal mechanisms for energy futures involvement, and linking that involvement to policy and decision-making structures, are not yet in place within EU states.

Given the scale of long-term investments that are now needed across the options of renewables, energy efficiency and conservation, grid network infrastructure development and load balancing, carbon based fuels and nuclear (together with their associated proposals for carbon sequestration

and nuclear waste management) - it is clear that European publics should play a key role in taking these critical, social, ethical, environmental and economic decisions.

There are a range of strongly EU centred drivers to this dynamic, and more recently, the EC Energy Road Map 2050, has concluded that '*Citizens need to be informed and engaged in the decision-making process'*. If carried out in a truly involving way, the integration of public, policy, and expert knowledge allows for greater accountability, transparency, much better 'take-up' of necessary change and improved long-term likelihood of more flexible adaption.

Because European public values around 'energy futures' are in transition, with significant implications for EU policy, we suggest that national energy mix forums have the potential to play a key role in capacity-building trust in the relationship between, and among, statutory and non-statutory civil society stakeholders and policy actors. Here, inclusive 'bottom-up' involvement may be more able to manage technological change than more 'top-down' decision-making processes.

For complex issues with uncertain futures, it seems that the strategic goal of stakeholder involvement in low-carbon energy transition may not be to find the single 'right technical answer' to the problem - but rather to bring people together, and keep them talking to each other, in order to ensure that better decisions are made in future.

# 1. Public Involvement in EU 'Energy Futures' – why is it important?

Recent climate change research suggests that, over the next few decades, there will be unprecedented global change, consequently affecting European human welfare and environmental systems. European Union (EU) policy already seeks to mitigate change through low-carbon, energy reduction and efficiency policies - but adaptation will clearly be necessary. Achieving this transition and adaptation at the pace and scale required will not be straightforward, and public knowledge, views and values about energy futures choices and 'trade-offs' will play a critical role, with significant implications for EU energy policy.

Creating a low carbon and resource efficient economy will involve major structural changes to the way EU States work and live, including how we source, manage and use our energy - and an ambitious long-term target of 80-95 % reductions in greenhouse gases by 2050 have been set by the EU[1]. In order to start to achieve this, the EU concludes that we need to collectively triple our annual investment in low-carbon technologies over the next decade to EUR 8 billion and make a EUR 20 billion annual investment in energy infrastructure.

The challenge of achieving a transition to sustainable energy will involve different supply and distribution options combined with centralised forms of renewable energy; new European-scale networks for energy distribution; large-scale infrastructures for carbon sequestration; bridging combined heat and power (CHP) gas generation; local scale distributed energy; coal and nuclear fission (with their associated proposals for carbon sequestration and nuclear waste management); significant restructuring of our transmission networks and changes to our transport systems and built. However, these developments will vary in their acceptability to differing sections of the public and for different stakeholders, and will also vary from country to country.

So we are faced with collective choices - and the purpose of energy appraisal is to inform these choices. Long-term decisions across the entire field of industrial strategy depend on the resulting pictures. It is in this way that we justify scientific research programmes, technology development projects, infrastructure investment portfolios and the implementation of entire suites of policy instruments like taxes, standards, regulations and subsidies. Taken across the full range of public and private actors engaged in energy systems, annual commitments of many billions of Euros rest (directly or indirectly) on the framing of energy policy appraisal[2].

Given the size of the long-term investments that are now needed across low carbon 'energy futures' options, it seems both reasonable and necessary that European citizens should play a key role in taking these critical, social, environmental and economic decisions. The EU has recognised in the Lisbon Treaty this capacity-building of knowledge and trust via involvement and dialogue between

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1 EC Communication (2009): IP/09/1431, 07/10/2009.

2 Stirling (2007): Choosing Energy Futures: Framing, Lock-in, and Diversity, In: Dorfman (Ed) Nuclear Consultation: Public Trust in Governance, NCG.

statutory and non-statutory civil society actors at pan-EU, State, Region, and Local levels[3]. And more recently, the EC Energy Road Map 2050[4] concludes that:

*"The current trend, in which nearly every energy technology is disputed and its use or deployment delayed, raises serious problems for investors and puts energy system changes at risk. Energy cannot be supplied without technology and infrastructure. In addition, cleaner energy has a cost. New pricing mechanisms and incentives might be needed but measures should be taken to ensure pricing schemes remain transparent and understandable to final consumers. Citizens need to be informed and engaged in the decision-making process, while technological choices need to take account of the local environment."*

There is a range of strongly EU centred drivers to this dynamic, based on a perceived crisis of legitimacy in 'top-down' decision-making models. As a result, throughout the EU, there are clear policy moves to integrate public and community knowledge into decision-making processes. This shift has seen moves toward a two-way dialogue between specialists and non-specialists as a means of forging a more lasting consensus by increasing social involvement and participation, thereby fostering a sense of community[5].

The underlying social force that underpins this move is the drive for more accountable, transparent, and publicly acceptable decision making, with participatory dialogue no longer seen as an optional 'add-on' to policy making. It is in this context that civil stakeholder involvement provides a way forward to ensure that future policy solutions meet the needs of the public, and that these solutions are socially, culturally and politically acceptable as well as technologically feasible.

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[3] This is underpinned by the Directive on Public Participation in Environmental Plans and Programmes, the EU Public Participation Provisions of the Aarhus Convention, and the EU Directive on Strategic Environmental Assessment. Other public participation related EU legislation includes Directives on Integrated Pollution and Prevention Control and Environment Impact Assessment.

[4] EU, EESC & CR (2011): A Roadmap for moving to a competitive low carbon economy in 2050, Communication from the Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions, COM/2011/0112 final, Brussels.

[5] Dorfman P. et al (2011): Enhancing consultation practices on Air Quality Management in local authorities, Journal of Environmental Planning and Management, 53 (5) pp. 559-571.

## 2.    Deliberative dialogue

### 2.1    What is deliberative dialogue?

Deliberative dialogue is an approach to decision making that allows people to come together to consider information, discuss issues and options and develop their thinking together. Building on dialogue and consensus-building techniques, this kind of engagement provides policy and decision makers with much richer data on stakeholders knowledge, views and values, offers opportunities to more fully explore and express people's thoughts and ideas, and allows the time to develop options and priorities. For participants, the experience helps them collectively develop their views with experts and decision makers. Participants can also take their recommendations forward to inform policy, which can encourage shared responsibility for implementation[6].

Dialogue about complex and controversial issues, such as energy futures, can also enable greater public confidence in eventual policy decisions. This is because dialogue allows a diverse mix of civil society stakeholders with a range of views and values to:

- Learn from written information and experts.
- Listen to each other, share and develop their views in discussion with experts and energy sector researchers.
- Arrive at thought-through collective conclusions, and communicate those conclusions directly to inform decision making.[7]

It is important that dialogue should be face-to-face, in order to give all sides the chance to speak, question and be questioned by others. It should take place far enough ahead of policy being made to be able to have some influence over eventual decisions[8].

### 2.2    Reasons to Involve

Participatory dialogue can act as an adjunct to representative governance, bringing with it greater democratic legitimacy and efficiency of decision-making procedures - the main normative and substantive reasons to involve.

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6 Involve, NCC (2008): Deliberative Public Engagement: Nine Principles, NCC.

7 Sciencewise-ERC, Guiding Principles for Public Dialogue:

http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Publications/Guiding-PrinciplesSciencewise-ERC-Guiding-Principles.pdf

8 Sciencewise: The Government's Approach to Public Dialogue on Science and Technology, UK BIS:
http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Publications/Guiding-PrinciplesSciencewise-ERC-Guiding-Principles.pdf
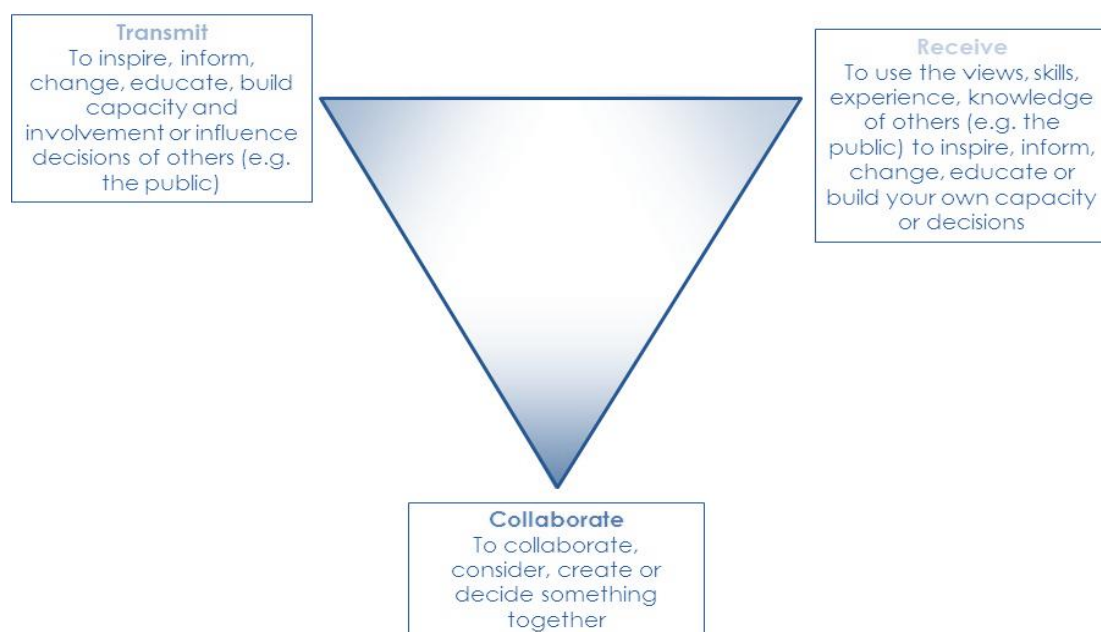
| Better governance | Greater democratic legitimacy for decisions, and increased trust. |
|---|---|
| Social cohesion and social justice | Dialogue empowers citizens and civil society. |
| Improved services and infrastructure | Ensures more efficient services and infrastructure to meet public needs. |
| Capacity building and learning | Creates better understanding of choices and 'tradeoffs', and encourages citizen learning about energy futures. |
| Greater ownership | Facilitates greater public ownership, connection and 'buy-in' for energy transition decisions. |
| Legal and regulatory structures | Dialogue informs new policy and regulation. |

## 2.3    The purpose of involvement

Involvement has three broad purposes: to *transmit*, to *receive*, and to *collaborate*. Although, each one defines a particular type of involvement strategy, in practice they often overlap.

**Figure 1 The involvement triangle**[10]



**Transmit**
To inspire, inform, change, educate, build capacity and involvement or influence decisions of others (e.g. the public)

**Receive**
To use the views, skills, experience, knowledge of others (e.g. the public) to inspire, inform, change, educate or build your own capacity or decisions

**Collaborate**
To collaborate, consider, create or decide something together

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9 Adapted from: Prikken I. Burall S. (2012): Doing Public Dialogue: A support resource for research council staff, Involve: http://www.involve.org.uk/wp-content/uploads/2012/01/120727-RCUK-Resource-FINAL.pdf

10 Colbourne, L. (2010) Science for All Conversational Tool (BIS):
Source: http://interactive.bis.gov.uk/scienceandsociety/site/all/files/2010/10/PE-conversational-tool-Final-251010.pdf

## 2.4    Deliberative dialogue is not…

Whilst elected national governments have the final responsibility to make policy decisions, participatory democracy can play a vital role in bringing a more balanced set of views forward, clarifying and exposing differing framing assumptions, acknowledging differing knowledge sets, better informing policy and decision makers, and offering assurance to decision makers that citizens appreciate and understand complex issues.

Deliberative dialogue is not about one-way communication, or an information gathering technique, or simply supporting or seeking acceptance for preconceived policies[11]. Dialogue is not a means to persuade the public, and should not be used when crucial decisions have already been taken or if there is no realistic possibility that the process will influence decisions: tokenistic deliberation will do more harm than good by reducing the trust of participants and other stakeholders in those taking the decisions[12].

## 2.5    Citizen, stakeholder and civil society participation

It is important for policy actors to realise that there are differences between citizen, stakeholder, and civil society involvement. *Stakeholders* are groups or individuals who have a direct, normally self-identified, stake in the decision or policy under discussion. They are often well informed and come with a preformed view about the issue and the outcome they want. *Civil society organisations* are more organised formal groups, organisations and networks including business networks, faith groups, charities, community groups etc. Civil society organisations are a specific type of stakeholder which policy makers often deliberately seek to engage within more substantive dialogue processes.

While *citizens* will always have a stake in a public-policy decision (and so are in that sense a stakeholder), they may well often not 'self-identify' the relevance of the issue to them. When policy makers talk about citizen or public engagement, they are thinking about how to involve citizens as individuals. However, the way they often try to reach citizens is through local community or civil society groups because this is easier and quicker – or because they have not understood the difference. It is important to note that this is not the same as talking to citizens, as individuals directly. This type of involvement process, though it requires time and resource, particularly to ensure that citizens have the information relevant to the issue, can add an important dimension to an engagement process.

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[11] Sciencewise: The Government's Approach to Public Dialogue on Science and Technology, UK BIS: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Publications/Guiding-PrinciplesSciencewise-ERC-Guiding-Principles.pdf

[12] Prikken I. and Burrall S. (2012): Doing Public Dialogue: A support resource for research council staff, RCUK, Involve, CSaP, Sciencewise.

# 3. Our Research Process – how we did it

We conducted a Literature Review of recent and relevant stakeholder initiatives, dialogues and public consultation processes in the EU and elsewhere that could be applied to future national energy mix scenarios at local, city, regional, national, and pan-national levels.

We then selected and condensed five 'better practice' Case Study examples that highlight different ways of involving, and communicating with, the public. These Cases draw on examples happening at different geographic levels, involving different types of actors and using a range of techniques. They are intended to inform the findings of this report rather than represent an exhaustive exploration, or even representative sample, of what is going on in this very current and developing area.

Rather than following a set of selection criteria, we tried to capture and detail a broad and varied set of 'better practice' involvement processes. This was done to convey the general nature and extent of energy related involvement processes. A few 'better practice' examples on other topics were also included. The review documented sets of emerging forms of 'energy futures' participation at local, city, regional, national, and pan-EU levels.

Following a 'lessons learned' critical analysis, we make a set of practical Recommendations for the Development of a Toolkit and a process adaptable for EU member states to help to support the establishment of a national energy mix forum or dialogue.

# 4. Current Involvement in 'Energy Futures' – what's happening now?

## 4.1 Literature review

The aim of the Literature Review was to identify sets of important engagement processes and initiatives, highlighting key collective themes. The inclusion of more involvement examples from some EU and non-EU countries should be understood as a finding from the review, reflecting current 'state of play' trends. The full Literature Review can be found in APPENDIX 1. In order to clarify the links between the project aims, geographical levels, involvement method and eventual outcomes, we have distilled the learning from our Literature Review into a Table in APPENDIX 2.

## 4.2 Case studies

From the literature review a shortlist of five 'better practice' Case Study examples from across the EU and beyond have been selected. The five Cases were selected in collaboration with the EESC research steering group. Key criteria for selection were geographical location, level of organisation and governance, and range of involvement methods.

The five Case Studies are:

1. Danish Future Energy Systems
2. Engaging Civil Society in low-carbon scenarios
3. Local Climate Change Visioning project: Tools and process for community decision making
4. Energy Cities IMAGINE initiative
5. Public participation approaches in radioactive waste disposal: Implementation of the RISCOM model in Czech Republic

# 1. Danish Future Energy Systems

*Supporting a continuous dialogue about Denmark's energy future by creating a framework for constructive engagement between elected representatives and experts from the energy sector, based on a qualified analysis of the present energy system and the challenges ahead.*

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|---|---|
| **Location:** | Denmark |
| **Level:** | National |
| **Initiator:** | Danish Board of Technology |
| **Methods:** | Future Panel |
| **Duration:** | 2004-2007 |

## Overview

The conditions of the Danish energy sector have changed due to liberalisation, international climate conventions and increased oil prices. As a consequence, differing stakeholders expressed the need for a dialogue between Danish Parliamentary politicians and the energy sector. The Danish Board of Technology (DBT) ran with this request and began a project on future options for Danish energy systems for 2025.

Before this Future Energy Systems project, DBT had already initiated two other energy projects: *'Energy as Growth Area'* and *'When the Cheap Oil Runs Out'*. The findings of these projects indicated a demand for more long-term oriented dialogues on future energy scenarios, focusing on technology development and the balance between a secure supply, the environment and economy.

The Future Energy Systems project began in spring 2004 when DBT invited representatives of the energy sector, researchers, NGOs, the Danish government and the Danish parliament to participate in examining possible paths for the development of the Danish energy system.

A key feature of the process was the *'Future Panel'*, consisting of members from the Danish parliament. The DBT, assisted by a steering group of key experts, organised four public hearings for the Future Panel. These public hearings contributed to building common experience and knowledge between stakeholders. The project was concluded at a conference in the Danish parliament in autumn 2007.

**The Danish Board of Technology**

The Danish Board of Technology (DBT) was set up by the Danish parliament to disseminate knowledge about technology, including the potential impact of technology innovation on society and on the environment. The DBT conceives its central mission as promoting debate and public

enlightenment. The Board promotes this ongoing discussion in order to evaluate technology and to advise the Danish Parliament and other governmental bodies[13].

## Purpose

The purpose of the *Danish Future Energy Systems* project was to create a debate, contribute to decision-making processes and support ongoing dialogue between key stakeholders. The main aim was to ensure that dialogue was based on a solid knowledge base of the present energy system and analysis of future challenges and opportunities.

The project aimed to engage politicians over a long time-frame (2-3 years) through a *Future Panel*. Whereas, usually, policy makers do not get involved until the final results are presented for comment or sign off - here, political engagement was more intensive and 'hands on'.

## Process

The project moved through a number of phases, starting with the identification of future challenges for the Danish energy system, then goal-setting for 2025, through to the development of scenarios, and finally debating their strengths and weaknesses.

**Steering group**

In 2004 the Danish Board of Technology invited 10 representatives from major civil society actors in the Danish energy sector to participate in an investigation of possible ways forward for the Danish energy system in 2025. These 10 representatives were energy sector experts and stakeholders, researchers and representatives of NGOs. They formed the project steering group.

**Future Panel**

The overall project was built around a dialogue with the Future Panel, composed of members from the Danish Parliament. It was a short-term committee with 20 participants, subject to fixed-term appointment, representing all political parties. This panel was supported by the steering group and working groups. Additional support was provided by a task-force group and a secretariat supplied by the DBT.

**Public hearings**

Central to the project were public hearings. In these hearings the Future Panel of politicians and experts discussed scenarios and scope for action for specific issues. During the course of the project four of these public hearings were held in the Danish Parliament. The hearings, which were led by politicians from the panel, were open to the public. Energy sector experts contributed knowledge and ideas. The hearings focused on goals and challenges facing the energy sector, and how these could be met.

The first hearing concerned future challenges, the subsequent two were about possible measures to be taken by production and consumption sectors, and the last hearing involved the presentation of a

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[13] In May 2012, the Danish Board of Technology was abolished, and reconstituted as The Danish Board of Technology Foundation in June 2012.

combination scenario – a possible Danish energy future scenario, where a number of the mechanisms discussed were combined.

## Scenarios

The project used scenario-building techniques to explore the future energy system in Denmark. The scenarios developed differing options and combinations of options. Two key targets informed the scenarios:

- To reduce the use of oil in 2025 by 50% compared to the 2003 base-line.
- To reduce the emissions of $CO^2$ in 2025 by 50% compared to the 1990 base-line.

The focus was on technology-based scenarios and described what kind of technological energy mix could be used to achieve these main targets. In all, the task force group prepared four technology scenarios, each exploring a different energy system designed to meet the targets. Each had a priority area: energy saving, biomass, gas, and wind. The scenarios were tested for their robustness, for example with varying oil prices. Also, a fifth reference scenario was developed in order to assess the consequences of development and change in these priority areas. The reference scenario represented a likely development of the energy system in 2025, taking into account potential market prices. It took its point of departure as the present energy system framework and technology[14].

The politicians were also concerned about a robust future energy supply; ensuring that Denmark is independent of oil producing countries. They were also aware of the growing industrial potential of the energy field in the near future.

There was a common wish from the politicians involved, as well as steering group stakeholders, to work with 'realistic' ideas. The politicians asked for concrete scenarios, which were easy to communicate and suitable for further investigation.

## Combination scenario

Following a seminar with the Future Panel, it was decided to develop a combination scenario. The politicians wanted to see an energy system focusing on energy saving, the application of wind power, and independence from large-scale import of natural gas and biomass. It was hoped that this combined scenario would achieve the main project objectives through a combination of energy sector innovation.

## Model tool

A model tool, STREAM, was developed in order to quantify the scenarios and help carry out the analyses. STREAM supported dialogue by providing quick insight into potential energy mixes. The tool allowed for the creation of relatively simple models, accessible to all stakeholders. The tool also allowed for 'on the spot' analyses. This turned out to be useful during meetings in supporting the discussions. The trade-off made was that STREAM did not show the results with the precision that

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[14] This reference point presupposes a continued active effort in the context of energy savings and energy efficiency improvement. It is assumed that there will be a prolongation of energy savings effort, as laid out in the Government's 2005 action plan (cf. the Danish Energy Agency 2005: Technological Forecasting, Including a Strengthened Energy Savings Effort, Resulting from the Agreement of 10. June 2005).

more detailed models with a longer computation time span are capable of. Although speed was essential to the project, in order to test the models' robustness in certain areas, the results were subsequently verified using deeper analytical tools.

Modelling parameters were based on a 'bottom-up' approach. This meant that the participants defined the input to the models - for instance, percentage of wind power in the electricity sector or percentage of bio-ethanol in the transport sector - and on this basis an output was calculated. The model was developed to look at the complete energy flow rather than focus on certain parts of the energy system. The model did not perform an economic optimisation specifying exactly which set of measures were the most advantageous to combine under the given conditions.

**Policy instruments**

In the time up to the completion of the project in September 2007, the primary focus was on the development of future energy system policy instruments through the involvement of a broad group of interested stakeholders.

## Who was involved?

A broad range of individuals representing the biggest or most important players in the energy sector, researchers, NGOs, and the Danish parliament, were invited to participate in the steering group, whose remit was to investigate possible avenues for the development of the Danish energy system. The Future Panel consisted mostly of politicians, involved with policy around energy, environment, business, development, and transport issues.

Both the steering group and the Future Panel participated actively in determining the direction of the project, as well as the contents of the various phases. Via public hearings, meetings, and seminars, there was continuous interaction between the steering group and the Future Panel. This interaction allowed for direct influence on the development of goals, the selection of options available for action in the four scenarios, and development of the final combination scenario. Other actors and interested parties from the energy sector were included throughout the project, for example in the hearings.

## Impact

Since the project had ambitious goals, there were also attendant risks. One of the challenges was to keep the many actors involved interested and on-track. That they succeeded was because there was a strong desire among the participants for an open and broad dialogue. There was a shared understanding of the need for energy system change and better communication and dialogue about this complex topic.

The interdisciplinary character of the project contributed to the success of the project. The set-up of the project allowed the participants to build useful links with each other. The politicians particularly appreciated the opportunity to meet energy sector actors in an atmosphere of trust and dialogue. This was far removed from their usual experience of being lobbied by stakeholders with particular agendas. This process provided a 'safe' space for discussion and knowledge-building, but also for disagreement and the exploration of new directions. Overall, there seemed to be a shared objective between all the different stakeholders to search for common ground.

The concrete scenario work and the new energy modelling tool were central to the project. Underlying the success of the modelling was the collaboration between four important experts in the field of energy planning and energy modelling.

The project has produced four technology scenarios focusing on energy reduction, natural gas, wind power and biomass and a newly developed modelling tool to test those scenarios. The project's 2050 scenario showed that through the combination scenario it was possible to reduce Danish $CO_2$ emissions in 2025 by 50% compared to 1990, and to reduce oil consumption by 50% compared to 2003.

The project scenario outputs have been used in negotiations within the Danish Parliament on a new energy strategy for Denmark. The project has also input into a 2008 Danish energy policy accord.

The conclusions of the report have been forwarded to the EU commission by the Danish parliament council on energy policy and have contributed to the EU Commission's 'Green Book' hearing.

## Lessons learned

- For a dialogue between experts and politicians to be successful, there needs to be two-way communication. During the course of the process it is important to have frequent dialogue with all participants.
- Scenarios and energy modelling must be robust, but be made simple and easy to understand. They also need a flexible interface. The tool used in this process was able to conduct 'on the spot' analyses, which was useful at meetings.
- In general, there is a growing understanding among politicians and actors in the energy sector about the need for debate about long-term energy needs, political guidance about future directions, and for long-term energy planning. This project demonstrated that policy and decision makers benefit from dialogue with other stakeholders in the energy sector.

## Next steps

After concluding the Danish future energy systems project, the DBT conducted a *'Future energy systems in Europe in 2030'* review for the Scientific and Technological Options Assessment (STOA) unit of the European Parliament. This work was based on the scenarios used in the Danish project, and asked the question: how can EU goals on the environment and improved security of energy supply be fulfilled?

A number of energy scenarios for the 27 EU member states were developed. The focus of the scenario-building procedure was on the overall energy system; showing how the different elements of the European energy systems interact with each other, and how different combinations of technology choices and policies lead to different overall results. The project explored two essentially different developments of the European energy systems through a 'Small-tech scenario' and a 'Big-tech scenario' approach. Both scenarios aimed to achieve two concrete goals for 2030: reducing $CO_2$ emissions by 50% compared to the 1990 level, and reducing oil consumption by 50% compared to the present level.

By using a pan-European scenario modelling tool, the scenario work examined how EU goals for improved security of supply and reductions in greenhouse gas emissions could be fulfilled in an

economically efficient way. The project also provided a common understanding of the challenges, barriers and opportunities for the energy sector among EU policy and industrial stakeholders.

The final report describes the scenario work for EU 27 on the overall energy system, showing how different elements in the European energy systems interact with each other and how different combinations of technology choices and policies lead to different overall results.

The different characteristics, opportunities and priorities of the energy sector in different parts of Europe have been integrated in the energy scenarios for 5 archetypes of EU countries. These regional scenarios represent different conditions in existing energy sector and different opportunities to meet the objectives.

## Further reading

EA Energy Analyses www.ea-energianalyse.dk/projects-english/638_the_future_danish_energy_system.html

European Parliamentary Technology Assessment www.eptanetwork.org/projects.php?pid=96

Larsen, G. (2007) The Future Danish Energy System Technology Scenarios, The Danish Board of Technology http://www.tekno.dk/pdf/projekter/STOA-Energy/p07_The_Future_Danish_Energy_System.pdf

Larsen, G. (2009) Future energy systems in Europe study http://www.tekno.dk/pdf/projekter/STOA-Energy/p10_stoa2008-01_en.pdf

Presentation of Future Energy Systems A project carried out by The Danish Board of Technology 2004-2007 - Gy Larsen, project manager (2008).

STREAM – an energy scenario modelling tool www.streammodel.org

# 2. Engaging Civil Society in low-carbon scenarios

*Development of low-carbon scenarios for Germany and France based on stakeholders' input through an interactive scenario creation process.*

| | |
|---|---|
| **Location**: | Germany and France |
| **Level**: | National |
| **Initiator**: | This is a European project run by Germanwatch, Potsdam Institute for Climate Impact Research (PIK), Climate Action Network France (RAC-France), International Research Center on Environment and Development (CIRED), International Network for Sustainable Energy - Europe (INFORSE-Europe). It was financed by the 7th Framework Program for research of the European Commission |
| **Methods**: | Scenario building, stakeholder workshops, creation of a European Network on Low Carbon Scenarios |
| **Duration**: | April 2009 - March 2012 |

## Overview

The ENCI-Lowcarb Project (Engaging Civil Society in Low-Carbon scenarios) ran from April 2009 to March 2012 and was carried out through a collaborative partnership of NGOs and Research Institutes. The project set out to develop an easy-to-replicate method for engaging civil society via national climate policy scenarios.

An iterative process of scenario building, quantitative modelling, and stakeholder review was simultaneously carried out in France and Germany. These scenarios were based on a set of policy measures thought necessary for a transition to a low-carbon economy. Energy sector stakeholders such as associations, trade unions, and businesses played a central role in the development and review process. Stakeholder involvement contributed to greater understanding of specific policy measures and technology decisions that may be needed to reach ambitious carbon emission reduction objectives.

The project also developed an international network of researchers and NGOs. These networks were used for the dissemination of the research results and laid the ground for future collaboration.

## Purpose

The core of the project was the development of a method to transparently integrate stakeholder contributions into modelled energy scenarios. The assumption was that this would contribute to better models and enhance stakeholder understanding of the resulting low carbon pathways. It would also allow for distinguishing between what is technically and economically possible, with what is feasible and acceptable to stakeholders.

Scenarios can be influential tools in political decision-making processes as they give insight into the long-term impacts of investment decisions. They can be used to outline possible low-carbon futures built around assumptions on fossil fuels prices evolution, technological choices and the mechanisms of energy demand and supply.

Discussions with key national stakeholders are crucial in the creation of these pathways. The project sought to explain how the qualitative stakeholder contributions were integrated within quantitative modelling. Rather than focusing on the resulting scenarios, this project aimed to understand and clarify this 'translation process'.

## Process

A wide range of stakeholders (civil society organisations including trade unions and non-governmental organisations, private companies, banks, state and local authorities) participated in the project. They were asked to define or select acceptable $CO_2$ emissions mitigation measures. Their contributions were implemented through energy economic models in order to create scenarios that were economically and technically consistent as well as acceptable to stakeholders.

The process involved the following steps: team building, expert workshops, selection of stakeholders, first round of stakeholder dialogue meetings, quantitative modelling of stakeholder input, and a secondary review round of stakeholder dialogue meetings.

**Preparation**

Significant work was put into getting the collaboration between researchers and NGOs 'right'. This was important as in both countries the project was carried out by multi-disciplinary research teams. These included scientists with expertise in energy-economy modelling, social scientists who could evaluate the social acceptance of the scenarios, and a civil society partner who could help negotiate between the scientists and other civil society organisations.

To establish a well-functioning team with partners from different disciplines, significant attention was given to a team-building process at the start of the project. In the German case, a 'wish list' method was deployed, where the quantitative modeller received a list of stakeholder wishes for low-carbon energy sector futures. This process gave each partner a good insight into how other partners perceived their discipline, allowed for the development of a common language and allowed for more realistic understanding of what the quantitative model could offer.

After intra-group development, external experts were invited to contribute to the development of the model and the technological framework conditions. This was done through expert workshops with sector experts from transport, residential and power supply sectors. Their task was to refine the national quantitative models and bring them to a stage suitable for stakeholder dialogue. This process was driven by the overarching question: 'What is technically possible in the future?' The expert workshops provided the national teams with the opportunity to engage in group discussion with experts - thereby gathering technical knowledge. At the end of this stage, the model was finalised, along with detailed documents designed to be accessible to the non-expert reader.

The next step in the process was the identification and selection of the national stakeholders. The stakeholder mapping methodology included two main parameters for each stakeholder: influence in the sector, and interest in the transition.

**The stakeholder dialogues**

Two rounds of stakeholder dialogue meetings were held. Stakeholders were invited to sector-specific meetings (transport, residential, electricity, etc.). Each meeting included 12 to 15 stakeholders. During these meetings, stakeholders were invited to express their visions of the evolution of technology choices, policy measures, and economic incentives that would be necessary and acceptable to reduce $CO_2$ emissions. The energy scenarios were based on this discussion and on stakeholders' questionnaire responses.

In the first round, information was collected at the meetings and then translated into the model's relevant parameters. As a result, the scenarios were amended. In the second round, the revised scenarios were presented to the stakeholders, including a description of how the feedback from the first round had been included in the new scenarios. Then the feasibility and possible social and political effects of the new scenarios were discussed. Once again, the stakeholder inputs were integrated into the model.

In this way, information gathered within the sector-specific stakeholder meetings were translated by the project team into model parameters. Where there were points of disagreement, new scenarios variants were developed to inform further debate.

**The models**

The REMIND-D model was used as a decision-support tool for the German scenario-building process. This modelling tool maximises welfare and enforces $CO_2$ emission reductions with an emission budget over the optimisation period. For the French scenarios the Imaclim-R model was used. This is a dynamic, hybrid model that simulates economic impact of changes on both macroeconomic and microeconomic levels.

**Differences between Germany and France**

The German and French project were largely run in parallel, with the slight difference that in France more sectors were involved, and they ran a joint cross-sector session at the end. In terms of the outcomes, there were remarkable differences. Using 1990 emission levels as base-line, the German scenario predicted a higher level of emission reduction (-85%) compared to France (-68%). The reason for the differences was partly due to the framing of the processes. In Germany the reduction target was fixed to -85%. In France, emissions targets weren't fixed, and flowed from decisions made about differing policy measures and technologies. There were also differences in how stakeholders in each country debated the scenarios. In France they only commented on the acceptability of measures whilst in Germany they also reflected on the likeliness and desirability of technology development.

## Who was involved?

The stakeholders involved included trade unions, energy companies, environmental NGOs, consumer NGOs, industries and banks. The stakeholder identification process used a 'power versus interests' Grid. The NGO partners played an active role in the identification of relevant stakeholders.

The deliberate choice of stakeholders with contrasting views led to dynamic discussions in the meetings. It also meant that it wasn't always possible to reach consensus.

Part of the project was dedicated to the creation of a Low Carbon Societies network. This was intended to create wider possibilities for cooperation between researchers and civil society organisations.

## Impact

The project achieved the development of a network, two partnerships and the evolution of a set of low-carbon scenarios in Germany and France. This was first and foremost a research project, not linked to any formal decision-making processes. The international character of the project allowed for lots of opportunities to exchange knowledge and experience on the project level and beyond.

The impact of the project was mostly on better understanding process through opening up discussion between researchers, NGOs, and energy sector experts. In particular the 'wish list' method was useful in bridging the gap between scientists and NGOs. Also, the multidisciplinary approach introduced the key element of 'social acceptance' which allowed for the development of more realistic modelled scenarios.

## Lessons learned

- The iterative process and the 'set-up' of the meetings were considered effective by all participants. It was important to end the project with a workshop designed to communicate the scenarios to policy makers, stakeholders and the wider public.
- The kind of model used will impact on the extent to which stakeholders can engage and this in turn will impact on what can be achieved. In any case, sufficient time should be allocated to explain the functioning of the modelling tools to all the participants.
- It was helpful to differentiate between technological and political frameworks. This supported co-working between experts (who defined the technological conditions), and CSO representatives (who defined the social and political context).
- To account for the fact that collaboration partners come from significantly different and potentially conflicting professional backgrounds, the emphasis on intra-group development was important. Certain barriers needed to be overcome before the multi-disciplinary stakeholders could benefit from mutual learning and understanding. It is therefore important to plan in time for this.
- The project aimed to develop socially acceptable scenarios, which meant it was necessary to find a compromise in relation to different stakeholder opinions. One important lesson is that the range of stakeholders invited automatically limits the range of opinions possible. Therefore it is important to be aware of stakeholder and process design bias.

- The most useful element of the project was the translation process, which first ensured the incorporation of stakeholder narratives and stories into a quantitative model, and then allowed for further secondary review of the modelled outputs.
- For future projects to have legitimacy beyond a European research project, and for them to have an impact on decision-making processes, it would be beneficial to have government officials involved.

## Next Steps

The research project has finished, however the Low Carbon Societies Network will continue to be open to NGOs and researchers wishing to exchange information about scenarios, strategies and stakeholder involvement.

## Further reading

ENCI Low Carb Facebook Group http://www.facebook.com/ENCI.LowCarb

Engaging civil society in low carbon scenarios http://www.enci-lowcarb.eu/

Low Carbon Societies Network http://www.lowcarbon-societies.eu/

Low Carbon Societies Network Newsletter, March 2012.

Olesen,G., Fink, M, et al (2012) Engaging Civil Society and Stakeholders in Low-carbon Scenarios, Synthesis report of the ENCI-LowCarb Project.

Schmid,E., Knopf, B., La Branche, S. and Fink, M. (2012) Social Acceptance in Quantitative Low Carbon Societies.

# 3. Local Climate Change Visioning project: Tools and process for community decision making

*Linking global science to locally significant places with visioning processes and visualisations represents a powerful tool for decision making in the context of climate change responses.*

| | |
|---|---|
| **Location:** | Canada |
| **Level:** | Neighbourhood and community level |
| **Initiator:** | GEOIDE, Collaborative for Advanced Landscape Planning (CALP) |
| **Methods:** | Quantitative modelling, visioning techniques (Geo-visualisation and GIS), local stakeholder involvement, community engagement, evaluation tools |
| **Duration:** | 3 years (April 2009 – March 2012) |

## Overview

Local climate change 'visioning' aims to integrate climate science with local planning. This is achieved through participatory input to 'virtual reality' techniques based on digital mapping and scientific data. The process aims to build awareness and understanding in local communities, foster change and inform decision making.

The visioning project built scenarios through participation with the local community, decision makers, scientists and planners. They collectively explored climate change impacts and developed policy responses in their local area. Using 3D visualization techniques and Geographic Information Systems (GIS) mapping, the project examined projected climate change impacts on local communities. This project illustrates that addressing these issues in a participatory way, with easily accessible visuals, and at a scale that matters to people, may be critically important in building capacity for collective action concerning climate change, and hence, energy futures.

Although this project focused on the assessment of the relative benefits of different adaptation and mitigation options, the techniques used are easily transferred to policy areas such as energy futures where similar option assessments need to be made. Using these techniques can bridge the gap between analytical models and 'lived experience'. Also, it can give a useful and realistic view of the costs of mitigation for current generations and the benefits for future generations by offering glimpses of possible future scenarios.

## Purpose

The Local Climate Change Visioning Project tested how sustainable futures modelling can raise the communities' capacity for enhanced dialogue, analysis, and decision making and enable them to better articulate and evaluate the relative benefits of mitigation or adaptation options at local and

regional scales. The project drew upon past experience with sustainable futures modelling and participatory processes (SII), which demonstrated that realistic landscape visualisation of alternative local climate change futures can improve community engagement and awareness of environmental and planning issues.

The Local Climate Change Visioning project explored new ways to make climate change explicit to local communities. Through using emergent visualisation tools and associated future visioning processes, the process attempted to move beyond awareness-building in order to accelerate local policy implementation and attempt to proactively address climate change adaption.

Through spatial modelling, the project aimed to describe the potential impacts of climate change in the landscapes where people live and work, and evolve adaptation and mitigation options. At the same time it tried to translate global climate data to regional and local scales. This information was communicated using 3D imagery of recognisable places in the local area in order to involve and inform participants on the realities of climate change in their community. These visualisation tools translate complex climate change information in an understandable manner for local policy makers and the public. This supports learning and understanding. It is an opportunity to find local solutions and incorporate local knowledge into policy development. Also, it can test the social impacts of (and barriers to) alternative policies on climate change, e.g. opposition to windfarms or adaptation strategies. Furthermore it can help build awareness and a constituency for policy change needed to accelerate climate change adaption. The desired outcome is moving communities forward towards low carbon, resilient communities in the face of climate change. The approach was tested in four pilot areas across Canada:

- Greater Vancouver communities experience of sea-level rise, snowpack reduction, and rising green house gasses.
- The Upper Bow River watershed in Alberta, including Calgary, who face glacier retreat, urban/agricultural water supply reductions, and rapid growth.
- The City of Toronto's worsening heat island effect and urban greening strategies needed to confront increasing urban intensification.
- The Arctic community of Clyde River who confront serious sea-ice, coastal erosion, and permafrost impacts.

## Process

Climate change visioning is an iterative process that moves through three main phases:

*Phase one* involves participatory scenario building, where global climate change scenarios are scaled down to the local level. The scenarios are developed within a participatory process that considers local trends, and provides a structured way to ask 'what if' questions exploring risks, options, and possible outcomes.

Participation is essential and can take many forms, such as meetings (with Council/Board, Council staff, stakeholders, experts), charettes, workshops, visual materials review, open houses, or other community engagement processes. A possible conceptual framework for scenario building involves using the structure of 'four climate worlds', i.e. World 1 – 'Do nothing', World 2 – 'Adapt to risk', World 3 – 'Efficient development', World 4 – 'Deep sustainability'.

In *Phase two* data is gathered and integrated within models and landscape visualisations, 2D, 3D and 4D (across time) graphics and images, maps or photos. In Phase two, the critical outcome is stakeholder/local review of the scenarios, data and preliminary visualisations. A review workshop, or set of review meetings, is also important to the overall process. In it, a group of stakeholders and community representatives will review the data for accuracy, ensure that the issues are represented fairly, identify what issues or data may be missing, and provide feedback on whether the visualizations are legible and appropriate.

In the Vancouver (British Columbia) example, the evaluation was conducted with 19 members of the public, including some local council members. The study team tested the influence of their presentation on people's perceptions across four broad areas: 1) affect (emotional response to climate change and perception of the risk), 2) cognition (understanding of the climate change phenomenon, including impacts and local response options), 3) world views and attitudes, and 4) the effectiveness of the various tools used in the sessions (such as visualizations, maps, and graphs).

*Phase three* involves the production of a full visioning package that is presented to stakeholders and the community. The package includes the visualisations supported by an underlying set of participatory processes, scenario building, and data and modelling. It would include scenario narratives, the background data sources, and the context for the visualisations.

Participatory process outcomes may be considered within the policy-making process. Ideally, both the visioning process and its outcome will be evaluated.

## Who was involved?

A wide range of stakeholders were involved in the project, including: local communities, municipal staff, politicians and citizens. They were engaged throughout the process; from the development of the images in conjunction with staff and policy makers within the municipality, to the revision of the images with the help of local experts and stakeholders, and the testing of these images with a public audience.

## Impact

*Increasing awareness and relevance of climate change info in the community*: there was an increased awareness about climate change impact and its relevance locally.

*Increasing levels of concern about the impacts of climate change*: the extensive use of realistic visualisations and visioning processes were found to be credible and helpful. This kept levels of participation high among the public participants over a long and intense visioning session. Despite a fairly high prior knowledge of global climate change issues, many respondents' concern about climate change impact significantly increased. Some respondents noted that having information locally contextualised and visualised in alternative futures made the climate change information 'hit home'.

*High levels of participation as a result of the imagery*: comparing participants from visualisation and non-visualisation groups revealed that visualisation group participants were more engaged than their non-visualisation counterparts. The imagery also inspired more immediate and positive action.

*Feeding into decision making*: this deliberative process forged communicative partnerships between politicians, municipal staff and scientists, thereby overcoming barriers to municipal climate change action. Additional benefits included the participatory nature of the process, which provided staff and councillors with useful information on public attitudes toward climate change action locally.

*Change in attitudes and behaviour*: the visioning material increased stated motivations for behaviour change and altered community participants' attitudes. There was a significant increase in the number of respondents who personally planned to 'do something' about their $CO_2$ footprint.

*Media interest in the visual products*: the project generated public and political interest in climate change in Canada.

## Lessons learned

- Evidence from local visioning exercises suggests that the participatory nature of the visioning process helped build a sense of local ownership over climate actions and created wider public support.
- The visioning process allowed for the testing of climate change adaptation or mitigation strategies, and the exploration of popular (and unpopular) policy alternatives - with the aim of increasing public understanding and even policy review prior to implementation.
- Caution is needed with interpreting the results from the participatory processes when there is just a small sample size of respondents. In the Vancouver case, for example, the sample had a strong bias toward individuals who were already concerned about climate change. There is a need to test this visioning process with larger heterogeneous groups of participants in order to better assess its effectiveness.
- It is challenging to create imagery that combines quantitative and qualitative model-based impact projections which then can be linked to policy decisions. However, the process has the potential to broaden and deepen dialogue, and can raise previously overlooked important issues.

## Next steps

Ongoing research to document any long-term impacts of the visualisation products on climate change at the local level.

Development of new local climate change visioning initiatives, such as the Future Delta 2.0 climate change video game as a serious engagement process for youth, parents and policy makers on energy and adaptation, and a project on Engagement on Community Energy using visual tools underway with three communities in British Colombia.

The development of the manual and training modules suggests there is scope to roll out the project to other areas in Canada, and perhaps beyond. It provides a useful framework that, provided there is sufficient data available for developing scenarios and visualisations, can be adapted to other geographical areas.

## Further Reading

CALP (July 2010) Local climate change visioning and landscape visualizations guidance manual, University of British Columbia http://www.calp.forestry.ubc.ca/wp-content/uploads/2010/02/CALP-Visioning-Guidance-Manual-Version-1.1.pdf

Downscaling and visioning of mountain snow packs and other climate change implications in North Vancouver, British Columbia Published online: 21 July 2011

Project flyer http://www.calp.forestry.ubc.ca/wp-content/uploads/2010/04/Pilot-Phase-IV-Project-032-info.pdf

S. Burch, A. Shaw, S. Sheppard and D.Flanders (2009) Climate Change Visualization: Using 3D Imagery of Local Places to Build Capacity and Inform Policy http://www.ep.liu.se/ecp/045/009/ecp094509.pdf

Technical Report on Local Climate Change Visioning for Delta: Findings and Recommendations Report prepared for the Corporation of Delta February 22, 2010 Version 1.0 http://www.calp.forestry.ubc.ca/wp-content/uploads/2010/02/Delta-Technical-Report_V1-0.pdf

Training materials http://www.delta-adaptation-bc.ca/training-modules/

# 4. Energy Cities IMAGINE initiative

*A framework to help cities and towns take the lead on energy issues and to integrate sustainable energy policies in their urban development processes, with stakeholder and citizen involvement.*

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|---|---|
| **Location**: | Europe |
| **Level**: | Pan European, Local Authorities |
| **Initiator**: | Energy Cities; a European association of local authorities concerned with energy futures representing more than 1,000 towns and cities in 30 countries |
| **Methods**: | Exchange platform, think-tank, resource centre |
| **Duration**: | 2006 – ongoing |

## Overview

*'IMAGINE the energy future of our cities'* is a long-term initiative of Energy Cities[15] that started in 2006. It is based on the idea that there is a need to imagine a future energy model that is compatible with planetary boundaries.

This movement recognises the need to reinvent our cities. It aims at encouraging European cities and towns to prepare for future climate change through mitigation, adaption and responsible energy consumption.

The *IMAGINE* initiative was set up to provide a foresight platform for collaboration and exchange, aimed at building low-energy and high-quality life in cities. This approach is based on the idea that to achieve sustainable low carbon cities, a fluid exchange and involvement of all stakeholders is needed.

## Purpose

The purpose of *IMAGINE* is to build 'visionary plans' for the long term sustainable development of cities for a low energy climate resilient future. To this end, the *IMAGINE* initiative brought together a wide range of actors that (directly or indirectly) influence energy consumption and supply at the city level.

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[15] Energy Cities is a European association of local authorities concerned with energy futures. It has a Board of Directors from 11 European cities. The network represents more than 1,000 towns and cities in 30 countries, mainly municipalities, but also inter-municipal structures, local energy management agencies, municipal companies and groups of municipalities. Close to 200 local authorities are individual members of Energy Cities, forming a network that extends over 26 European countries. The network has recently published 30 Energy Cities' proposals for the energy transition of cities and towns, a contribution to Rio + 20. Energy Cities' goal is to strengthen the role and skills of local authorities in the field of sustainable energy, to represent their interests and influence the policies and proposals made by European Union institutions in the fields of energy, environmental protection and urban policy, and, to develop and promote their initiatives through exchange of experiences, the transfer of know-how and the implementation of joint projects.

An increasing number of cities have committed to achieving the European objectives for reducing $CO_2$ emissions by 2050, notably through the Covenant of Mayors[16]. However, there are significant challenges cities have to overcome in reaching these goals. These include the difficulties around imagining, evaluating and accepting the extent of the changes needed; and the limitations of current institutional and commercial frameworks in encouraging transition towards these changes.

*IMAGINE* aims to help overcome such obstacles through inviting stakeholders to engage and to be inspired by each other's initiatives, to discuss common challenges and differing points of view and find synergies between their activities.

## Process

*IMAGINEs* activities are directed towards local governments, entrepreneurs, energy agencies and citizen groups to give them the opportunity to 'think beyond usual constraints, and finding new solutions to current challenges'.

Throughout the course of the initiative, several European cities have developed visionary action plans to address energy and climate challenges. In general, these plans share a common goal: to become less dependent on fossil fuels and achieve a more sustainable rate of resource use and development. These plans included a wide range of strategies and objectives to enable transition towards carbon neutral energy futures.

The approach helped the participants to understand the scope of the necessary changes and the importance of taking action now. *IMAGINE* identified several cities that have developed a plan or statement to address energy and climate issues in the next 20 to 50 years. Each city and community has its own unique economic, social and political characteristics, so there was no single approach. These initiatives included:

- London Borough of Sutton, United Kingdom: One Planet Sutton;
- Helsinki, Finland: Greater Helsinki Vision 2050;
- Kinsale, Ireland: Kinsale 2021: An Energy Descent Action Plan;
- Portland and Multnomah County, Oregon, USA: Portland 2009 Climate Action Plan;
- Amsterdam, the Netherlands: A Different Energy Strategy for 2040;
- Glasgow, United Kingdom: Glasgow's Sustainable Initiative;
- Göteborg, Sweden:  Göteborg 2050: Visions of a Sustainable Society ;
- Leicester, United Kingdom: One Leicester: A 25 Years Journey;
- Munich, Germany: Munich Perspective: Shaping the Future 10; and
- Stockholm, Sweden: Vision Stockholm 2030: A World-Class City.

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[16] The Covenant of Mayors is the mainstream European movement involving local and regional authorities, voluntarily committing to increasing energy efficiency and use of renewable energy sources on their territories. By their commitment, Covenant signatories aim to meet and exceed the European Union 20% $CO_2$ reduction objective by 2020.

In order to better describe the IMAGINE process, we set out two examples in greater detail.

**Amsterdam: A Different Energy Strategy for 2040**

*'Vision 2040'* was an innovative approach to regional governance and scenario development. The initiative was part of the Urban Matrix project, funded by the European Union Sixth Framework Programme for Research and Technological Development.

The 2040 vision focused on several aspects of Amsterdam's urban redevelopment. The focus was on adaptation to climate change, creating a compact city strategy, improving public transport networks, and developing a metropolitan landscape. In terms of energy, the city focused on both demand-side management energy efficiency measures and supply-side renewable energy provision.

Goals identified for the year 2040 included a 75% reduction in $CO^2$ emissions compared to 1990 levels and an expansion of the city's heating network to supply more than 200,000 new households. Further goals involved the expansion of 'fit for purpose' public transport and goods delivery planning.

*'Vision 2040'* is an official planning instrument composed of a spatial strategy, an implementation plan and an environmental impact report to strengthen the decision-making process. A draft Vision was prepared by the Physical Planning Department of Amsterdam and was subject to extensive stakeholder consultation, including public and private sector partners and the general public. In 2007, the city council started approaching a large number of companies, communities and organisations to enhance cooperation and co-working. The results of the *'Vision 2040'* project were summarised in a series of key maps and reports, supplemented by images that clearly show the proposed areas of intervention and illustrate an 'imagined future' in Amsterdam.

**Greater Helsinki Vision 2050**

In 2006, the municipalities of the Greater Helsinki region, in cooperation with the Ministry of the Environment and the Finnish Association of Architects, launched an '*Open Ideas Competition'* with the objective of creating a joint, regional future vision concerning land use, housing and transport for 2050.

Competitors were expected to create and present their own scenario and vision for the region in the year 2050. The main challenge for the competitors was to present visionary solutions which will provide approximately 70 million square meters of new energy efficient housing stock in Greater Helsinki by 2050. Although the winning vision was not implemented, a competition advisory board assembled a composite strategic plan based on the best entries.

A follow-up project was launched in 2008 to analyse the proposals, evaluate the prize-winning ideas, collect the opinions of the public and recommend how to proceed with the vision- implementation process. This project combined the vision of town planning professionals and the general public for the future of the metropolitan area. The project consisted of several workshops for politicians and citizens, plus press interviews, articles, and public participation in the form of online discussion spaces. All the prize-winning teams were invited to take part in a two-day workshop in Helsinki in

August 2008, together with local and national government representatives. During this process, ideas from the competition winning entries were used as material for the workshops, supplemented by open Internet discussions. 'Visioning' material and the ideas with most potential were compiled into a final report, which acted as a basis for the continuation of the process.

An important aim of this project was to bring together viewpoints from decision makers, experts and citizens about the future of the region, and to enhance commitment and engagement towards the implementation of the vision. To this end the results were presented to the public and decision makers. Channels for feedback and participation were offered via web pages, public workshops and seminars for experts. Regional and local decision makers refined the collective vision for Greater Helsinki in 2050. In November 2009 the Greater Helsinki Vision was approved.

## Who was involved?

Stakeholders involved in the *IMAGINE* project included: technological and industrial actors; those from the energy and service industry; consumers; local communities, politicians and trade unions; the academic, cultural and media sectors.

## Impact

The *Borough of Sutton* in the United Kingdom, and Portland in the USA are examples of the *'urbanisation effect'* of energy and climate change governance in cities. Sutton and Portland pioneered the forming of urban responses to energy and climate change challenges through 'governance experiments' involving broad participation of stakeholders. Both authorities attempted 'governing through enabling', with local government playing a central role in coordinating and facilitating partnerships with private actors and encouraging community engagement.

*Kinsale* in Ireland is part of the wider Transition Towns Movement (also known as the Transition Network or Transition Movement). Here, local communities were encouraged to participate in the formulation of actions and projects to reduce energy usage and build resilience against future energy and climate change challenges.

The Transition concept is a type of governance that is based on community empowerment, participation and self-reliance. A crucial principle that differentiates Transition Towns from other community-focused sustainability initiatives (such as Local Agenda 21 strategies), is that the Transition model is initiated and driven by the community itself, rather than by central or local government agencies.

The case of *Helsinki* exemplifies a form of 'regional governance', where municipalities and city councils of the Greater Helsinki Region worked together to help resolve common problems. This regional governance helped insure good coordination of planning and provision of public policies for a wide range of policy areas such as land use, energy, transportation, housing, economic and social development.

**The Transition movement**

The Transition network's aim is to 'inspire, encourage, connect, support and train communities as they self-organise around the transition model, creating initiatives that rebuild resilience and reduce $CO_2$ emissions'. The Transition model evolved in the UK and has now spread across more than a thousand highly diverse communities across the world - from towns in Australia to neighbourhoods in Portugal, from cities in Brazil to rural communities in Slovenia, to islands off the coast of Canada.

The Transition movement is a 'bottom up' approach towards a lower energy future, based on the idea that people can make the quickest and greatest impact in their own local community. The processes usually begin with a small group of citizens coming together with a shared concern about peak oil, climate change and economic downturn. This small initiating group starts learning more about the [Transition Model](#), adapting it to their own local circumstances in order to engage a significant proportion of the people in their community. They then start to raise awareness, connect with existing groups, including local government, and hold focused events. These groups can then start-up practical projects including low-carbon energy initiatives. They draw other people in through this work. Often, as the initiative becomes more experienced, they engage in a community-wide visioning process, and this can lead to the creation of formal Energy Descent Plans.

The Italian town of Monteviglio is an example of a successful collaboration between local government and the community in transitioning to a low-carbon energy future. In Monteveglio, the local authority signed a strategic partnership with the local transition network ('Monteveglio Città di Transizione') and has implemented an Energy Descent Plan. The authorities and the transition movement have a shared view of the issues, i.e. concern about depletion of energy resources, the limits to economic development, and the need for 'bottom-up' community participation.

In this context, the transition model seems to present a real alternative to urban communities hit by economic downturn, and also in rural areas where the effects of climate change are more visible and directly impact on agrarian livelihoods.

## Lessons learned

*IMAGINE* comprised a multidisciplinary and multi-actor platform, which attempted to create, share and discuss future-oriented approaches to urban sustainability. The platform did not conceived energy as a sectoral problem, but as an integral part of local and regional development, with an impact on employment, sustainable growth, competitiveness, quality of life, health and safety.

*IMAGINE* brought together a wide range of actors who had influence on energy consumption and supply at the local and urban level, attempting to unite a number of partners from the public, private and community sectors around *Energy Cities*.

Diverse forms of collaborative working and sharing of responsibilities have emerged, marking a shift from sectoral governance to more distributed governance, with initiatives taking place across governmental, public, private and voluntary sectors.

However, challenges remain:

- Implementation costs of the low-carbon actions plans can be considerable – and often local government and communities may not yet have the capacity to provide support for the projects and actions envisioned.

- Since 'joined-up' governance built on participatory involvement is still evolving, appropriate governing structures that can deal with interdisciplinary action on multiple levels are few and far between.

- Even though de-centralisation is often said to be key to implementing such action plans, there appears to be a mismatch with the actual decision making power of local governments and communities.

## Next steps

The *IMAGINE* process enables sets of seminars and workshops where stakeholders from across Europe meet and exchange ideas[17]. This process has contributed to creating a network of key actors from very different backgrounds who are working towards low-carbon energy transition. In 2011, *IMAGINE* launched an online Resource Centre, to provide a virtual space for an ongoing dialogue between stakeholders.

Currently, *IMAGINE* are supporting local authorities to develop *Local Energy Roadmaps*. Eight pilot cities are involved in this project: Bistrita (Romania), Dobrich (Bulgaria), Figueres (Spain), Lille (France), Milton-Keynes (the United Kingdom), Modena (Italy), Munich (German), Odense (Denmark).

## Further reading

Challenges for the city: a local imagine process: http://doc2.energy-cities.eu/greenstone/collect/imagine/index/assoc/HASH31c2.dir/ImagineToolboxChallengesEn.pdf

Covenant of Mayors: http://www.eumayors.eu/index_en.html

Dupas, S., Ramos, I. (2010) Governance & vision Visions of cities towards a low-energy future: http://www.imagineyourenergyfuture.eu/blog/index.php/2011/02/02/92-publication-visions-of-cities-towards-a-low-energy-future

Energy Cities website: http://www.energycities.eu/spip.php?page=imagine_index_en

Exercises, tools and methods: A local IMAGINE process: http://doc2.energy-cities.eu/greenstone/collect/imagine/index/assoc/HASH0122.dir/ImagineToolboxMethodesEn.pdf

Imagine low energy cities website: http://www.imaginelowenergycities.eu/

IMAGINE memorandum: http://www.energycities.eu/IMG/pdf/IMAGINE_Memorandum__En_.pdf

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[17] The IMAGINE think-tank memorandum sets out aims to facilitate 'transition towards low-energy cities with a high quality of life for all'.

# 5. Public participation approaches in radioactive waste disposal: Implementation of the RISCOM model in Czech Republic

*Creating a 'safe space' for stakeholders to discuss complex radioactive waste management strategies.*

| | |
|---|---|
| **Location**: | Czech Republic |
| **Level**: | National |
| **Initiator**: | ARGONA (European Commission programme) |
| | Coordinated by Karita Research |
| **Methods**: | Stakeholder reference group, working group and public hearing |
| **Duration**: | January 2008 - July 2009 |

## Overview

The RISCOM (risk communication) model was designed to support transparent decision making in complex, long term and hazardous projects, such as intermediate nuclear waste management. This case study looks at how the model was applied in the Czech Republic, where it aimed to increase awareness around local siting plans for centrally prescribed proposed geological deep repositories for radioactive waste. The Czech Republic was one of the participating countries in ARGONA (Arenas for Risk Governance)[18].

## Purpose

The key purpose of the process was to raise awareness and facilitate active involvement of the general public and key stakeholders, in informing and improving the decision-making process. The RISCOM model attempted to enhance transparency in decision-making mechanisms about complex and controversial processes. The project aimed to ensure that public and statutory decision makers were more able to validate claims of truth, legitimacy and authenticity. The model attempted to clarify and structure a debate that often takes place on different levels. For example, in selecting any proposed site for nuclear waste management, the scientific-technological work at the ground level (e.g. geological and hydro-geological investigation, inter-generational human health and environmental risk assessment) takes place within a broader framework for managing the

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[18] ARGONA was a project within the sixth Euratom research and training Framework Programme (FP6) on nuclear energy of the European Commission. The ARGONA project investigated how approaches to transparency and deliberation relate to each other and also how they relate to the political system in which decisions may be taken. A central part of this project involved testing and applying the RISCOM model within decision-making processes in the participating countries.

programme at the national level. The model aimed to better order the process - since claims of truth, legitimacy and authenticity are made at each level of debate. In practical terms, this means that issues were formulated in terms of the following questions:

- Is what we're doing based on solid facts? (truth).
- Is the process fair? (legitimacy).
- What are the agendas of the actors involved? (authenticity).

## The RISCOM model[19]

In the case of the Czech Republic, the principal aim of the model application was to increase general public and statutory awareness about issues surrounding the siting of any proposed nuclear waste repositories. This was done in order to facilitate better conditions for transparency and involvement of the general public within any subsequent decision-making process. Attention was also paid to providing the general public with the possibility to inspect the project activities and the results obtained.

### Process

In the Czech Republic, Atomic Act legislation confirms that it is the state that is ultimately responsible for the safe management of radioactive waste. In this context, the Czech Republic established a Radioactive Waste Repository Authority (RAWRA) in 1997. The long-term policy of the state views the construction of a deep geological repository as a preferred final solution for radioactive waste burial. However, decisions on further development are open to further revisions through newer evaluation of radioactive waste management options.

In compliance with the state strategy, two sites were planned to be selected by 2015 during the ARGONA Project and included in area development plans. Six proposed sites were identified following initial surveys carried out between 1988 and 2002. In all sites, there was a strong local public opposition to plans for deep radioactive waste repositories in these locations, including initial exploration. Because of this, all activities were postponed in 2004 until 2009. Since the moratorium has ended, RAWRA have attempted to placate and acquire the acquiescence of local communities for potential radioactive waste repositories. According to an amendment of the Atomic Act, municipalities will receive financial incentives if geological surveys proceed.

In striving to maintain good relationships with local populations of the areas around potential sites, RAWRA's communication efforts attempted to focus on dialogue with local representatives and on providing information to local people through public meetings, leaflets, and study trips to nuclear facilities.

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[19] Source: http://www.karita.se/our_approach/riscom_model.php

In this context, the RISCOM process consisted of two main steps.

**The preparatory phase**

A first step was to establish a *Reference Group* (RG) formed of representatives of relevant stakeholder groups, who then signed a formal agreement between them. A *Working Group* (WG) was formed, consisting of experts who supported the reference group. In this phase the RG discussed the activities it would undertake and set principles for their collaboration. Activities during this preparatory phase were aimed at creating a *'safe space'*. The purpose of the safe space was to promote discussion and increased understanding of the existing issues and the involved parties' respective views. The focus here was on clarifying issues rather than rushing decisions and creating enhanced understanding and awareness – ideally through discussion in which all stakeholders are on equal terms and free from outside agendas.

In the Czech case, main stakeholders in the nuclear waste management process participated in the establishment of the group. Once the members of the Reference Group were selected, the group agreed on a Cooperation Agreement which acted as the basis for their activities. The group was entitled to take responsibility in areas such as communication, establishing information channels and finding ways to increase the transparency and participation of the general public within any future decision making.

**The learning phase**

In the learning phase, activities were aimed at building knowledge and involving the public to help reach informed positions. After the RG and WG were established, the focus shifted from agreeing the principles for discussion to putting them into action. Some internal knowledge building activities were developed as well as plans for programmes for public involvement.

Hearings with *'stretching'* were the core events in the process. Here, 'stretching' involves challenging stakeholders' arguments from different angles to clarify claims to truth, legitimacy and authenticity. This applies to all stakeholders, not just statutory stakeholders, and challenging questions should be raised from different perspectives.

An ideal application of the model would have involved organising events at various levels of structured dialogue, including sets of interactive workshops, round table discussions with political representatives and relevant state institutions, and public hearings in the localities and at the national level.

In practice, in the Czech case, the RG initiated a public hearing around the possible resumption of geological surveys in localities provisionally identified for the proposed geological repository. The main objective of this hearing was to explore questions concerning the selection of a location with the participation of representatives of stakeholder groups, including members of the public from the proposed localities.

The main topics discussed:

- The option of a proposed repository and whether the process of site selection could be implemented more fairly.

- The present situation, time schedules and local impacts of any proposed repository.

- The legitimate concerns and expectations of the representatives of the localities.

More than 70 people participated in the event held in May 2009. Questions around the protection of rights of the affected communities, timings, concerns and expectations of the representatives of the localities were explored. The meeting was held in a neutral space located outside the six localities. The panel consisted of both protagonists and antagonists. The hearing was moderated by a well-known media personality, currently working in state television and broadcasting. It seems that the choice of this moderator was intended to draw in a wider public. All participants agreed on the necessity for a comprehensive nuclear waste management strategy.

## Who was involved?

The main stakeholders in the Czech nuclear waste management process participated in the establishment of the group, including the nuclear waste management implementer RAWRA, government bodies, representatives from potential siting communities and NGOs, and external expert support. All main NGOs were invited to participate in the Reference Group, and they decided to nominate one collective representative. All mayors of the communities of the six proposed localities were invited to participate in the Reference Group. They nominated and elected three representatives to defend their interests in the Group.

## Impact

The Czech partners seemed to view the meeting as a positive step towards improved dialogue. Establishing the Reference Group implied a shift in the involvement of stakeholders in the management of nuclear waste in the Czech Republic. Outcomes indicate that the public hearing was successful and may mark the beginning of improved understanding among stakeholders.

The process clearly emphasised the need for a *'safe space'* where controversial issues can be discussed. The stakeholders had the opportunity to discuss issues and maintain their independence, rather than following a set agenda or a having to reach a forced consensus.

It also opened up dialogue on issues relating to proposals for geological repository on a national level, whereas before this only happened on the local level. The process clarified the differences and distance between the national and local level, as well as the knowledge, views and values that underpin these distinctions.

Although participants, including NGO's and representatives of communities, agreed on the necessity of a strategic implementation process on national nuclear waste management, there was strong opposition by the representatives of the communities' and environmental NGOs to focusing the discussion on simple choices between local sites. It would be too simplistic to explain this opposition as being NIMBY ('Not In My Back Yard'), since community representatives provided coherent arguments around their concerns for any proposed nuclear disposal repository siting. It should be

noted that there also remained significant differences in opinion between localities and between individuals within localities. After the public meeting, it was clear that dialogue concerning proposed geological repository siting for nuclear waste involved a complex range of aspects - key to these are differing views on the inter-generational health and environmental safety criterion. Related social and economic aspects were also highlighted. It is hoped that these apparent differences may provide space for further dialogue and negotiation.

Relatively high levels of distrust in policy and governance emerged throughout the meeting. The former unwillingness of political and government representatives to discuss certain issues had led some participants to abandon discussion altogether, and this had resulted in 'locked' positions. Some participants were still at this stage when attending the hearing. The selection of a moderator and of a Reference Group was seen as a step forward to address these issues. Continued efforts to make decisions more open and transparent through public participation were seen as necessary for trust building. Even though the ARGONA project has formally ended, the discussions within the established Reference Group went on with the consensus that the working format should continue.

Although the process benefited from the inclusion of an NGO representative, and other community stakeholders - it seems clear that NGO and local representatives felt that they were not accepted as equal negotiation partners and they required effective input into the decision-making process. The process also showed that it is not sufficient to just have a dialogue on a local level between RAWRA and individual municipalities. There is a clear need to get other officials, statutory and non-statutory stakeholders involved, and to extend the dialogue into the national nuclear waste management arena.

Bringing in independent experts that could independently assess the site selection process was felt to be useful in discussing these issues with statutory stakeholders.

## Lessons learned

The process has identified a need for a clearly defined long-term and inclusive involvement process that continues to explore the sets of 'environmental justice' issues and concerns surrounding the future management of high and intermediate level nuclear waste in Czech Republic. The development of better-defined strategies for nuclear waste management may need to progress 'hand in hand' with public participation strategies (through public hearings and other forms of dialogue) and stakeholder dialogue.

A few conditions were recognised as important to this type of process:

- The process marked a starting point for a two-way communication between the state and potential 'host' communities. However, the impact of dialogue on the decision-making process seems relatively insignificant so far. This may change if legislation sufficiently ensures the public's involvement and rights in the various phases of any plans for proposed repository implementation.
- There should be clear provision of full information to affected communities about plans for any proposed nuclear waste burial in their area.

- An important outcome of this process was the recognition that citizens (especially potentially affected communities) need to be treated as equal partners and have real influence in the decision-making process.
- Selection of RG and WG members needs to done in an open, even-handed and transparent way, with all views equally represented through balanced numbers of participants with differing perspectives.
- Involvement of independent experts (chosen by NGOs and local communities) from the host country (and/or abroad) helps unpack complex scientific-technical issues and builds trust.
- It is important to recognise that the outputs and findings from this involvement process should be set in the context of sets of constraints. For example, the Czech case only deployed limited aspects of the RISCOM model, since the project only organised one public hearing, where ideally there would have been a series of on-going public hearings held according to a structure agreed on by Reference Group participants.
- The RG drew its legitimacy from being part of the European ARGONA project, but there remained a question about how this legitimacy can be secured outside the project. The overall sense was that the establishment of a similar reference group is required for the management of radioactive waste and spent nuclear fuel. The needs and possibilities of institutionalising the RG and WG were discussed, yet there were different views about what the formal aims of the groups then should be. Some wanted its main aim to be the involvement of the general public and initiating broad dialogue between all stakeholders on the national nuclear waste management strategy, rather than the specific option of local geological disposal siting. Whether linked to an EU programme or not, the RG and WG would benefit from having some level of institutionalisation (or authorisation) in order to secure greater legitimacy.
- Overall, the RISCOM model seems a suitable tool for dialogue among stakeholders in the area of nuclear waste management. However, it is important to keep in mind the context in which this is taking place. Contemporary social trends may be in favour of participation, local practice will decide what can be introduced, but public involvement in issues around proposed nuclear repositories has only emerged in the last few decades in a very few countries. The absence of a participatory democratic tradition in 'younger' EU states, such as the Czech Republic, together with the negative experiences from the first siting proposals in 2003, are challenges to the development of transparency and improving trust in the participation process. At the same time, there seems to be scope for making a real difference in this context. A more active civil society and (younger) generation of active citizens presents opportunities for a different relation between the state and citizens.

Also, it is important to bear in mind that in the field of nuclear waste management, there will not be one standardised final solution that works in every cultural setting. It may be that 'better practice' is, to a great extent, locally defined.

## Next steps

The activities initiated during the ARGONA project are continued in the IPPA project (Implementing Public Participation Approaches in Radioactive Waste Disposal)[20], set within the Seventh Euratom Research and Training Framework Programme (FP7). In the Czech Republic, the Nuclear Research Institute (NRI) along with RAWRA has continued these activities in connection with further testing and application of the RISCOM model.

A refreshed new Working Group was established in 2010 and involves many of those previously involved in the ARGONA project. The group comprises representatives of the government, the parliament, the implementer and the regulator, experts, representatives from NGOs and community based organisations (CBOs), and the six potential host sites (altogether 28 members).

The objectives of the new group are to propose methods or ways to effectively and permanently ensure transparency and active public participation in the decision-making process of proposed nuclear waste siting. In this context, the group aims to recommend possible changes or amendment to formal legal instruments, strengthening and enshrining citizens' rights. Additionally, it was agreed that the group could submit proposals and recommendations on behalf of other affected municipalities or citizens' associations who are not direct members of the group.

RAWRA and the working group have evolved a programme for informing and involving the public. Although the terms for site selection are being revised (tentatively postponed to 2018) this suggested timescale still seems rather tight. Given RAWRA have confirmed that they will not act without the approval of municipalities, this places greater emphasis on the role of local statutory stakeholders within any future dialogue process.

Future efforts may benefit from improving dialogue about complex technical issues, which could help the stakeholders and the public to better understand the issues and enable them to weigh risks and any fiscal benefits.

## Further reading

Andersson K et al (2012): Linking ARGONA results about participation and transparency to practical implementation, IPPA Deliverable 6.1. http://www.ippaproject.eu/sites/default/files/deliverables/IPPA%206.1%20Report.pdf

Argona project website http://www.argonaproject.eu

IPPA project website http://www.ippaproject.eu

Karita Research website http://www.karita.se/

Öko-Institute (2012) Short report about the results of the questionnaire on the participatory process for a radioactive waste repository for high-level waste (HLW) in the Czech Republic.

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[20] IPPA is a project under the European Atomic Energy Community's Seventh Framework Programme FP7/2007-2011. The project is closely linked to the activities carried out within the previous EU Project ARGONA. The core aim of the IPPA project is the establishment of arenas where all stakeholders can join together to increase their understanding of the issues involved in radioactive waste disposal and of their respective views.

http://www.ippaproject.eu/sites/default/files/deliverables/IPPA_Deliverable-5-1-3-Oeko-Institut_ReportCzechRepublic.pdf

Vojtechova, Hana. (2009) ARGONA Arenas for Risk Governance (Contract Number: FP6-036413) Evaluation, testing and application of participatory approaches in the Czech Republic Application of the RISCOM model in the Czech Republic.

# 5.    'Lessons learned' analysis – emerging themes

In order to focus and 'drill down' through the information and findings from our energy futures involvement Literature Review and Case Studies, we set out key themes that have emerged.

## 5.1    Trust-building is key to dialogue

Energy sector, regulatory, policy and decision making, environmental NGO and local community-based organisation (CBO) stakeholders need to be able to maintain trust in dialogue processes. Perhaps unsurprisingly, we find that mutual trust-building and constructive cooperation among stakeholders can help overcome conflicts of interests. Evidence from our review suggests that trust and co-operation is a function of a set of pre-conditions.

**Table 2** Pre-conditions for trust and co-operation

| |
|---|
| Straightforward and ongoing open negotiation between all those involved. |
| Good mechanisms for transparency and accountability. |
| Clarity about purpose, objectives and scope. |
| Inclusion of the diverse stakeholders. |
| Mutual respect for differing views and knowledge. |
| Good communication between participants. |
| Independent expertise. |
| Appropriate oversight and evaluation. |
| Accurate and balanced information and knowledge sharing. |
| Genuine open discussion. |

It is also clear that trust, respect and openness can be enabled through involving stakeholders in 'safe negotiation spaces', where they feel they can openly speak their minds.

## 5.2    Integrated involvement enables integrated energy futures

Since transition to low carbon energy futures demand changes in the lifestyles of the public, it cannot only be enabled by central governance. Given the difficulty of resolving a system problem at a single level, the majority of the processes we reviewed did not conceive energy futures as a sectoral problem, but rather as an integral part of local, regional and national development - with an impact on employment, sustainable growth, competitiveness, quality of life, health and safety. Therefore many of the 'better practice' projects we highlight have focused on integrated involvement.

Here, we found that dialogue processes helped build 'joined-up' thinking - identifying opportunities for energy sector innovation at political, administrative, economic, social and environmental levels. In this way, these 'better practice' participation practices allowed more scope for meaningful influence at local, regional and central governance levels. This means that integrated involvement strategies better connect central representative democratic mechanisms to more direct forms of participation at the 'grass-roots'.

## 5.3    Involvement methods and tools

Literature Review and Case Study examples have used a very broad range of involvement methods, including: stakeholder dialogues, public meetings, citizens' panels, events, forums, workshops, 'kitchen round-tables', 'test-beds', mentoring, 'visioning', peer exchange, interactive web-sites, and external communication through press and media.

Central to these involvement methods were practical decision support dialogue tools, and a number of projects applied them very well through framing boundaries, exploring scenarios, quantitative modelling, and evaluation and review. We found that decision support tools worked well, especially in exploring 'what if' questions and resulting 'trade-off' options, risks and outcomes. Some specific tools emerged as key, including: Scenario building and modelling, participatory multi criteria analysis (PCMA), virtual reality techniques (including 3D visualization and geographic information systems [GIS] mapping), life cycle analysis (LCA) and quantitative environmental assessment.

Of these decision-support tools, the most commonly used was scenario-building. Here, project findings suggest that complex energy and climate change information can be successfully applied and understood through use of coherent scenarios. This is because scenarios shed light on the long-term impacts of energy pathways decisions, especially infrastructure change. In some cases, scenario development comprised two stages: an exploratory stage with stakeholder engagement and then a modelling stage with forecasting-type scenarios. In this way, the scenarios consisted of a narrative storyline followed by a modelled quantitative part. The central position of stakeholders in scenario-building allowed the integration of the degree of acceptance and 'trade-off' for specific energy policy choices, measures or technology decisions. Here, scenarios proved to be an accessible and interactive means to enable people to understand the scale of the challenge, explore and test their own preferred solutions, and translate these into practice. It's also interesting to note that the EC Energy Roadmap 2050 has also used scenario-building as a way to better inform and involve people.

The participatory multi criteria analysis (PMCA) tool was employed in a number of examples in trying to balance and account for both quantitative data and social values. PMCA was also used to test technical options and choices, and the social acceptance of change and adaption strategies. We found that although PMCA is resource intense, it encourages learning, and allows for the acknowledgement of uncertainties, and multiple legitimate perspectives. However, care should be taken in 'weighting' options, as this can impact significantly on eventual outcomes.

In terms of digital innovation, virtual reality techniques helped people visualize alternative energy transition and climate adaption, mitigation scenarios and the potential consequences of those responses.

## 5.4    Stakeholders and the public can work with complex data

Whilst independent expert involvement is a key part of an even-handed process, all of the dialogues we have reviewed have drawn on differing sets of stakeholder knowledge, experience and values. Our findings suggest that working with, and integrating, diverse streams of information from multiple sources, sectors and disciplines forges better dialogues and results in more practical outcomes. By adding this element, an important step was made by distinguishing between what is technically and economically possible to what is feasible and acceptable to stakeholders. Encouragingly, our evaluation clearly shows that, in the right circumstances, civil society stakeholders are more than able to analyse, understand, respond and act on complex data.

## 5.5    'Better practice' involvement mobilises people

Recognising that low carbon transition is controversial, and any decisions need to inspire public confidence, our review suggests that catalysing change is stronger and works better when it is based on the building of appropriate networks and partnerships between stakeholders. Here, 'better practice' involvement seems more able to mobilise 'communities of geography' and 'communities of interest', building networks (of networks) and partnerships.  And it is clear that all the involvement processes we have highlighted have succeeded in doing so.

Correspondingly, we found that a very broad range of statutory and non-statutory stakeholders and civil society organisations have been enabled to actively engage in energy futures dialogue, including: policymakers, government departments, devolved administrations, local government and local authorities, energy regulators, transmission system operators, industrial corporations and businesses, trade associations, non-governmental organisations (NGOs), local community based organisations (CBOs), independent energy sector experts, and academic institutions.

## 5.6    But there are challenges to involvement

The review has also highlighted several challenges: it is not always a simple task to encourage citizens and the industry to participate co-operatively, and it can be complicated to combine several different tools for decision making into a single coherent process. Tensions have also arisen over a number of other issues, including: the framing of boundary conditions for dialogues, whether all main stakeholders were included in discussion, the acceptance of all stakeholders as equal contributors, levels of planning options offered, and over perceived openness to serious policy influence.

Given that dialogue should happen over a reasonably extended time frame, an important cause of lack of local acceptance in at least one project we reviewed was the absence of a coherent and timely 'upstream' and on-going involvement strategy. Although participation of civil society is considered crucial for the implementation of ambitious involvement strategies, a few implementation programs and activities have not yet consistently involved all main stakeholders - focusing more on the business, industrial and research sectors.

## 5.7 So can involvement enable low carbon transition?

We have reviewed a set of dialogues and involvement processes concerning complex long-term energy futures. We find that dialogue outcomes generally conclude that 'business as usual' energy policy will not deliver sufficient change at the rate and scale required to lower climate change emissions - and public, energy sector, and government stakeholders will all need to play their part in transitioning to low-carbon economies.

The Literature Review and Case Studies highlight a significant set of practical, concrete outcomes that have informed policy and decision-making processes. However, our findings underscore the principle that effective engagement should be agnostic about outcomes - that engagement should be measured by the success of the engagement process, rather than complete agreement between stakeholders. Here, 'better practice' involvement and dialogue is a function of trust-building, and the extent to which the process integrates the knowledge, experiences and ideas of people in their country, region, city, town, or community. Given the need to be sensitive to social, economic, political and energy landscape differences, real participatory dialogue requires commitment on the part of those participating to share responsibility for process and outcomes. This may involve thinking 'out of the box' in reaching collective understanding.

In terms of the published literature, evidence reviewed suggests that inviting members of the public into structured spaces for holding dialogue around complex and technical policy issues is an important contribution to a more transparent and open way of governing - demonstrating that members of the public have the ability to engage with and contemplate large quantities of complex information, and provide detailed responses that inform and enhance governmental decisions. Holding dialogue on difficult and controversial issues with the public in 'invited' and 'safe' spaces is a fundamental enabler for decision makers to feel confident in the public's ability to hold the Government to account[21]. There is also clear evidence that engaging people in a meaningful way has the potential to change attitudes, behaviours and actions[22]. In order to better enable participatory deliberation, dialogue should be well informed and appropriately connected to representative democratic decision-making processes. Effective involvement results from a holistic set of pre-conditions, working best when informal non-statutory civil society networks are empowered to interact with formal statutory networks[23].

Findings from our Literature Review and Case Studies suggest that involvement-led innovation can be a powerful means for agreeing and/or delivering national, regional, city, and local strategic objectives, at a lower cost to the public purse and with less bureaucracy than traditional processes. However, formal mechanisms for energy futures involvement, and linking that involvement to policy- and decision-making structures, are not yet in place within EU states.

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[21] Burall S, Shahrokh T (2010): What the public say: Public engagement in national decision-making, Sciencewise-ERC, Involve.

[22] Prikken I, Burall S, Kattirtzi M (2011): The use of public engagement in tackling climate change, Briefing Paper, Involve: http://www.involve.org.uk/wp-content/uploads/2012/01/The-use-of-public-engagament-in-tackling-climate-change.pdf

[23] Dorfman P. et al (2010): Exploring the context of consultation: The case of local air quality management, Local Environment, 15:1, pp.15-26.

# 6.  Recommendations for a Toolkit

## 6.1    Aims and purpose

Our 'Recommendations for a Toolkit' scope out the key elements that a toolkit must contain to support the development of national energy mix forums. The Recommendations comprise a set of useful, practical and 'do-able' suggestions to underpin civic and stakeholder involvement in energy futures in each member state.

The examples in the Literature Review and the six Case Studies are actually the 'tip of the iceberg'. Involvement, engagement and dialogue is increasingly apparent across a broad range of issues and localities - and, in practice, we are drawing on our wider experience, knowledge and research.

The Recommendations provide indicative rather than formal prescriptive advice. This is because the research project confirms previous findings and experience that, given the national (and indeed local) contexts - including differing sets of public engagement cultures and resources to draw on, as well as the differing energy futures challenges faced by EU states - there is no one simple approach to engagement.

So we have made a point of keeping our Recommendations as straightforward and flexible as possible. In reading through these suggestions, it should be borne in mind that whereas the goal in the scientific-technical community is to find the single best solution to a problem, the facilitation of public debate has a broader function - to find a workable process that holds the participants together in a 'safe space' and encourages collective negotiation within the bounds of scientific, technical, economic and political feasibility.

## 6.2 Principles of effective deliberative dialogue in European energy futures

Experience shows that dialogue works well when participants first agree on 'first principles'. In this context, we base our Recommendations on the following set of key principles.

**Table 3 'Better practice' involvement: nine principles[24].**

### 1. The process should make a difference

- Policy makers should listen to, take account of, and be informed by participants' views.
- It should be clear how decisions or policy developments have, or have not, been influenced by dialogue - and the reasons why.
- Involvement should take place at the right point in the energy futures decision-making process.

### 2. The process should be transparent

- Information comes from clearly identified organisations, publications and other sources.
- Information should be accessible and reflect a range of different perspectives.
- Participants should be aware about what is being recorded in their name, and can expect to receive a report summarising participant's views.

### 3. The process must have integrity

- The integrity and openness of everybody involved – those facilitating the dialogue, and those participating – are among the most important elements of successful deliberative public engagement.
- The scope for making a difference to policy or decision making should be made clear from the start – it is important to be clear about what is, and what is not, open to change as a result of the process.
- Decision makers should be willing to keep an open mind in listening to, and taking account of, views that flow from dialogue.

### 4. The process should involve the right number, type and  balance of people

- Efforts should be made to involve a broad range of energy futures stakeholders - diversity is more important than geographic representation.
- If appropriate, non-statutory stakeholders may be offered support to ensure they are not excluded on financial grounds, for example: travel expenses, basic *per diem* income remuneration.
- Given the key nature of the issue, efforts should be made to include the right number of people.
- Special efforts should be made to 'reach out', in order to help balance sectional interests and enable a wide range of views to be gathered and taken into account.

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[24] Involve, NCC: Deliberative Pubic Engagement: Nine Principles: http://www.involve.org.uk/wp-content/uploads/2011/03/Deliberative-public-engagement-nine-principles.pdf

### 5. The process should treat all participants with respect

- Dialogue should take place in a safe and non-confrontational manner, with participants' contributions being valued.
- Dialogue should be well managed to build confidence and trust in the process.
- In order to demonstrate respect for the process and policy-relevance – decision makers may need to take part in the dialogue.

### 6. The process should give priority to participants' discussions

- Sufficient time should be allocated to discussion between participants, and views expressed should be carefully recorded.
- Dialogue should follow a logical path from learning and discussion - so that participants build on, and use, information and knowledge they acquire as the process develops.
- Participants should be given a variety of ways to express their views - through collective discussion, fact-finding, and forming outcomes.
- Each individual dialogue should allow time for feedback and summing up - so that participants can check and validate points that are being interpreted as the main results.

### 7. The process should be reviewed and evaluated

- Evaluation assesses what has been achieved, and whether the dialogue has been carried out in an open and fair manner.
- Early and on-going review ensures that the process is guided by measurable objectives.
- Independent review and evaluation can ensure objective scrutiny, providing further legitimacy and accountability.

### 8. Participants should be kept informed

- Dialogue participants should be given clear information before, during, between and after meetings, events or online initiatives.
- Organisers should circulate a summary of participants views as they have been presented to policy and decision makers, and they should provide clear information on any decisions, and how participants input has 'made a difference'.
- Ideally, all reports and feedback should be published - although comments from individual participants should be kept anonymous to ensure that everyone can speak freely within the dialogue.

| 9. | **The process should be tailored to circumstances** |
|---|---|

Given that the dialogue process should be designed to meet specific aims and objectives, and to meet the needs of the participants, as well as those of decision or policy makers, it is crucial that the following elements are clear from the outset:

- The purpose and objectives of the dialogue.
- The intended outcomes.
- The people who should be involved.
- The context into which the process will fit.

## 6.3    Good practice

For involvement to succeed, people need to have trust in the process. Here we set out a range of key criteria to enable broad and inclusive participatory dialogue.

**Table 4.   'Good Practice' Involvement Criteria**[25]

| Fit for purpose | Understand and use a spectrum of involvement techniques. Carry out participation and involvement processes over an appropriate timescale. Understand what are the most appropriate approaches at the various stages. |
|---|---|
| Proportionate | Involvement should be proportional and appropriate to the decision stakes. Be clear about what is negotiable – what can be changed as a result of involvement. |
| Sustainable | The aim should be to develop relationships over a period of time with continuity on both personal and organisational levels. This builds trust. |
| Proactive | Involvement should be upfront about difficulties that may need to be addressed. This enables interested parties to be collectively involved in finding better solutions. |

## 6.4    Issues that the Toolkit will need to address

The good practice criteria and principles above provide the framing for the set of questions which any toolkit must address. These questions form the core of our Recommendations and will need to address them in the context of the debate about energy futures, the stakeholders involved and the general purpose of promoting engagement at a national level. The toolkit will need to take account of the fact that there is a multiplicity of contexts across Europe (in terms both of the context of the energy futures debate, and the culture of formal and informal engagement).

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[25] Adapted from: Warburton, D. with Wilson, R. and Rainbow, E. (2007): Making a difference: a guide to evaluating public participation in central government, Involve / DCA (now Ministry of Justice).

The target audience must be identified before any development starts. This could happen at the commissioning stage, or it could be the first task of the development process. It is likely that in different countries the toolkit will be used by people at different levels of government, and some actors outside government. The target audience will dictate the assumptions which underlie the toolkit, the resources that will be available, the style of language which will be appropriate, and the experience and expertise that the audience have of engagement.

It is highly likely that the audience will have limited understanding and experience of public engagement. It will be important therefore that the language used is clear and simple, that any jargon is explained, and that practical examples are given where appropriate. The design of the toolkit will be critical to ensure that the lay reader is able to orientate themselves in relation to where in the process each section comes.

We highlight in this report the range of contexts across Europe in which debates about energy futures are occurring. Any toolkit cannot possibly expect to deal with all eventualities. While it will need to provide concrete tools and methods if it is to be useful, it will need to make the principles behind these methods clear, and provide a series of links and suggestions for other resources which could be used for further inspiration. It is only in this way that it will prove a useful and practical tool for the range of actors who will need to use it.

Finally, it is critical to note that a toolkit alone will not be enough to embed deep, meaningful engagement on energy futures in most contexts. In most countries engaging stakeholders and citizens meaningfully in a debate about energy futures implies a substantial change in the way decisions are taken. A well designed and implemented engagement process is not enough. Much more than a toolkit is needed. In addition, the following will be required: real political and administrative leadership; buy-in at different levels of the civil service; training and mentoring to support individuals new to this way of working; additional resourcing; and changes to HR practices including criteria for annual appraisal.

### 6.4.1    Clarifying the purpose of engagement around European energy futures

Successful engagement requires clarity of purpose which is shared by all key parties. It is 'best practice' to develop this purpose up front, before deciding on the methods and processes for engagement. The toolkit will need to identify or evolve a range of methods, appropriate for different contexts, which can be used to develop such a shared purpose.

### 6.4.2    Clarifying the context for engagement

It is rare for any engagement to happen in a vacuum, without some element of previous engagement having happened before. In a policy area as potentially controversial as energy futures there will be a multiplicity of voices engaging with each other and with government. It is important therefore that the context in which the engagement is going to happen is properly understood. Some of those developing an engagement process will have a very good handle on the context already, but others may not. The toolkit will need to provide suggestions and tools for ways in which the energy, political, cultural, social landscape and historical context can be rapidly analysed in order to inform the development of the engagement process.

### 6.4.3    Who should be involved?

The goal of involvement should be to create a broad and inclusive collaborative initiative that involves citizens, organisations, individuals, businesses and institutions. Whilst it is outside the remit of this study to determine the nature and breadth of this involvement, it is clear that an initial scoping list would comprise representatives from both non-statutory and statutory organisations (i.e. environmental NGOs; finance and business; government departments; technological and industrial sectors; the energy supply, distribution and service industries; domestic consumers; high-intensity users; local government; local communities; trade unions; research institutes; elected representatives, and regulators). However, given the key nature of non-statutory involvement in the context of trust building and EU democratic legitimacy, is will be important that their input is not out-weighed by statutory input. In other words, this should be essentially an 'out-reach' and knowledge-balancing exercise.

While there will already be many individuals and organisations engaged in various aspects of the energy futures debate, there will be some that may not be engaged, but either have a legitimate interest, or have the potential to block decisions further down the line. The toolkit will need to provide a series of simple tools to support the identification and prioritisation of stakeholders.

Not only must the toolkit deal with the identification of stakeholders outside government, but it must also emphasise and provide clear guidance for how to identify and involve key stakeholders inside government. It is these stakeholders who must, in the end, develop and implement the policies which arise from the engagement process. If decision makers are not engaged in the process they are far less likely to act on the outcomes, thus negating the purpose of the engagement in the first place, as well as reducing the trust of stakeholders and the public in future (or ongoing) engagement processes.

As we have discussed earlier, there is a difference between stakeholder and public engagement. The toolkit will need to highlight this and provide support to help think through the implications of the difference for this engagement process developed.

The toolkit will need to highlight the challenge of ensuring that all energy sector stakeholders get involved. It must provide guidance, tools and tips for supporting those stakeholders, members of the public, and communities of geography or interest who might find it a challenge (or not want to become involved) to engage on equal terms with other stakeholders.

Given the remit of this study is to draw out broad recommendations rather than identify specific energy sector stakeholders - in APPENDIX 3 we have explored examples of a possible range of stakeholders at pan-EU and at national (UK) levels.

### 6.4.4    How will the Toolkit deal with diversity?

Given the diverse nature of EU energy and cultural landscapes that we discuss in broad terms above - it is clear that differences of cultural and regulatory context have implications for structures and processes for engagement. The toolkit will need to develop suggestions for a flexible set of responses that acknowledge the positive differences in characteristics between statutory and non-statutory stakeholders. It may also be helpful if the toolkit develops a simple framework for analysing stakeholders across a small set of these characteristics, such as knowledge, time, financing, 'reach', interest, and so on to, help in the identification and inclusion of appropriate participants.

### 6.4.5 What does it require to engage successfully?

For someone with limited experience of engagement it can be a daunting prospect to develop an engagement process. The toolkit will need to give some practical guidance about the steps required to develop a process, the length of time each step will take, and the resources each will require. It may help if a description of a generic process is developed 'up-front' in the toolkit, so that a clear thread is developed that will infuse the rest of the toolkit.

### 6.4.6 What process should be used?

The answers to the questions above will provide the context in which the method or process for engagement can be developed. Different methods will be appropriate for different contexts. The toolkit will need to provide guidance on how to develop the process. It will also need to provide resources, or links to resources, about the different methods and processes which could be used.

### 6.4.7 Online or offline?

The developing field of online engagement is a relatively new one. There are a whole suite of potential methods, processes and social media platforms which could be used. As highlighted above, someone with limited experience of engagement will find this daunting. The toolkit must develop a clear description of the different types of online engagement, highlighting their strengths and weaknesses. Clear guidance will need to be developed to support decisions about whether to engage online or offline, as well as how to combine different methods.

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**Developing role and possible influence of social media**

The digital world has lots to offer for engaging with the public. There is a broad range of tools available, including websites, blogs, social media (e.g. Facebook, Twitter), collaborative working (e.g. Wiki's), gaming, and so on. There are good reasons for shifting to digital engagement as it allows a large number of people to contribute, gives all participants an equal voice, can be a quick and accessible mode of engagement from the participants' perspective, enables participants to discuss an issue at their convenience (regardless of location or time), and the anonymity of online processes can encourage open discussion and open up networking possibilities for people who wouldn't normally meet. The nature of digital information allows for comparison, aggregation, 'mashing up' data, and makes information more easily accessible.

Also, digital technologies allow for better self-organisation, enabling groups and individuals to pick up initiatives that have been formerly only the business of statutory stakeholders and policy. Sometimes the resulting online partnerships, networks and communities are better placed to meet this need, opening up far-reaching opportunities (if policy proves willing to relinquish more aspects of control).

Although the Internet offers new opportunities for engagement; some argue that there is a tendency to create artificial distinctions between digital and online engagement and face-to-face engagement. However, within both the online and offline world, it is crucial to think through the purpose of engagement before deciding on the method. A badly designed online consultation without a clear purpose is as problematic as a face-to-face process without one.

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**Potential pitfalls**

Whilst digital technology can enable involvement, the characteristics often regarded as key to digital exchange do not necessarily create a successful engagement process. Although the internet is speeding up this rate of exchange in the online community, speed alone is not a defining constituent of good involvement. The Internet does allow a larger number of people to take part than was possible before, but it can also lead to focussing too much on the number of people taking part. The Internet does have the possibility of reducing the costs of engagement; however the question remains, at what cost?

And digital engagement does have potential pitfalls. If not carefully planned, online consultations can generate unmanageable amounts of material, and exclude people who do not or cannot access/navigate the Internet. In this way, the technology can shape the process, and any perceived complexity, such as registration, can prove a barrier to participation. Also, there are situations were online engagement may not work as well as face-to-face: it may be more difficult to access informed, thought-through and considered opinions from Internet participants as their attention spans are often shorter than their face-to-face counter-parts, and they would have less access to measured exchange and discussion with other expert participants.

**'Mixing it up'**

In deciding whether or not to use digital engagement technologies it is perhaps not a question of either/or. In many cases face-to-face and online engagement can complement each other, and digital technology can be used as an adjunct to face-to-face meetings. Some of the dialogue processes reviewed in this study have successfully used digital tools to support face-to-face discussion, allowing for better visualisation of scenarios or 'on the spot' analysis.

Adding digital technology to face-to-face engagement allows for the 'scaling-up' of deliberation, and thanks to networked laptops and electronic voting pads thousands can be engaged in simultaneous discussion. Digital technology enables quick aggregation of views, and responsive adaptation to participants needs. Those with little time can access meetings and discussions remotely, whilst those who wish to commit more to the process can attend in person.

An example of the constructive interplay between face-to-face and online engagement is the award winning Geraldton 2029 process - a long-term initiative aimed at improving sustainability in the Greater Geraldton City Region of Western Australia through deliberative democracy. Here, a series of public deliberation techniques were implemented, each building on the other to broaden participation, encourage equal discussion, and ensure that resulting outcomes influence policy and decision making. During this process, 4,000 people were actively involved through *World Cafés*, online deliberative engagement and participatory budgeting. Participants also exchanged views through the local press and via 'Facebook'. In this way, face-to-face dialogue and online exchange proved mutually supportive.

**Digital engagement: things to bear in mind**

The use of social media and other digital engagement tools for public and stakeholder engagement in complex areas such as energy futures should be deployed with care. Any system can be 'gamed', and it will be important that any platform used allows for comprehensive error-checking. Also a disproportionate focus on the numbers of people participating can be counter-productive, and it may prove critically important to have a deeper and more interactive dialogue with energy sector stakeholders and civil society in order to better address issues around competing interests. In assessing whether digital and social media platforms are appropriate, the benefits and risks should be balanced. Although novel techniques such as 'crowdsourcing' are innovative, they cannot replace structured and considered dialogue.

In order to better access the online community, it will be important to reach out to the sites and platforms where people are, including magazine sites, blogs, forums and social networks. In this sense, digital and social media exchange is about doing more than putting documents 'out there'. Multimedia interactive dialogues should be accessible and interesting, showing the connections between engagement initiatives, and encouraging the 'seldom heard' to express their views.

**Further reading**

Andersson, A. (2011) Engaging in bits and bytes http://www.involve.org.uk/engaging-in-bits-and-bytes/

Armchair Involvement: helping you to use new technology to engage people in service improvement http://www.institute.nhs.uk/building_capability/armchair_no_comment/armchair_involvement.html

Digital engagement cookbook: Recipes for effective digital engagement http://www.digitalengagement.org/

Gray, S. (2011) The digital engagement puzzle http://www.helpfultechnology.com/helpful-blog/2009/11/the-pieces-of-the-digital-engagement-puzzle/

Hartz-Karp, J. Tillman, C. (2010) Geraldton 2029 and Beyond: Developing Civic Deliberation and Collaborative Governance to Co-create a Sustainable Future http://www.bertelsmann-stiftung.de/cps/rde/xbcr/SID-2F361BED-59CF835B/bst_engl/Geraldton_engl.pdf

People and participation http://www.peopleandparticipation.net

The Digital Engagement Guide: Ideas and practical help to use digital and social media in the public sector http://www.digitalengagement.info/

### 6.4.8  How should the Dialogue be facilitated?

Facilitation can either be carried out by individuals within the organisation commissioning the engagement process, or by a third party, neutral facilitator. The choices made will have different impacts on the engagement process. Using a neutral facilitator can give the engagement process more credibility with certain actors and help to ensure that discussions are not driven by an agenda, as well as guaranteeing skilled mediation between those holding opposing viewpoints[26]. Those with or without strong opinions are more likely to engage in a process conducted by a neutral third party. However, in certain circumstances, having an internal facilitator can help to ensure that the discussions and their outcomes are taken forward into the responsible organisation and acted upon. The toolkit will need to develop clear guidance to help enable the choices made about how to facilitate, and who may facilitate dialogue.

### 6.4.9  Framing

The framing of the issue that is at the centre of the engagement process will affect the discussion, the range of stakeholders willing to engage in it (as well as the approach to the process that they take), and even the final answer. The toolkit will need to provide a clear analysis of the different framings that could be used for the engagement process and explore their implications for the recruitment and retention of stakeholder participants, the discussion and the way that those outside the process perceive its even-handedness.

### 6.4.10  Communication

One way in which engagement processes can fail to have an impact is because key stakeholders not directly involved in them are either unaware that they are happening, do not see the outputs from the process, or find the outputs are written in a language – technical or otherwise – which is off-putting. The toolkit will need to provide clear advice on how to develop and implement a clear communication strategy for the engagement process as a whole.

### 6.4.11  Governance and oversight

Engagement processes on issues as potentially controversial as energy futures require clear, transparent and accountable governance processes. There are a number of different ways that such processes can be established and forms they can take. The toolkit will need to develop some clear guidance about how this should be approached. Although this recommendation comes close to the end, this is a critical element that must be solved very early on in the process, preferably before the purpose and framing are discussed in any detail.

### 6.4.12  Monitoring and Evaluation

A key element of transparency, openness and accountability is the extent to which the process, the outcome and the impact on policy are evaluated. The toolkit must emphasise the importance of developing indicators for monitoring and evaluating upfront, and provide guidance on how to do this.

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[26] Ipsos Mori (2011): Findings from the DECC 2050 Deliberative Dialogues, 20 May 2011, Ipsos Mori.

### 6.4.13 Are dialogue tools helpful?

Deploying dialogue tools can work well as they help participants to think and apply the information. This encourages more sharing between participants. It also means that technology-adept participants can help out others who feel less comfortable with technology.

### 6.4.14 Case studies

At the start of this section we emphasise that this toolkit must be as clear and simple as possible; it will be written for people who are not expert, or even comfortable and confident in running engagement processes. All sections of the toolkit will need short, practical case studies which illustrate the key points of the section. Given the audience, these case studies may well be the 'way into the text' for many people. They will need to be compelling, short and very pithy.

# 7. Strategic involvement

## 7.1 Channelling and focusing involvement

Across the EU new kinds of collaborative action around energy futures are emerging, comprising multi-stakeholder networks that cut across divisions of responsibility between levels of government, spheres of society, and geographical areas. This represents a new form of governance based on collective public values. The goal is to build a shared understanding based on the open exchange of diverse perspectives, and generate a social contract around energy system change through civil society involvement and critical reflection.

The sheer weight of statutory, citizen, and stakeholder civil society involvement in energy futures dialogues documented in this study evidences the importance of this trend. Our review has documented the emergence of extensive and diverse energy futures participation at local, city, regional, national, and pan-EU levels - and we believe that there is a real practical need to channel and focus this diffuse involvement and expertise and capacity. Review of the academic literature supports this conclusion.

## 7.2 Energy transition and public values

The 'energy futures' landscape within Europe is one of national differences between state and market, choices and trade-offs over supply-side, demand-side, transmission and load-balancing infrastructure. Although EU states diverge in terms of energy and industrial landscapes, technological structures and regulatory practice - European energy policy offers a fairly open and flexible framework in which member states can develop constructive collective action on stakeholder and civil society involvement in sustainable energy choices.

Given the scale of long-term investments that are now needed across the options of renewables, energy efficiency and conservation, grid network infrastructure development and load balancing, carbon capture and sequestration, carbon based fuels and nuclear - it is clear that European publics should play a key role in taking these critical, social, environmental and economic decisions. If carried out in a truly involving way, the integration of public, policy, and expert knowledge allows for greater accountability, transparency, and much better 'take-up' of necessary change and improved long-term likelihood of problem resolution.

Transition to a low-carbon energy economy will not be straightforward. New energy storage, transmission and distribution networks imply major change. Supply-side system transition will involve large-scale infrastructure deployment. Sustained and ramping demand-side energy conservation, efficiency and management, central to emissions reduction policy objectives, will impact on the every-day lives of communities and households.

Because of the scale and step-change in pace of the transitions needed, differing energy futures options will vary in their acceptability to differing sections of the public. Whilst there have been some civil society involvement around the acceptability of some individual energy technologies - and at particular spatial and governance levels - there is now a pressing need to carry out involvement around EU state energy systems, exploring the choices and 'trade-offs'. Here, public dialogue, and

the participatory practices that enable it, are core to the building of mutual understanding between stakeholders. The key driver will be the role of public knowledge, views and values in facilitating or limiting energy system change and innovation.

## 7.3    National energy mix forums

This review confirms the importance of acknowledging and embracing cultural and energy landscape differences between differing EU states, the core role of trust-building within dialogue processes, the need to distinguish between engaging the public as *civil society stakeholders* rather than as *citizens*, and the benefit of relating participatory democracy initiatives to more formal representative decision-making structures.

Because European public values around 'energy futures' are in transition, with significant implications for EU policy, we suggest that national energy mix forums have the potential to play a key role in capacity-building trust in the relationship between, and among, statutory and non-statutory civil society stakeholders and policy actors. Here, inclusive 'bottom-up' national Energy Mix Forums may be more able to manage technological change than more 'top-down' decision-making processes. This co-production of knowledge and social order brings with it greater democratic legitimacy for energy futures policy and decision making.

For complex issues with uncertain futures, it seems that the strategic goal of stakeholder involvement in national energy mix forums may not be to find the single 'right technical answer' to the problem - but rather to bring people together, and keep them talking to each other, in order to ensure that better decisions are made in the future.

# Appendix I.        Literature Review

*Literature Review of relevant Initiatives to develop or implement public involvement, dialogue and consultation processes in the EU and elsewhere*

## 1.      Approach

This paper comprises a short literature review of recent and relevant stakeholder initiatives, dialogues and public consultation processes in the EU and elsewhere concerning future national energy mix scenarios at local, city, regional, national, and pan-national levels. A few best practice processes on other topics are also included. The aim is to identify sets of important engagement processes and initiatives, highlighting key collective themes. The inclusion of more involvement examples from some EU and international states should be understood as a finding from the review, reflecting current 'state of play' trends.

Rather than following a set of selection criteria, the review attempts to capture and detail a broad and varied set of best practice involvement processes. This is done in order to convey the general nature and extent of energy related involvement. Thus the review is primarily conceived as an identification and listing exercise. A summary of recent relevant academic literature on involvement is then set out.

The review does not comprise a complete audit of all involvement processes in all EU states, nor all academic studies - that task lies far outside the remit of this discussion. In this sense, the review is undertaken as a practical and empirical task on which more detailed *Case Study* and *Recommendations for Toolkit* research *tranches* will be built. These further research *tranches* will be coded and analysed through a set of draft analytical scoping factors.

In order to provide clear and succinct knowledge transfer and deliver best practice learning, a constructive approach to representing data has been adopted through deploying information in the own words of key proponents and commentators. The intention is to provide direct practitioner and research knowledge transfer, unmediated and uncluttered by secondary interpretation.

## 2.      Context

Questions of legitimacy, which arise in relation to the EU, have been linked to how the EU is communicating with the citizens of Europe (Power, 2010). Here, the policy landscape of participatory governance concerning a shared, knowledge-based European Community energy future is set within the drive for sustainable development as located and expressed within EU's Lisbon Strategies of 2000, 2005, and 2009.

These strategies are underpinned and operationalised by elements of the EU legislative framework, including the Directive on Public Participation in Environmental Plans and Programmes, the EU Public Participation Provisions of the Aarhus Convention, and the EU Directive on Strategic Environmental Assessment. Other related EU legislation relevant for public participation includes Directives on Integrated Pollution and Prevention Control and Environment Impact Assessment. More recently, the EC Road Map 2050 (2012) has concluded that citizens need to be informed and engaged in the decision-making process, while technological choices need to take account of the local                                                                                              environment.

## 3.    Local, city and regional involvement

**3.1**    Project **ARTEMIS** (2006) aimed to development new tools for the participatory exploration of scenarios concerning their potential to contribute to sustainable development. The scenarios envisaged were explored at local and national levels. *ARTEMIS* included an energy planning processes in the *Finspång Municipality* (21,000 inhabitants in south-eastern Sweden), comprising citizens panels, workshops, a visioning process, followed by selection of actions and strategies to inform a more formal environmental assessment (EA).

Based on the results of the EA, a research group and municipal work group together analysed whether actions and strategies were robust in terms of environmental improvement. An energy plan based on the process outcomes strategies was then constructed and implemented by statutory civil servants. The application of the model indicated that the decision-support tools are valuable inputs to local energy planning, providing better understanding of local knowledge and values through citizen dialogue and comprehensive EAs. However, the experiment also showed that there are several challenges involved in applying the tools: for example, in this instance, it was not always a simple task to encourage citizens and the industry to participate co-operatively, and it can be complicated to combine several different tools for decision making into a single planning process.

**3.2**    **Dialogue with the City** demonstrated how a dialogue, which commenced with a broad scale goal, could be activated at the local level, with local communities determining how best to achieve that goal. The 2003 Western Australia dialogue and involvement initiative included: *Citizens' Juries, Deliberative Surveys, 21st Century Town Dialogues and Multi Criteria Analysis Conferences* (Hartz-Karp, 2011). Each technique depended on getting a representative and inclusive group of participants to deliberate on an issue, taking all viewpoints into account, and for their deliberations to have influence on decision makers. *Dialogue with the City* was an extensive engagement process that started with a community survey sent to a random sample of 8,000 citizens to determine their key issues and concerns.

The process also involved an interactive web site, a series of feature articles on issues facing the city in the state newspaper, a commercial television program outlining various scenarios for the future that was broadcast during prime time, special listening sessions with youth, Indigenous people, and those from non English speaking backgrounds, and a competition for primary and secondary students to describe their vision for Perth in 2030.

This culminated with a *21st Century Dialogue* involving 1,100 participants seated at small, facilitated tables with networked computers. Participants deliberated and prioritised their values and objectives, and using a regional planning game, determined the way they wanted their metropolis to grow into the future. Over six months, more than 100 participants worked together to build on *21st Century Dialogue* outcomes in order to create a Community Plan known as **Network City**, which was submitted to Cabinet and accepted. Local governments were then funded to run deliberations in their own communities to determine how the framework could be implemented at a local level (Hartz-Karp, 2005).

**3.3**    The **Transition Network** (2012) supports community-led responses to climate change and shrinking supplies of cheap energy. Initiating groups learn about the UK *Transition Network Model*, adapting it to their own local circumstances in order to be able to engage a significant proportion of

the people in their community. These groups can then start up [practical projects](#). As groups become more experienced, they often engage in [community-wide visioning process](#)es. [http://transitionculture.org/wp-content/uploads/edapcivic12-300x225.jpg](http://transitionculture.org/wp-content/uploads/edapcivic12-300x225.jpg)These groups can create formal *[Energy Descent Plans](#)* and start up [local energy initiatives](#) e.g. *UK OVESCO* - a community owned renewable energy company and example of participatory action, providing local employment including MSC registered installers for micro-generation; help with the *Feed-in Tariff* and *Renewable Heat Incentive;* and help with insulation. The *Transition Network* model has been substantially mobilised across the UK and, internationally, across 35 other countries.

**3.4**    An integral element of the UK *Co-operative's Clean Energy Revolution* campaign, the **Community Energy Challenge** (2012), delivered by the *Centre for Sustainable Energy*, provides enterprise development, mentoring, technical advice and community facilitation for six to eight communities, enabling them to initiate co-operative renewable energy projects at a significant scale (valued at £1m to £3m and/or rated in excess of 500kW).

**3.5**    *UK Sciencewise* **Low Carbon Communities Challenge** (2009) was a research and delivery programme to provide financial and advisory support to 20 'test-bed' communities across England, Wales and Northern Ireland (UK *DECC, Northern Ireland Executive, Welsh Assembly Government*) that were seeking to cut carbon emissions. The aim of the project was to design public engagement and co-inquiry programmes to inform policy development and delivery.

**3.6**    *Low Carbon Communities Challenge* was informed by the evaluation findings from the UK **Big Energy Shift** (Ipsos MORI, 2009), a *Sciencewise-ERC* funded project dialogue project, designed to encourage people to discuss the way they insulate, heat and power their homes and communities. The objective of the *Big Energy Shift* was to establish the basis on which the public would be prepared to take up renewable energy generation and energy conservation. The dialogue process involved 270 householders from nine communities to test out the public's views on community-level carbon and energy savings. Meeting events were run with owner-occupiers in nine areas: an urban, rural and off-grid area in England, Wales and Northern Ireland. In each area there were two day-long meetings (Events 1 and 3) and in between these events participants took part in a range of different activities including interviewing their peers, visiting an exemplar building, completing a diary, or being interviewed by the project team in a filmed interview at their own home (Event 2). The first meeting in each area was attended by technical experts, and the second meeting by experts on implementation of measures (Rathouse & Devine-Wright, 2010).

After all the local events were complete, a Forum was held in London with a small number of householders from each area as well as policy makers and external stakeholders. *Ipsos MORI* found that the majority of people across the meetings and the Forum were overwhelmingly positive about improving the energy efficiency of their homes and about the low carbon and renewable energy technologies in principle. They would like to see change and are impressed and shocked by the scale of the problem. Householders felt that 'business as usual' or tinkering with existing frameworks will not deliver change, and that business, homeowners and Government all need to play their parts. But they also asserted that the mechanisms in business or government were not yet in place to allow them to make changes, either individually or collectively - so they looked to Government to take the lead. This initiative, which was announced in the *[Low Carbon Transition Plan](#)*, provided further funding to the communities involved (ibid). Other UK *Sciencewise* energy related public (or citizen)

dialogue projects include: *Community X-Change, Geoengineering, Citizens Advisory Forum for Living with Environmental Change, Planet under Pressure Conference – Youth Voice.*

**3.7** *NESTA's* (2010) **Big Green Challenge** was a UK innovation competition to stimulate and support community- led responses to climate change with a £1 million prize fund. The communities were defined by geography but included some communities of identity or interest such as Faith and Climate Change. The challenge to entrants was to develop and implement sustainable ideas for reducing CO2 in their communities. The *Big Green Challenge* winners achieved reductions in CO2 emissions of between 10-32 % in just one year. When these reductions are set against the UK target of achieving a 34 % reduction by 2020 it can be seen that these community-led initiatives could deliver substantial cuts in emissions in a very short time span and have the potential to deliver deep cuts that could exceed the UK 2020 target in a matter of years.

A key part of the innovation revealed in the *Big Green Challenge* was the ability of communities to take control of their own energy supply or performance as a means to generating income to support other community climate change activities. Results suggest that, together with other government initiatives, community-led innovation can be a powerful means for delivering national strategic objectives - at a lower cost to the public purse and with less bureaucracy than traditional grant funding processes for community and voluntary groups.

**3.8** **Local Involvement Networks** (LINks), a non-energy related set of engagement processes, were established within each English county, unitary, metropolitan or London borough council. Their role was to enable local individuals and groups to actively influence local health and social care services, from planning and commissioning to delivery (Dorfman, NCI, DH, 2008). Each *LINk* was made up of members and participants, including individuals, groups and organisations, with an interest in their local health and social care services. *LINks* attempted to establish inclusive involvement from many sections of the local community, especially those who are difficult to involve or seldom heard.

*LINks* were not just groups of individuals, but were primarily networks to bring together diverse groups in the area, and representatives of other networks. The primary role of a *LINk* was to provide a stronger voice for local people in the planning, design or redesign, commissioning, and provision of health and social care services. *LINks* powers and roles were underpinned by UK primary legislation (Dorfman et al, 2009). *LINks* have been superseded by *Healthwatch.* Re-drawing the patient as a consumer, *Healthwatch* is intended to be a consumer champion for both health and social care, and functions in two distinct forms – *local Healthwatch*, at local level, and *Healthwatch England*, at national level (DH, 2012).

**3.9** The **Local Climate Change Visioning Project** (2010) provided a participatory, scenario-based lens through which the local community, decision makers, scientists and planners could examine climate change impacts and develop policy responses at a local level in British Columbia, Canada. Using 3D visualization techniques and Geographic Information Systems (GIS) mapping, this project examined projected climate change impacts on local communities.

The visualization products identified alternative climate scenarios and potential consequences of adaptation and mitigation responses. This process generated a conceptual framework about alternative, coherent, holistic energy and climate change mitigation scenarios at the local scale

(Sheppard et al, 2011). Project findings suggest that complex energy and climate change information can be successfully applied and understood at the community level through use of coherent scenarios. Experience suggests that these processes also force the integration of diverse streams of information from multiple sources and disciplines.

**3.10** *Alberta's Climate Change Strategies* (2008) **Alberta Climate Dialogue** (2012) involves citizens and civic leaders from municipalities, industries, environmental groups and provincial government departments pooling diverse perspectives and weighing trade-offs. The aim was to make recommendations to municipal and provincial governments on climate change policy with the goals of conserving and using energy efficiently, implementing carbon capture and storage, and transforming energy production to cleaner, more sustainable approaches. Targets included reducing emissions by 50 megatonnes by 2020; reducing emissions by 200 megatonnes by 2050 (emissions to be reduced by 50 per cent below business as usual level and 14 % below 2005 levels). The dialogue and its targets reflected Alberta's position as a significant oil and gas energy supplier, while maintaining a commitment to economic growth.

**3.11** The **Clean Energy Resource Team** (CERT) (2012) comprises collaboration between the Minnesota Department of Commerce, the University of Minnesota, and the Minnesota Project, a nongovernmental organisation. Six regional CERT teams were created, with people from various cities and counties, farmers and other landowners, industry, utilities, colleges, universities and local governments. The initial outcome of the project was a strategic vision and a renewable and energy conservation energy plan for each region.

CERT processes include: *Linden Hills Power & Light (LHP&L),* a community-based organisation located in the lakes area of the city of Minneapolis; *Metro CERTs*, a *Twin Cities*-based version of *CERTs* created by the state legislature in 2007; *Greenstar Cities*, a state-wide program to designed to engage, support, and reward communities that meet and exceed the state goals for energy efficiency and global warming emissions reductions; *RENew Northfield*, a 2003 initiative in a community about one hour south of the Minneapolis-St. Paul city; the *Phillips Community Energy Cooperative (PCEC)*, a program of the *Green Institute*, a local non-profit organisation based in a largely low-income, minority neighbourhood of Minneapolis.

Findings from these projects suggest that a system of strong self-governance requires sustained attention to issues capable of creating a sense of community that transcends identity based upon a narrow reading of self-interest.

# 4. National Involvement

**4.1** The **Future Danish Energy System,** *Danish Board of Technology* (2007) invited a broad set of individuals representing the energy sector, researchers, NGOs, and the Danish *Folketing* to review the development of the Danish Energy system. A cornerstone of the project was the *Future Panel*, supported by a steering committee with key experts and players from the energy sector, a task force group, and the *Danish Board of Technology* - who supplied a secretary and a project manager.

**4.2** Multi-stakeholder discussion on energy futures and emissions trading comprises part of the remit of the *German Federal Ministry for Education and Research (BMBF), Social-Ecological Research (SOEF), EE-regions*. This remit involves the cooperation of natural and social scientists and civic society, including consumers, local authorities, businesses and NGOs. In this context, *Forum Grid Integration (Forum Netzintegration)* **'Plan N'** (2010) comprised outline recommendations for the integration of renewable energies sources. *Plan N* is the result of a discussion process, comprising strategies aimed at demonstrating ways of achieving greater public acceptance for grid upgrading and expansion.

*Plan N* was signed by 17 companies, 49 organisations and 7 individuals. The recommendations were developed over a two-year period by *Forum Netzintegration*, moderated by *Deutsche Umwelthilfe e.V. (DUH)* and sponsored by the *Federal Ministry for the Environment, Nature Protection and Nuclear Safety (BMU)*. The Forum working group comprised multi-stakeholder statutory and non-statutory involvement including trade associations, action groups, public authorities, environmentalists, transmission system operators, industry companies and scientists. Given the complex and contested nature of the topic, the dialogue did not agree on all points, but provided three levels of outputs: position A, position B, and neutral. *EnBW Transportnetze* added a special declaration to the document. Key to these outputs was the accommodation of conflicting interests, the production of joint proposals, and specific guidelines (Rozenkrantz et al 2010; German Energy Blog, 2010).

**4.3** The **German Council for Sustainable Development** (RNE) is a multi stakeholder body advising the *German Federal Government* (Bachman (2012). The 15 *RNE* members were appointed by Chancellor Angela Merkel. The *RNE* was first established in April 2001 by then Chancellor Gerhard Schröder. *RNE* conclude that science advice gains momentum when it is aligned with other dialogue process rather than presenting just a one-point stand-alone study, and that catalysing change is stronger and more operational the more it can be based on the building of appropriate partnerships.

In 2011, five Members of the Council and the General Secretary found themselves involved in the *ad hoc* committee advising on the so-called *Energiewende* (the German energy 'turn-around').

*RNE* facilitates several other visioning processes, including **Dialoge Zukunft Vision 2050** involving young professional (under the age of 27) in a dialogue on long-term policy options. *RNE* also facilitates a **Sustainable Municipal Development Initiative** (2010) engaging around 20 Mayors. Noting that sustainable development cannot and must not be enacted top-down, the *Initiative* concluded that it is a function of trust in the knowledge, experiences and ideas of people in their cities, noting that true participation requires commitment on the part of the general public, and those participating should share responsibility for implementation, outcomes and efficacy.

**4.4**　　The German research institutes: *Ecologic* and the *Institute for Future Studies and Technology Assessment (IZT)* **Public Acceptance of Renewable Energies at the Regional Level** project involved the organisation of five multi-stakeholder *'Future Labs'* (Schlegel & Bausch, 2007). *IZT* focused on the local level, and *Ecologic* paid particular attention to the regional level. The process involved open discussion and debate with representatives from local authorities, NGOs, science, business and other stakeholders. Solar power, wind turbines and biomass took centre stage at the workshops. The aim of the project was to identify and investigate resistance to renewable energies and to jointly elaborate policy recommendations on how to increase public acceptance of, and support for, renewable energies (Ecologic, 2007).

**4.5**　　*ENCI LOWCARB* (2012) **Engaging Civil Society in Low Carbon Futures** developed sophisticated low carbon scenarios for Germany and France based on enhanced stakeholder and expert interaction. Energy scenarios outlined possible low-carbon futures built around assumptions on fossil fuel price evolution, technological choices and the mechanisms of energy demand and supply. žCivil society stakeholders from the transport and electricity sector framed the definition of boundary conditions for the energy-economy and evaluated the scenarios through a participatory approach.

The central position of stakeholders in scenario building allowed the integration of the degree of acceptance for specific energy policy measures or technology decisions. By adding this element, an important step was made by distinguishing between what is technically and economically possible to what is feasible and acceptable to stakeholders.

Scenarios comprise influential tools in political decision-making processes since they shed light on the long-term impacts of current investment decisions, especially regarding infrastructures. *ENCI LOWCARB* concluded that this is why it is crucial that energy pathways are derived from discussions with sets of key national stakeholders. Their scenario design process attempted to explain in a transparent way how qualitative stakeholder contributions were taken into account and integrated within quantitative modelling (Olesen & Fink, 2012; Bibas et al, 2012).

**4.6**　　The **Spanish Energy Mix Forum** (SEMF) (2012) was launched with the support of the *European Commission, Economic and Social Committee. SEMF* comprises a structured national discussion on differing low carbon energy sources in Spain, reviewing economic, technical, environmental and socio-political aspects of differing low carbon energy sources. Key to the process is the 'up-stream' participation of a very broad range of stakeholders throughout the dialogue. The Forum is piloting the key EESC concept of pan-EU multi-stakeholder national energy forums.

**4.7**　　*UK Department of Energy and Climate Change (DECC)* **2050 Public Energy Dialogue** (Sciencewise, 2011) developed online tools to engage the public, elected and business representatives and the third sector about choices the UK has to make to move to low-carbon energy by 2050 around the *2050 Pathways Calculator.* The *Calculator* was intended as an accessible and interactive way to enable both experts and the public to understand the scale of the challenge, explore and test their own preferred solutions and translate these into action in their own lives and communities. The related tools were: an in-depth *Excel spreadsheet*, the online *2050 Calculator* and the *'My 2050'* game.

The three tools attempted to provide differing ways into deliberating the trade-offs required for emission reduction, potentially making them useful for audiences with different levels of knowledge and time. *DECC,* with support from *Ipsos MORI*, organised three deliberative dialogue workshops aimed at engaging councillors, elected representatives, business representatives and the third sector in a climate change debate. *Involve* were part of the moderators team. The workshops comprised test beds for dialogues around the 2050 tools and informed the development of toolkits. The workshops (held in Ulverston, London and Nottingham) were based on *Sciencewise-ERC's Principles on Public Dialogue*.

**4.8**    The *UK Governmental Department of Trade and Industry (DTI),* and *Department of Business, Enterprise and Regulatory Reform (DBERR)* **Future of Nuclear Power: The Role of Nuclear Power in a Low Carbon UK Economy** consultation (DTI, 2007), sought views on the information and arguments set out on whether the private sector should be allowed to build new nuclear power stations in the UK. Over the consultation period *DTI*, *DBERR* requested written responses, published certain documents, hosted a web site, and held 12 regional meetings with representatives from industry, local authorities, NGOs and other organisations. Nine public *Talking Energy: The Future of Nuclear Power* citizen deliberative events with 1000 people took place across the UK in Belfast, Cardiff, Edinburgh, Exeter, Leicester, Liverpool, London, Newcastle and Norwich. At each citizens event DECC provided films, presentation slides and handout sheets were deployed, and *DTI* advisors were on hand as sole advisors the public on technical or scientific matters.

**4.9**    The UK **Submarine Dismantling Project** (SDP) (MoD, 2011; MoD, 2012) was a national consultation process, concerning the dismantling of 27 of UK's decommissioned and de-fuelled nuclear powered submarines including past and current classes. The UK *MOD (Ministry of Defence)* recognised the very controversial nature of the project, that the public and local communities had a key interest in the issue, and that the eventual solution must inspire public confidence.

Key multi-stakeholder groups were created to provide upstream challenge and ongoing advice. These advisory groups and sub-groups were made up of a broad set of representatives from the MOD, other Government Departments, Devolved Administrations, local government, the nuclear industry, the regulators, academics, independent specialists, non-governmental organisations (NGOs), and local community-based organisations (CBOs). Following extensive stakeholder discussions and advice, a national public consultation was carried out.

During the 3-month public consultation period, nine local and two national consultation events were carried out. The documents supporting *SDP* were arranged into five levels to guide stakeholders and members of the public to documents at differing levels of detail (including technical, decision-process, and assessment data). The *SDP* process involved early multi-stakeholder and open public evaluation of very complex and cross cutting sets of data - demonstrating stakeholder and public capacity to analyse, understand, respond and act on complex data. In general, those involved as core stakeholders (including local NGOs concerned about the potential environmental and health implications of nuclear submarine dismantling) maintained trust in the process - key to this was straightforward and ongoing open negotiation between all those involved.

**4.10**    **Canada's World** (2010) was a 3 year citizen initiated pan-Canadian collaborative project between 15 universities and over 40 organisations, comprising deliberative citizens' dialogue sessions and events in each province. Goals included: the creation of a broad and inclusive

collaborative initiative that involves citizens, organisations, individuals, businesses and institutions; the design and delivery of a national dialogue process that empowers citizens to deliberate, formulate and advance options for policy. *Canada's World* scoping research included an online dialogue on *Facebook*, ten Round Table sessions, and interviews. An advisory committee selected nine themes to focus citizens' dialogue, and fielded a poll of Canadian attitudes towards policy. The dialogue phase comprised eight regional dialogues. In addition to the deliberative dialogue process, dozens of organisations, business groups and academic institutions participated in community dialogues, kitchen roundtables, events and forums with their members and constituencies.

**4.11    STEPs (Science & Technology Engagement Pathways)** (2011), a community engagement framework, was developed under the *Australian National Enabling Technologies Strategy - Public Awareness and Community Engagement (NETS-PACE)* program within the *Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE)*. Developed through a multi-stakeholder process, *STEPs* was designed to provide best practice guidelines for the conduct of community engagement to inform decision making about science and technology.

The multi-stakeholder engagement process was carried out during 2010-2011 to develop a framework to evaluate and improve its community engagement activities. *STEP Principles* include: a high level of commitment and integrity, including mechanisms for transparency and accountability; clarity about the purpose, objectives and scope of the engagement; inclusiveness of the diversity of people and views, including an appropriate and structured method; communication and consultation with participants throughout; appropriate, independent oversight and evaluation; relevant, accurate and balanced information and knowledge sharing; genuine, interactive deliberative dialogue, opening up discussion rather than closing it down; and demonstration of influence                        on                        decision                        making.

## 5. Pan-EU Involvement

**5.1** The **Sustainable NOW** project (2012) (*European Sustainable Energy Communities Effective Integrated Local Energy Action Today, IEE/07/752/SI2.499210*) attempted to: arrive at sustainable energy solutions at community level, work with levels of government closest to citizens through building local government capacity, learn from experience, encourage political leadership, and identify opportunities for change at political, administrative, economic, social and environmental levels.

The project involved capacity building, peer exchange and review through involvement with local and regional actors, including: local governments, 'frontrunner' communities, peer-to-peer exchanges, study visits, capacity development workshops, and staff trainee programmes. Outcomes included: energy guidance packages with instruments to support *Local Energy Action Plan (LEAP)* implementation, including integrated climate and energy management and a *LEAP Wizard* for integrated energy action programmes, the implementation of 5 *LEAPs* and related projects in partner communities, and improved awareness of citizens & local politicians on sustainable energy. Project results dissemination focused on Bulgaria, Hungary, Italy, Germany, and the UK.

**5.2** The **GRaBS (Green and Blue Space Adaptation for Urban Areas and Eco Towns)** (2012) project aimed to explore the connection between the challenge that climate change poses to urban environments and their communities, and involves communities in developing and implementing adaptation plans. GRaBS involvement case studies included: *'Community involvement in the Genova region – catalysing across-the-board engagement on adaptation themes'; 'Participation in climate change adaptation in North West England – greening spaces across the region'; 'Engaging the young in the New West City District of Amsterdam'; 'Community involvement in Bratislava – benefiting from the input of local NGOs in adapting the city to climate change impacts'; 'Community involvement in Southampton – engaging with a hard-to-reach Community'*.

Preliminary findings from *GRaBS* suggest that communities can engage at the local level, while at the same time raising awareness about the added value of local actions for solutions at higher spatial scales. As a result, a stepped approach emerges, in which higher-scale imperatives are connected to lower-scale implementation strategies by adequately involving stakeholders and local communities at the appropriate level. In terms of integrated participation strategies, this could imply that representative mechanisms at higher spatial scales are transparently connected to more direct forms of participation at lower spatial scales. Meaningful participation practices allow scope for those participating to have substantial influence. However, tensions may arise over levels of planning options offered, and over perceived openness to serious community influence (Holstein, 2010).

**5.3** **EUROCITIES** (2012), a network of major European cities, comprises membership of elected local and municipal governments of major European cities. The network involves local governments of more than 140 large cities in over 30 European countries. The aim is to share knowledge and exchange ideas through six thematic forums, a range of working groups, projects, activities and events. The network attempts to influence and work with EU institutions, reinforcing the role of locales in multi-level governance.

**5.4**    **Energy Cities** (2012a), a European association of local authorities concerned with energy futures, has a [Board of Directors from 11 European cities](#). The network represents more than [1,000 towns and cities](#) in 30 countries, mainly municipalities, but also inter-municipal structures, local energy management agencies, municipal companies and groups of municipalities. Close to 200 local authorities are individual members of Energy Cities, forming a network that extends over 26 European countries. The network has recently published *30 Energy Cities' proposals for the energy transition of cities and towns*, a contribution to *Rio + 20* (Energy Cities, 2012b).

**5.5**    The **PEPESEC (Partnership Energy Planning as a tool for realising European Sustainable Energy Communities)** (2010) project supported the emergence of European sustainable energy communities through increasing the use of local community planning for the efficient supply, distribution and use of renewable energy sources, and conventional energy, demand-side management and associated mobility. The project deployed best practice Swedish experience, including the involvement of citizens, decision makers, market actors and other stakeholders.

**5.6**    **IMAGINE** (2010), a multidisciplinary and multi-actor platform, attempted to create, share and discuss future-oriented approaches to urban sustainability. The platform did not conceived energy as a sectoral problem, but as an integral part of local and regional development, with an impact on employment, sustainable growth, competitiveness, quality of life, health and safety. *IMAGINE* brought together a wide range of actors who had direct or indirect influence on energy consumption and supply at the local and urban level, attempting to unite a number of partners from the public, private and community sectors around *Energy Cities*. They noted that actors influencing – directly and indirectly – energy consumption and supply within a territory are numerous and varied, including: technological and industrial actors, those from the energy and service industry, consumers, local communities, politicians and trade unions, the academic, cultural and media sectors, and other public actors.

**5.7**    **ENGAGE** (2012), a pan-European communications initiative, seeks to engage citizens and stakeholders at a local level to play their part in building a sustainable energy future. Local authorities deploy *ENGAGE* as a communication tool to share the *[Covenant of Mayors](#)* objectives within their territory. Initially, a core group of 12 cities from 12 different European countries (all signatories to the *Covenant of Mayors*) are pioneering the project, which attempts to facilitate civic participation, mobilising municipal departments and as many of its stakeholders and citizens as possible through a grassroots bottom-up process. The project supports collaborative work among local administrations, stakeholders and citizens facing similar challenges in different European countries.

**5.8**    The **Covenant of Mayors** (2012), a mainstream European movement involving local and regional authorities, facilitates those authorities to voluntarily commit to increasing energy efficiency and use of renewable energy sources on their territories. The main output of *Covenant of Mayors* are *Sustainable Energy Action Plans (SEAPS)* which define the activities and measures set up to achieve emissions targets, together with time frames and responsibilities.

**5.9**    **ICLEI** (2012), a *Supporting Structure* to the *[Covenant of Mayors](#)* (and hence *ENGAGE*), is an association of over 1,200 local governments that represents the interests of local authorities within the United Nations and at international policy forums. *ICLEI* liaises with members to help them fulfill their commitment to reduce their CO2 emissions, facilitate exchanges of experience and convey the

message of the *Covenant*. *Local Governments for Sustainability* (*ICLEI,* 2011) noted that, before drafting its *SEAP*, the *Municipality of Burgas* (Bulgaria) recognised the positive aspects of participatory processes, with stakeholders in effectively identifying the energy needs of the region, and sought wide public involvement. *Burgas* aimed for their *SEAP* to serve not only the purposes of the municipal administration but to benefit society as a whole. To achieve this, citizens and stakeholders were invited to take part in the key stages of the *SEAP* elaboration process, which included building a vision, defining objectives and targets, and setting priorities.

**5.10** **TrIsCo (Transition Island Communities: Empowering Localities to Act)** (2011) was aimed at overcoming the barriers to involvement in facilitating low carbon energy futures communities (Farley & Goulden, 2011). With a focus on different 'islands' of communities (households, businesses and public organisations) the project strived to identify and understand what works best to bring people together and to encourage collective action to reduce CO2 emissions. *Trisco*, a joint venture between 6 organisations in 6 regions explored good practices for behaviour change, community engagement, energy efficiency and CO2 reduction across the project regions. This learning shaped the delivery of community engagement activities across the partnership.

**5.11** **ISLENET** (2012), a network of *European Island Authorities*, promotes sustainable and efficient energy and environmental management through the adoption of local energy saving strategies and renewable energy projects. Implicit within the process is a steady increase in the levels of awareness of island communities of the societal value of sustainable energy plans, green investments with the participation of local citizens and support and finance for sustainable energy projects.

**5.12** **Covenant capaCITY** (2011), co-funded by the *Intelligent Energy Europe Programme*, comprises capacity building of local governments to advance *Local Climate and Energy Action* – from planning to monitoring. The 3-year project, *Capacity Building of Local Governments to Advance Local Climate and Energy Action – from Planning to Action to Monitoring* runs until May 2014. The project attempts to help develop more sustainable energy communities across Europe by offering a European capacity-building programme for local governments to support all the phases of implementing a *Sustainable Energy Action Plan (SEAP).* Multi-stakeholder statutory and non-statutory and public involvement is a key element in this process.

**5.13** **Regions for Sustainable Change** (RSC) (2012) is a partnership of 12 organisations from eight EU member states. Through regional cooperation, the project aims at promoting an EU-wide shift to climate-friendly economies and seeks to identify opportunities for, and the costs and effects of, moving to a low-carbon economy. The focus of the project is to provide regions with the methodological means to move towards economies with minimal greenhouse gas emissions by integrating all aspects of the economy around technologies and practices with low emissions. The network promotes multi-stakeholder learning through the exchange of experience and sharing of results among partner organisations

**5.14** The European Commission **Plan D for Democracy, Dialogue and Debate** (CEC 2005) and **Debate Europe** involved 22 trans-national democratic designs with a deliberative element, sponsored by a range of different programmes including: *Citizenship Programmes; Plan D/Debate Europe; eParticipation Preparatory Action Programme; 6th and 7thFramework Programmes for Research and Technological Development of the EU, and Futurum*. In terms of energy-specific

involvement, *Ideal-EU* (funded under the 2008 *eParticipation programme*) engaged French, Italian and Spanish young people (14-30 years) in debates around energy policy, and through Town events and online forums (Smith, 2011).

**5.15**   The **Renewable Grid Initiative** (2011) comprised a multi-stakeholder pan-national Declaration signed by sets of organisations including: *BirdLife Europe, Deutsche Umwelthilfe, Friends of the Earth Europe, Friends of the Earth Scotland, Germanwatch, Global Nature Fund, Greenpeace Europe, Natuur en Milieu, the Royal Society for the Protection of Birds, WWF, Elia, National Grid, REE, RTE, Statnett, Swissgrid, TenneT, Terna, 50Hertz, Bellona Foundation, European Climate Foundation, Friends of the Supergrid, SEFEP, Zero*. The Declaration noted that: in order to achieve both of the urgent imperatives of climate change mitigation and nature conservation, joint working among stakeholders will be required. Perhaps unsurprisingly, they found that mutual trust among the stakeholders, constructive cooperation and application of innovative solutions can help to overcome challenges in case of conflicts of interests.

**5.16**   **Corporate Social Responsibility** (CSR) (2012), a European business and industry multi-stakeholder forum with energy futures as a key area, comprises an EC mediated platform for dialogue between employers, trade unions, business organisations, and civil society.

**5.17**   The **Smart Energy Dialogue** (Ecologic, 2010), a pan-EU and US forum on the transformation of energy and transport sectors, involved experts from industry, research and policy to discuss a roadmap towards energy security, energy efficiency and economic decarbonisation. The 2010 *Smart Energy Dialog* attempted to facilitate a platform where experts from industry and research had the opportunity to discuss current activities and issues with decision makers from both Europe and North America. The event jump-started two public dialogues on Smart Energy: one between research, industry and decision makers, and the other between Europe and North America.

**5.18**   The objective of the **Civil Society Platform on Sustainable Consumption and Production** (2010) project was to enhance the involvement of civil society organisations in sustainable consumption and production issues. The project suggested that, although participation of civil society is considered crucial for the implementation of ambitious sustainability strategies, many implementation programs and activities so far do not yet consistently involve stakeholders from this field - focusing more on business actors or researchers. The project attempted to give civil society organisations a space for identifying research needs and influencing political decisions on sustainable consumption and production. In addition to providing a space for discussion and participation, the project provided information on the relevance of instruments such as *EU Sustainable Development Strategy (SDS)* and the *EU SCP Action Plan* in order to make participation in these kinds of processes more accessible.

**5.19**   **European Nuclear Energy Forum** (ENEF) (2012) attempts to establish best practice in information transparency, initiating concrete structured stakeholder dialogues to broaden the discussion basis. Founded in 2007, ENEF attempts to involve stakeholders in the nuclear field: governments of the 27 EU Member States, European Institutions including the European Parliament and the European Economic and Social Committee, nuclear industry, electricity consumers and the civil society. Three working groups have been set up on: *Risks, Opportunities*, and *Transparency*.

**5.20**    The **IPPA (Implementing Public Participation Approaches in Radioactive Waste Disposal)** (2012) project is funded within the Seventh Euratom Research and Training Framework Programme (FP7) on Nuclear Energy of the European Commission. The project attempts to enhance the quality of decision-making processes in nuclear waste management, through emphasising awareness, fairness and trust. Other aims include: implementing processes of participation and transparency, involving stakeholders in a 'safe space', and the practical organisation of such spaces in national programmes and the exploration of how this can be achieved in a multi-national context (Andersson et al, 2012).

# 6. Recent relevant academic literature

**6.1   Andersson et al** (2010) set out the need for a distributed dialogue approach to complex issues, including climate change. The report argued that controversial complex policy problems cannot only be solved by central planning, since they demand potentially radical changes in lifestyles. As a result, they require ongoing and active participation of citizens.

**6.2   Ivner et al** (2010): presented a model for local involvement in energy planning and its application in a full-scale experiment in a Swedish municipality, including a combination of analytical and procedural tools intended to support decision making such as external scenarios, a citizens' panel, life cycle analysis and qualitative environmental assessment (EA).

**6.3   Kowalski et al** (2009) analysed the combined use of *Scenario Building* and *Participatory Multi Criteria Analysis (PCMA)* in the context of renewable energy futures. Five renewable energy scenarios for Austria for 2020 were appraised against 17 sustainability criteria. A similar process was undertaken on the local level, where four renewable energy scenarios were developed and evaluated against 15 criteria. On both levels, the scenario development consisted of two stages: an exploratory stage with stakeholder engagement and a modelling stage with forecasting-type scenarios. Thus, the scenarios consist of a narrative part (storyline) and a modelled quantitative part. The preferences of national and local energy stakeholders were included in the form of criteria weights derived from interviews and participatory group processes, respectively. The study concluded that although PMCA is resource intense, it encourages social learning, captures the context of technology deployment and allows for more robust and democratic decision making via the acknowledgement of uncertainties, and multiple legitimate perspectives.

**6.4   Discussing** UK nuclear energy consultation processes, **Stagl** (2006) notes that the complexity of the question and the urge for public involvement pose a challenge for decision support. However, *Scenario Building* and *Multicriteria Evaluation* can prove useful tools as they structure problem formulation, and make use of the best available information while enhancing transparency and facilitating deliberation.

**6.5   Almassy et al** (2011) analysed the carbon emissions-related aspects of the economies of three European regions: Cornwall (UK), Burgenland (Austria) and Marche (Italy). The in-depth macroeconomic analysis assessed the potential of carbon emissions reductions and the related costs and benefits for these regional economies. Critically, The study involved the broad participation of stakeholders, who played a key role in the project, including the development of several innovative tools including a *Risk Register*.

**6.6   Forbes et al** (2010) reviewed *World Resource Institute* (WRI) studies from the United States, the Netherlands, and Australia; suggesting that communities often have more concerns and questions about *carbon capture and storage (CCS)* than about more established industries and technologies. The engagement around any one project was contingent on the interactions of three primary groups: local decision makers (typically on behalf of those in the community), regulators, and project developers. Results underscore that effective community engagement should be measured by the success of the engagement process, and is not contingent upon agreement between the project developer, regulator, and community on outcomes.

**6.7**     In this context, findings from the **Brunsting et als** (2010) analysis of the development of public awareness of an onshore *CCS* demonstration project in Barendrecht (Netherlands) indicated that an important cause of lack of local acceptance in this project outcome was the absence of a cohesive and timely 'upstream' involvement strategy for discussing the project with local stakeholders as part of the formal decision-making process. The paper concludes with a list of recommendations for stakeholder involvement in future *CCS* processes.

**6.8**     **Mendoca et als** (2009) analysis of cases from Denmark and the United States concluded that rapid deployment of renewable technologies could be created through innovative democracy, bringing all interested actors into the decision-making process. They suggest that this equitable, participatory approach should be considered in conjunction with stable financial support schemes that allow diverse actors to engage with the market.

**6.9**     **Heiskanen et al** (2009) discussed the creation of lasting change in energy use patterns through improved user involvement, via the analysis of case studies in the UK, France Finland, Hungary, Germany, Latvia, Lithuania, Netherlands, Denmark, and Estonia. Results indicated a need for better involvement and understanding of end-users, suggesting that involving end-user target group may comprise a key issue for energy demand-side practitioners.

**6.10**     **Larsen et al** (2011) concluded that experiences from substantive national processes and international examples of structured dialogues of community engagement emphasise the importance of local and global forums and deliberative processes for community engagement. Key to this is the incorporation of stakeholders' perceptions of future options for low-carbon consumption of services and products.

**6.11**     **Grunwald** (2011) conceptualised energy futures as consisting of diverse sets of knowledge, assumptions, extrapolations and values. In this context, holistic meta-analysis about energy futures can inform and enlighten democratic debate and deliberation, contributing to a more transparent and rational debate. Orientation is provided by uncovering and unpacking sets of differing knowledge's, values, hopes, assumptions, cultures, and *zeitgeists* implicit in energy futures. Similarly, **Hoffman & High-Pippert** (2010) concluded that bottom-up, community-based initiatives play an important role in how communities interact with, and shape, energy systems.

**6.12**     **Devine-Wright et al** (2009) found evidence of substantial social consent, both for renewable energy generally, and little evidence to support the continued use of the *NIMBY* concept to explain why some people oppose project proposals. They concluded that rather than trying to dismiss and undermine legitimate questioning and criticism of particular renewable energy projects, industry and policy makers should instead focus on protecting and nurturing social consent for what is a key part of a low carbon future. They suggest that no simple formula will achieve this, as each place and context has distinctive characteristics - but their findings show the importance of factors such as enhancing local benefits, timely and meaningful engagement by developers, trust-building, and fair planning procedures.

**6.13**     The **Centre for Sustainable Energy** (2007) concluded that supporting effective engagement should be agnostic about outcomes, ensuring that decisions are as well-informed, evidence-based and timely as possible; and any development that is permitted reflects an understanding of local interests and opportunities for positive local gain. Within the English planning system, *Local Planning*

*Authorities (LPAs)* are now required to embed these principles within their own *Statements of Community Involvement (SCI).* These *SCIs* describe how *LPAs* will engage with local communities within their areas in relation to planning policy. *SCIs* also provide general guidance to developers on the public engagement - or community involvement - which they are encouraged (but cannot be required) to undertake, especially for significant applications.

**6.14** The **ORC International Report for the Civil Society Institute** (2012) concluded that there is no major partisan divide among Americans on clean energy policy issues. Research data reflected largely bipartisan agreement in terms of both concerns about key issues and also favoured courses of action: More than eight out of 10 Americans (83 %) - including 69 % of Republicans, 84 % of Independents, and 95 % of Democrats - agree with the following statement: The time is now for a new, grassroots-driven politics to realize a renewable energy future. Congress is debating large public investments in energy and we need to take action to ensure that our taxpayer dollars support renewable energy - one that protects public health, promotes energy independence and the economic well being of all Americans.

**6.15** **Burall & Shahrokh** (2010) considered what citizens who participate in public dialogue events have said about public engagement and how it can – and should – be incorporated into governance structures. They identified a number of key insights from these citizen views, showing how public engagement in national decision making can support moves towards a more open, transparent and accountable way of governing. The evidence reviewed suggests that inviting members of the public into structured spaces for holding dialogue around complex and technical policy issues is an important contribution to a more transparent and open way of governing - demonstrating that members of the public have the ability to engage with and contemplate large quantities of complex information, and provide detailed responses that enhance governmental decisions. They concluded that, holding dialogue on difficult and controversial issues with the public in 'invited' spaces is a fundamental enabler for decision makers to feel confident in the public's ability to hold the Government to account.

**6.16** **Prikken et al** (2011) argued there is clear evidence that engaging people in a meaningful way has the potential to change attitudes and behaviours towards tackling climate change. In this way, public engagement can complement legislative changes that force change, as well as the government's agenda of 'nudge': only by involving the public in decision making and in the design of projects will the government be able to bring about the changes in public attitudes and behaviour of the scale that is required.

**6.17** **Dorfman et al** (2011) evolved a set of parameters to enable community participatory processes, including: well-informed and adequately resourced involvement, and a proportionate connection between participatory civic involvement and representative decision-making processes. Effective involvement results from a holistic set of pre-conditions, working best when informal non-statutory civil society networks are empowered to interact with formal statutory networks. This process works well when it is adequately resourced and is carried out over an appropriate time frame.

## 7. What does this mean for energy sector involvement?

**7.1** The sheer weight of statutory, citizen, and stakeholder civil society involvement in EU energy futures dialogues documented in the review evidences the key importance of this trend. Review of the academic literature supports this conclusion, and also the significance of the role of multi-stakeholder involvement in energy futures in the context of ramping climate change.

**7.2** In general, this review of recent elements of both practical and theoretical involvement literature confirms the importance of acknowledging and embracing difference, the significance of methodological agnosticism concerning outcomes, the core role of trust-building within dialogue processes, the need to understand the difference between engaging the public as *citizens* (rather than as *civil society* or *stakeholders*), and the benefit of appropriately relating participatory democrat initiatives to formal representative decision-making structures.

**7.3** The review findings suggest that the role of public dialogue, and the participatory practices that enable it, are core to the building of mutual understanding between energy futures stakeholders. Although achieving change to low carbon energy futures at the pace and scale required will not be straightforward, public values and attitudes concerning demand-side, supply-side and infrastructure implications will play a critical role. These developments may vary in their acceptability to differing sections of the public, and interest groups, including the energy supply industry. Although, perhaps encouragingly, some cases suggest a surprising degree of consensus among those involved in energy futures dialogue.

**7.4** Existing research on public involvement has addressed the acceptability of some individual energy technologies, and at particular spatial and governance levels - but there may be a need to understand involvement in the context of EU state energy systems as a whole, exploring the choices and trade-offs. The broad area of concern is the role of public values and attitudes in enabling or inhibiting energy system change.

**7.5** In this context, across the EU new kinds of collaborative action are emerging, comprising multi-sector networks that cut across the divisions of responsibility between differing levels of government, (local, regional, and national), differing spheres of society (public, private, voluntary and the informal community), and differing localities (locales, regions and countries). This represents a new formulation of distributed governance based on shared public values. The goal seems to be about building a shared understanding of sustainable energy futures based on the open exchange of diverse perspectives, through generating a modelled social contract around energy systems via public involvement and critical reflection. Here, for complex systems with multiple goals, inclusive energy policy networks (comprising a broad range of diverse public and statutory stakeholders) may prove more able to manage the leveraging of technological change (for new or contested technologies). The concept of co-production (the simultaneous production of knowledge and social order) provides a satisfying conceptual framework for understanding this dynamic, a feature of which is an enhancement of the degree of both democratic legitimacy and consequential efficiency of social decision-making procedures - the main normative and substantive rationales for public participation.

**7.6** Given the size of the long-term investments that are now needed across the options of renewables, energy efficiency and conservation, grid network infrastructure development and load

balancing, carbon based fuels and nuclear; evidence from the review clearly suggests that European publics are already playing a key role in taking these critical, social, environmental and economic decisions. If carried out in a truly involving way, the integration of public, policy, and expert knowledge seems to allow for greater accountability, transparency, with the hope of better take-up of necessary change and improved long-term likelihood of problem resolution.

**7.7** Whilst the review has documented sets of emerging forms of energy futures participation at local, city, regional, national, and pan-EU levels, there may be a real practical need to channel this diffuse involvement and expertise in order to focus existing energy involvement capacity. Although the energy and cultural landscapes of EU states differ - European energy policy offers a fairly open and flexible framework in which member states can develop constructive collective action on civil society involvement in energy futures.

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# Appendix II.    Involvement in energy sector transition

The following Table distills the learning from our Literature Review.

| Project | Level | Aim | Method | Outcome |
|---|---|---|---|---|
| Dialogue with the City, 21st Century Dialogue, 2003, Australia | Local | To start with a broad scale goal, then to implement at the local level, with local communities determining how best to achieve change. | Involved citizens juries, deliberative surveys, town dialogues, Multi Criteria Analysis, community survey, interactive web site to inform a community Network City plan. | Resulted in Network City plan implementation by Central Government. Further community engagement implemented the plan locally. |
| Transition Network, 2012, UK | Local | To support community-led responses to climate change and shrinking supplies of cheap energy. | Groups adapt Transition Network Model to their local circumstances and start up practical projects an Energy Descent Plans. | Resulted in the Transition Network model being substantially mobilised across the UK and across 35 other countries. |
| Community Energy Challenge, 2012, UK | Local | To practically support renewable energy community development projects. | Involved enterprise development, mentoring, technical advice and community facilitation. | Resulted in local co-operative renewable energy projects at a significant economic scale. |
| Low Carbon Communities Challenge, 2009, UK | Local | To design public engagement and co-inquiry programmes to inform policy development and delivery. | Involved a research and delivery programme to provide financial and advisory support to 20 'test-bed' low carbon energy communities. | Resulted in carbon emissions reduction for the 'test-bed' communities. |

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| Big Energy Shift, 2009, UK | Local | To establish the basis on which the public would be prepared to take up renewable energy generation and energy conservation. | Involved 270 householders from nine communities who provided views on community-level carbon and energy savings, followed by a central Forum with householders and policy makers. | Resulted in improved energy efficiency by householders. This initiative, part of the Low Carbon Transition Plan provided further funding to the communities involved. |
| Big Green Challenge, 2012, UK | Local | To stimulate and support community-led responses to climate change with a £1 million prize. | Involves communities taking control of their own energy supply and efficiency performance. | Resulted in local reductions in CO2 emissions of between 10-32 % in just one year. |
| Local Involvement Networks (LINKs), 2008, UK | Local | To enable local communities to influence local health and social care services. LINKs were underpinned by UK primary legislation | Facilitated network of sets of community networks, bringing together diverse groups of statutory and non-statutory stakeholders. | Resulted in a stronger 'voice' for local people in the planning, design or redesign, commissioning, and provision of local health and social care services. |
| Local Climate Change Visioning Project, 2010, Canada | Local | To provide a participatory, scenario-based to enable local community, decision makers, scientists and planners to review climate change impacts and develop local policy responses. | Involved 3D visualization techniques and Geographic Information Systems (GIS) mapping. | Resulted in a conceptual framework of coherent energy and climate change mitigation scenarios at the local scale. |

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|---|---|---|---|---|
| Alberta Climate Dialogue, 2008, Canada | Regional | To make recommendations to municipal and provincial governments on climate change, conserving and using energy efficiently and CCS. | Involved citizens and civic leaders from municipalities, industries, environmental groups and provincial government departments. | Resulted in emissions reduction targets that reflected Alberta's position as a significant oil and gas energy supplier, while maintaining a commitment to economic growth. |
| Clean Energy Resource Team (CERT), 2012, USA | Regional | To form inclusive regional CERTS in order to develop energy plans. | Six regional CERT teams were created involving cities and counties, farmers, landowners, industry, utilities, colleges, universities and local governments. | Resulted in a Strategic Vision and a renewable and energy conservation Energy Plan for each region |
| ARTEMIS, 2006, Sweden | Regional | To develop new participation scenario tools. | Involved citizens panels, workshops, visioning process, actions and strategies to inform an Energy Plan. | Resulted in an Energy Plan implementation by statutory authorities. |
| Future Danish Energy System, 2007, Denmark | National | To involve energy sector stakeholders to review the development of the Danish Energy system. | A Future Panel was created, supported by a steering committee with energy sector experts, a task force group, and the Danish Board of Technology. | Resulted in input to the Danish Parliament on a new Energy Strategy. |
| 'Plan N', 2010, Germany | National | To develop strategies aimed at achieving greater public acceptance for grid upgrade and expansion | Involved multi-stakeholders from trade associations, action groups, public authorities, environmentalists, transmission system operators, industry, companies and scientists. | Given the complex and contested nature of the topic, the dialogue did not agree on all points, but provided three levels of outputs. |

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|---|---|---|---|---|
| German Council for Sustainable Development (RNE), 2012, Germany | National | To provide advice to the German Federal Government. | Multi stakeholder body comprising 15 centrally appointed members. | Resulted in concrete advise to the German Federal Government on the Energiewende (energy transformation). |
| Public Acceptance of Renewable Energies at the Regional Level, 2007, Germany | National | To elaborate policy recommendations on how to increase public acceptance of, and support for, renewable energies. | Involved five multi-stakeholder 'Future Lab' dialogues with representatives from local authorities, NGOs, science, business and other stakeholders. | Resulted in policy recommendations on how to capacity-build better public understanding of renewable technologies. |
| ENCI LOWCARB, 2012, Germany | National | To develop sophisticated low carbon scenarios for Germany and France based on stakeholder and expert interaction. | Energy scenarios outlined low-carbon futures built around assumptions on fossil fuel price evolution, technological choices, and energy demand and supply. | The central position of stakeholders in scenario building allowed the integration of the degree of acceptance for specific energy policy measures or technology decisions. |
| Spanish Energy Mix Forum, 2012, Spain | National | To develop a structured national discussion on differing low carbon energy sources in Spain. | Involves 'up-stream' participation of a very broad range of energy sector stakeholders. | The Forum is piloting the EESC concept of multi-stakeholder national energy mix forums. |
| 2050 Public Energy Dialogue, 2011, UK | National | To develop accessible ways to enable experts and the public to understand the scale of the challenge, explore and test preferred options. | Involved three deliberative dialogue workshops with local councillors, elected representatives, business representatives and the third sector. | Resulted in online tools to engage the public, third sector, elected and business representatives about low-carbon energy choices. |

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| Consultation on the Future of Nuclear Power, 2007, UK | National | To seek public views on whether the private sector should be allowed to build new nuclear power stations in the UK | Involved written responses, published documents, a web site, twelve regional meetings and nine public Talking Energy: The Future of Nuclear Power citizen deliberative events. | Resulted in UK Govt. interpretation that the UK public had given provisional public acceptance of private sector new nuclear build. |
| Submarine Dismantling Project, 2012, UK | National | To seek public views on the dismantling of UK's decommissioned nuclear powered submarines. | The 3-month public consultation involved nine local and two national consultation events. Ongoing multi-stakeholder groups provided upstream challenge and advice. | The Consultation has ended, the UK Ministry of Defense is considering public consultation responses, and a decision is imminent. |
| Canada's World, 2010, Canada | National | To develop collaborative initiatives to involve citizens, organisations, individuals, businesses and institutions. | The 3-year citizen initiated collaborative project between 15 universities and 40 organisations, comprised deliberative dialogue events in each province. | Resulted in the delivery of a national dialogue process to formulate sets of policy options. |
| Science & Technology Engagement Pathways, 2011, Australia | National | To provide guidelines for community engagement to inform decision making about science and technology | Multi-stakeholder engagement process. | Resulted in a 'Framework' to evaluate and improve its community engagement activities. |

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|---|---|---|---|---|
| Sustainable NOW, 2012 | Pan EU | To facilitate pan EU community low-carbon energy solutions, and identify opportunities for change at political, administrative, economic, social and environmental levels. | Involves capacity building with local governments, 'frontrunner' communities, peer-to-peer exchanges, study visits, capacity development workshops, and staff trainee programmes. | Resulted in energy guidance packages with instruments to support Local Energy Action Plan (LEAP) implementation. |
| Green and Blue Space Adaptation for Urban Areas and Eco Towns (GRaBS), 2012 | Pan EU | To explore climate change challenges to urban environments and their communities, and involve communities in developing and implementing adaptation plans. | Multi-stakeholder involvement case studies. | Resulted in communities developing and implementing local climate change adaptation plans. |
| EUROCITIES, 2012 | Pan EU | To share knowledge through six forums, a range of working groups, projects, activities and events. | Involves a network of elected local and municipal governments of major European cities. | Reinforced local community influence within EU institutions. |
| Energy Cities, 2012 | Pan EU | To represents 1,000 towns and cities in 30 countries, local energy management agencies, municipal companies and groups of municipalities. | Involves 200 local authorities as members of Energy Cities, forming a network that extends over 26 European countries. | The network has published 30 Energy Cities' proposals for the energy transition of cities and towns, a contribution to Rio + 20. |
| PEPESEC, 2010 | Pan EU | To supported the emergence of European sustainable energy communities | Multi-stakeholder involvement of citizens, decision makers, and energy sector stakeholders. | Resulted in increased use of local community planning for the supply and distribution of renewable energy sources and demand-side management. |

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|---|---|---|---|---|
| Covenant of Mayors, 2012 | Pan EU | To facilitate energy efficiency and renewable energy 'best practice'. | A mainstream European movement involving local and regional authorities. | Resulted in Sustainable Energy Action Plans, which define emissions targets, together with time frames and responsibilities. |
| ENGAGE, 2012 | Pan EU | A pan-European Covenant of Mayors initiative to engage local citizens and stakeholders on sustainable energy futures. | The project supports collaboration between local administrations, stakeholders and citizens. | Resulted in 12 cities from 12 European countries facilitating 'grass roots' civic participation and municipal department involvement. |
| ICLEI, 2012 | Pan EU | To help ICLEI members reduce their CO2 emissions, facilitate exchanges of experience and convey the message of the Covenant of Mayors. | Involves an association of 1,200 local governments, representing the interests of local authorities within the United Nations and international policy forums. | Resulted in stakeholder and public involvement in Sustainability Energy Plan (SEAP) development. |
| IMAGINE, 2010 | Pan EU | To create, share and discuss future-oriented approaches to urban sustainability oriented approaches to urban sustainability | Involved a wide range of energy sector actors with direct or indirect influence at the local and urban levels. | Resulted in a network of partners from the public, private and community sectors around Energy Cities. |
| TrIsCo, 2011 | Pan EU | To facilitate low carbon energy futures in island communities. | 6 organisations in 6 regions explored good practice community engagement, energy efficiency and CO2 reduction | Resulted in the low carbon community engagement across island communities. |

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| ISLENET, 2012 | Pan EU | To promote sustainable energy and environmental management through local energy saving strategies and renewable energy projects. | Involved a network of European Island Authorities comprising local communities and citizens. | Resulted in sustainable energy plans, green investments with the participation of local citizens and support and finance for sustainable energy projects. |
| Covenant Capacity, 2011 | Pan EU | To capacity build local government Local Climate and Energy Action – from planning to monitoring. | A multi-stakeholder and public involvement process. | Resulted in the development of more sustainable energy communities by capacity-building local government Energy Action Plan implementation. |
| Regions for Sustainable Change, 2012 | Pan EU | To promote an EU-wide shift to a low-carbon economy through regional cooperation. | A partnership of 12 organisations from 8 EU states promoting multi-stakeholder learning. | Resulted in the exchange of experience and results among partner organisations. |
| Plan D for Democracy, Dialogue and Debate, 2005 | Pan EU | To encourage pan European dialogue | In terms of energy-specific involvement, Ideal-EU (funded under the 2008 eParticipation programme) engaged French, Italian and Spanish young people in energy policy dialogue through Town events and online forums. | Resulted in 22 trans-national democratic designs with a deliberative element, sponsored by a range of different European programmes. |

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| Renewable Grid Initiative, 2011 | Pan EU | To establish joint working among stakeholders in order to achieve the urgent imperatives of climate change mitigation and nature conservation. | A pan European multi-stakeholder process involving a very large set of climate, energy, environmental and nature conservation civil society organisations. | Resulted in a pan-national Declaration signed by sets of organisations. |
| Corporate Social Responsibility, Europe, 2012 | Pan EU | To encourage dialogue between employers, trade unions, business organisations, and civil society. | An EC mediated European business network of 70 multinational corporations and 33 national partner organisations. | Informed EC Policy, which states that enterprises "should… integrate social, environmental, ethical and human rights concerns into their business operations and core strategy in close collaboration with their stakeholders". |
| Smart Energy Dialogue, 2010 | Pan EU | A pan-EU and US forum to help transform energy and transport sectors | Involved experts from industry, research and policy to discuss a roadmap towards energy security, energy efficiency and economic decarbonisation. | 'Jump-started' two public dialogues on Smart Energy: one between research, industry and decision makers, and the other between Europe and North America. |
| IPPA, 2012 | Pan EU | To enhance the quality of decision-making processes in nuclear waste management, through public involvement. | Involved a broad range of Czech nuclear waste management stakeholders in an 'upstream' Reference Group and a public hearing. | IPPA Public involvement is ongoing in five radioactive waste management programmes in Czech Republic, Poland, Slovakia, Romania and Slovenia. |

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| European Nuclear Energy Forum, 2012 | Pan EU | To establish best practice in information transparency, initiating concrete structured stakeholder dialogues. | Involves nuclear stakeholders, including EU Member States, European Institutions including the European Parliament and the EESC, nuclear industry, electricity consumers and an element of civil society. | Three working groups have been set up on: Risks, Opportunities, and Transparency. |
| Civil Society Platform on Sustainable Consumption and Production, 2010 | Pan EU | To enhance the involvement of civil society organisations in sustainable consumption and production. | Attempted to give civil society organisations a space for identifying research needs and influencing political decisions on sustainable consumption and production. | Provided input to the EU Sustainable Development Strategy (SDS) and the EU SCP Action Plan in order to make participation in these kinds of processes more accessible. |

# Appendix III. Examples of energy sector stakeholders

A very simple outline of those who could involve might comprise the following set of stakeholders, and communities of geography and interest, including business and industry non-governmental organisations (BINGOs); academic institutions, environmental non-governmental organisations (ENGOs); Community based organisations (CBOs); local government and municipal authorities (LGMAs); research and independent non-governmental organisations (RINGOs); trade union non-governmental organisations (TUNGOs); youth non-governmental organisations (YOUNGOs); government departments, regulators, policy and decision makers.

Given the remit of this study is to draw out broad recommendations rather than identify specific energy sector stakeholders, we have only superficially explored examples of a possible range of stakeholders at pan-EU and at national (UK) levels.

## 1. Example of pan-European energy sector stakeholders

| Pan-European Associations and Agencies | Energy Regulators Regional Association (ERRA) |
|---|---|
| | ENTSO-E (European Network of Transmission System Operators for Electricity) |
| | EUROGAS |
| | Eurelectric |
| | EUROPIA - European Petroleum Industry Association |
| | European Association of Energy Service Companies (eu.ESCO) |
| | European Biomass Industry Association |
| | European Photovoltaic Industry Association |
| | European Renewable Energy Council (EREC) |
| | European Wind Energy Association (EWEA) |
| | European Solar Thermal Industry Federation (ESTIF) |
| | European Independent Distribution Companies of gas and electricity |
| | European Association for the promotion of Cogeneration |
| | European Council for an Energy Efficient Economy |
| | EU Corporate Leaders' Group on Climate Change |
| | European Insulation Manufacturers Association |
| | European Alliance of Companies for Energy Efficiency in Buildings (EuroACE) |

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| | European Environmental Bureau |
| | ManagEnergy (EU local and regional energy agencies) |
| | Renewable Energy & Energy Efficiency Partnership (REEEP) |
| | European Association of Energy Service Companies (eu.ESCO) |
| | Energy Community Secretariat |
| | Energy Charter |
| | European Trade Union Confederation |
| | European Federation of Regional Energy and Environment Agencies |
| Pan-European NGOs | Climate Action Network Europe |
| | Greenpeace International |
| | Friends of the Earth Europe |
| | INFORSE-Europe |
| | Smart Energy for Europe Platform |
| | European federation of Green NGOs European Environmental Bureau |
| | Women in Europe for a Common Future |
| | Health and Environment Alliance Network |
| | European Federation for Transport and Environment |
| | European Climate Foundation |
| | The Climate Group |
| Pan-European Research Institutes | European Energy Research Alliance |
| | European Institute for Energy Research. |
| | The Institute of Energy of South East Europe (IENE) |
| | European Energy Institute |
| | European Platform of Universities Engaged in Energy Research |
| | The Institute for Energy and Transport |
| | EUREC Agency |
| | The European Academy of Wind Energy |

## 2.    Example of UK energy sector stakeholders

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| Energy Associations | Energy Retail Association (ERA) |
| | Energy UK |
| | Energy Networks Association (ENA) |
| | Energy Research Partnership (ERP) |
| | Renewable UK |
| | AEP Energy |
| | Association for the Conservation of Energy (ACE) |
| | British Energy Efficiency Federation |
| Academic Research Institutes | UK Energy Research Council (UKERC) |
| | Tyndall Centre |
| | University College London Energy Institute |
| | Global Energy Group, University of Warwick |
| | Low Carbon Innovation Centre, University of East Anglia |
| | Lower Carbon Futures, Environmental Change Institute, University of Oxford |
| | Sussex Energy Group, University of Sussex. |
| Financial Community | Institutional Investors |
| | Financial Analysts |
| | Financial Media |
| | Private Investors |
| Local Communities and Community Based Organisations (CBOs) | Local Pressure Groups |
| | Residential Neighbours |
| | Local Opinion Formers |
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| Regulators | Office of the Gas and Electricity Markets (Ofgem) |
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| | Department for Energy and Climate Change (DECC) |
| | Department for the Environment, Food and Rural Affairs (DEFRA) |
| | Environment Agency (EA) |
| | Health and Safety Executive (HSE) |
| Policy | Energy Ministers |
| | Select Committee Members |
| | Members of Parliament (MPs) |
| | Members of Scottish Parliament |
| | Members of Welsh Assembly |
| | Members of Local Authorities |
| NGOs | Greenpeace |
| | Friends of the Earth (FoE) |
| | Energy Saving Trust |
| | Energy Intensive Users Group (EIUG) |
| | Major Energy Users' Council (MEUC) |
| | Green Alliance |
| | Carbon Trust |