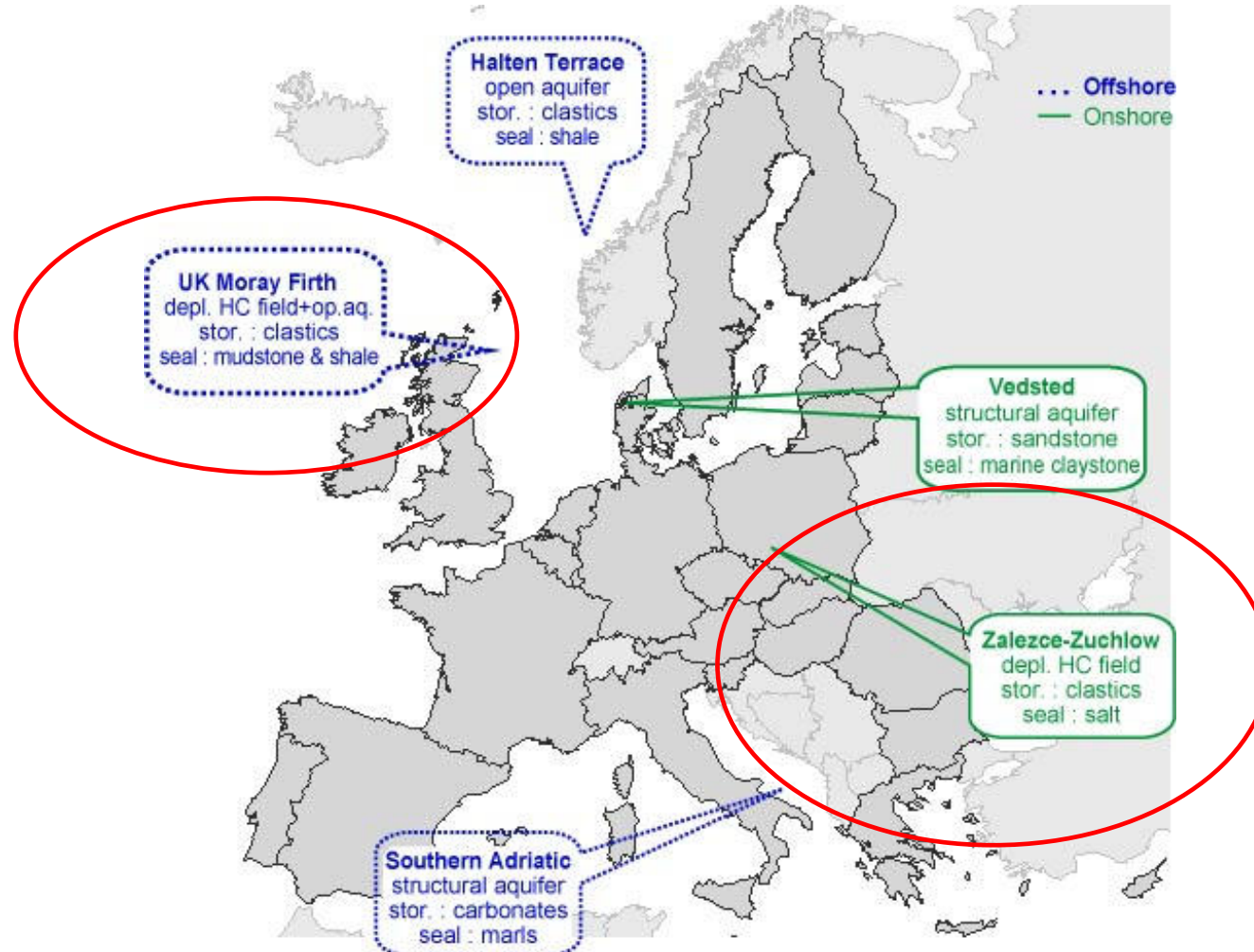




Social Site Characterisation of Potential CCS Sites in Poland and the UK

Suzanne Brunsting (ECN)

SiteChar – Social Site Characterization



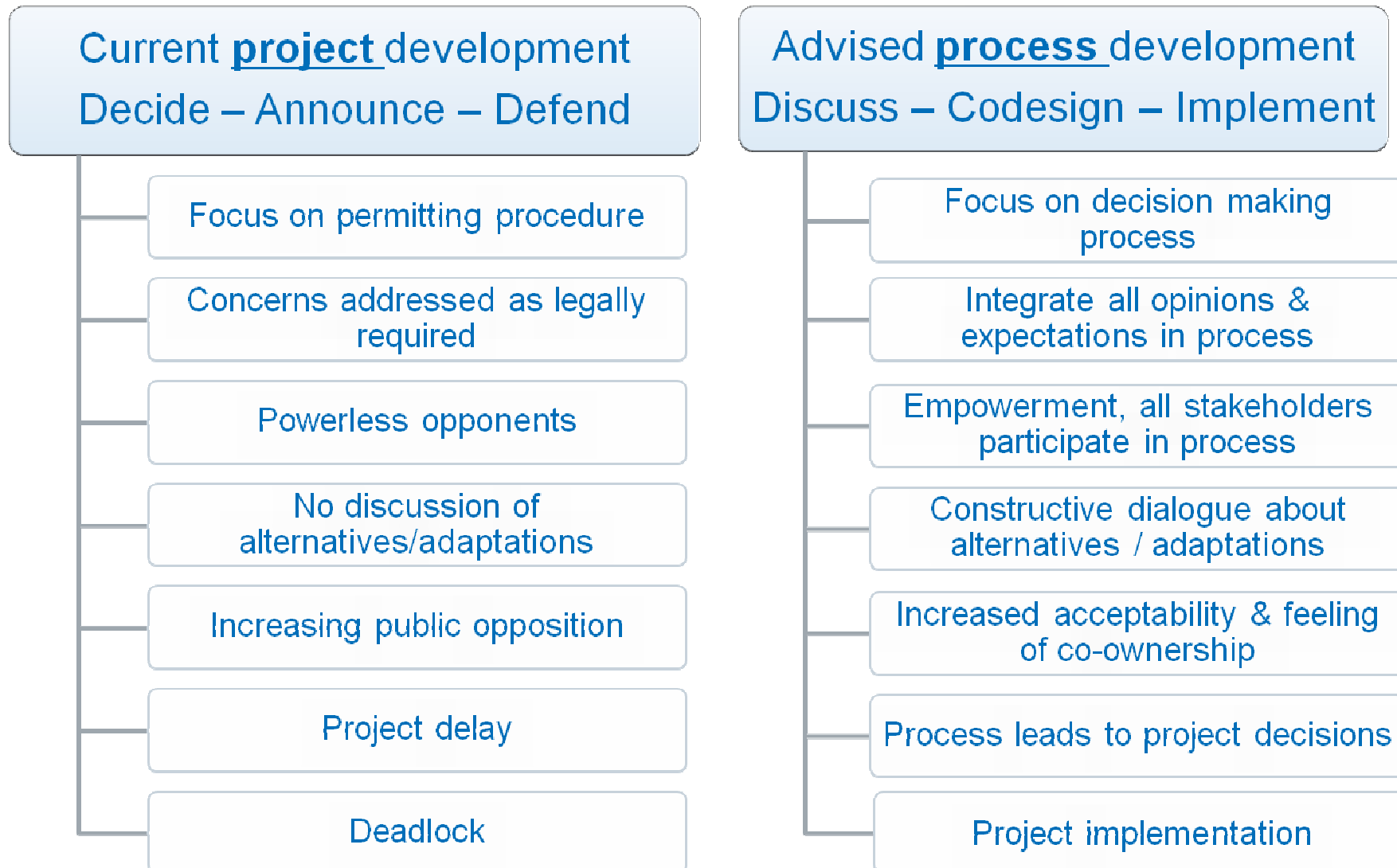


SiteChar – Social Site Characterization

- **Objective: To advance public awareness and enable informed opinion formation on CCS**
- **Multidisciplinary research team**
 - **IFPEN - consortium leader**
 - **ECN - work package leader**
 - **UfU - independent institute for environmental issues**
 - **SCCS (subcontracted for UK research)**
 - **Scottish Government**
 - **PGNiG - Polish gas company**
 - **AGH - Polish university**



Background: Project → Process



Successful deployment of any type of energy transition technology requires...



Generally:

- Facilitating policy instruments
- Context of climate change and energy transition

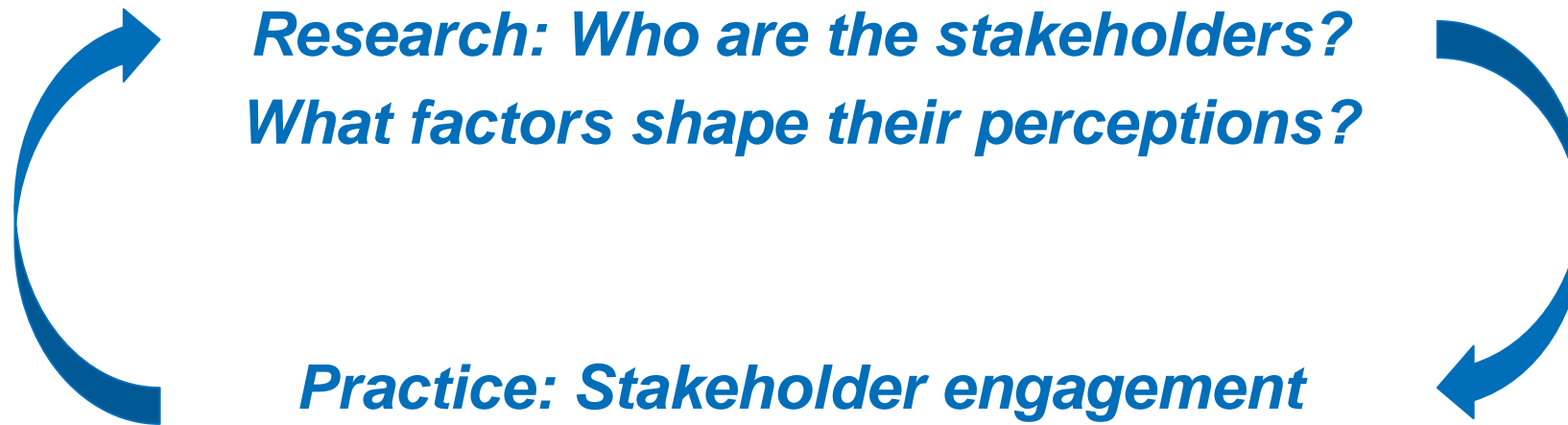
Locally: Perceived fairness in decision making

- Early involvement
- Identify/Involve all relevant stakeholders
- Negotiate conditions for acceptability
- Identify cost-benefit sharing mechanisms
- Create trust in actors/information sources
- Fit information to needs of target groups



Social Site Characterization

- Instrument to plan and evaluate an approach for constructive stakeholder engagement
- Parallel activity to technical site characterisation
- Ideally informs ‘actual’ stakeholder engagement:





WP8 overview

- **Create a ‘social map’ of stakeholder opinions and opinion shapers**
 - Issues affecting local well-being
 - Awareness, knowledge, perceptions of CCS
 - Trusted media, institutions, public representatives
- **Create a ‘hinge’ to actual stakeholder engagement**
 - Focus conferences
 - Information meetings
 - Public information on SiteChar website
- **Monitor changes and compare results**
 - Repeated survey



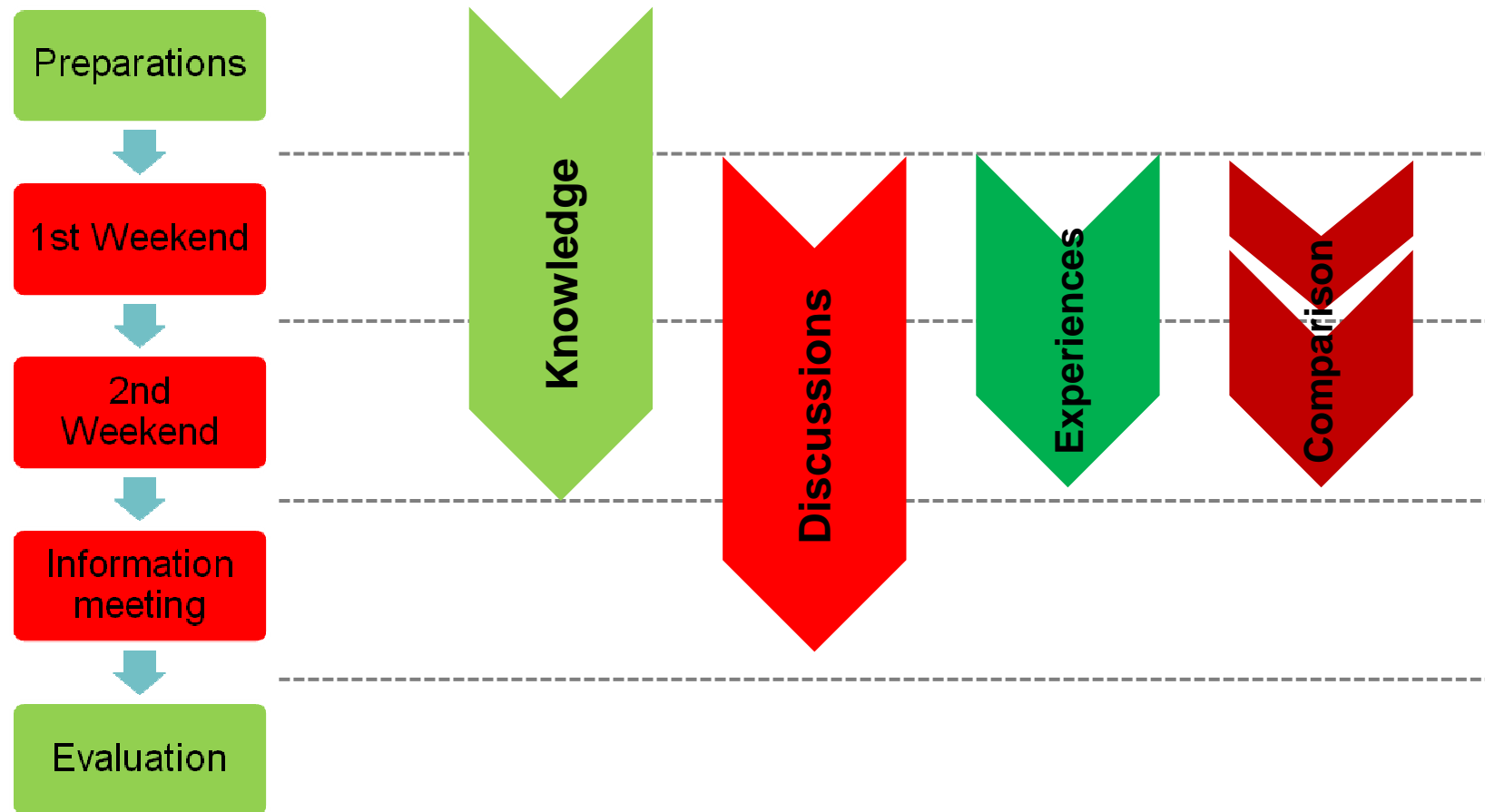
Presentation overview

- **Creating a ‘hinge’ to real-life application**
 - Focus conferences
 - Results from Scotland
- **Monitoring changes and comparing results**
 - Repeated survey
 - Results from Scotland
- **Conclusions**



The hinge: Focus Conferences (UfU)

Focus Conferences - method





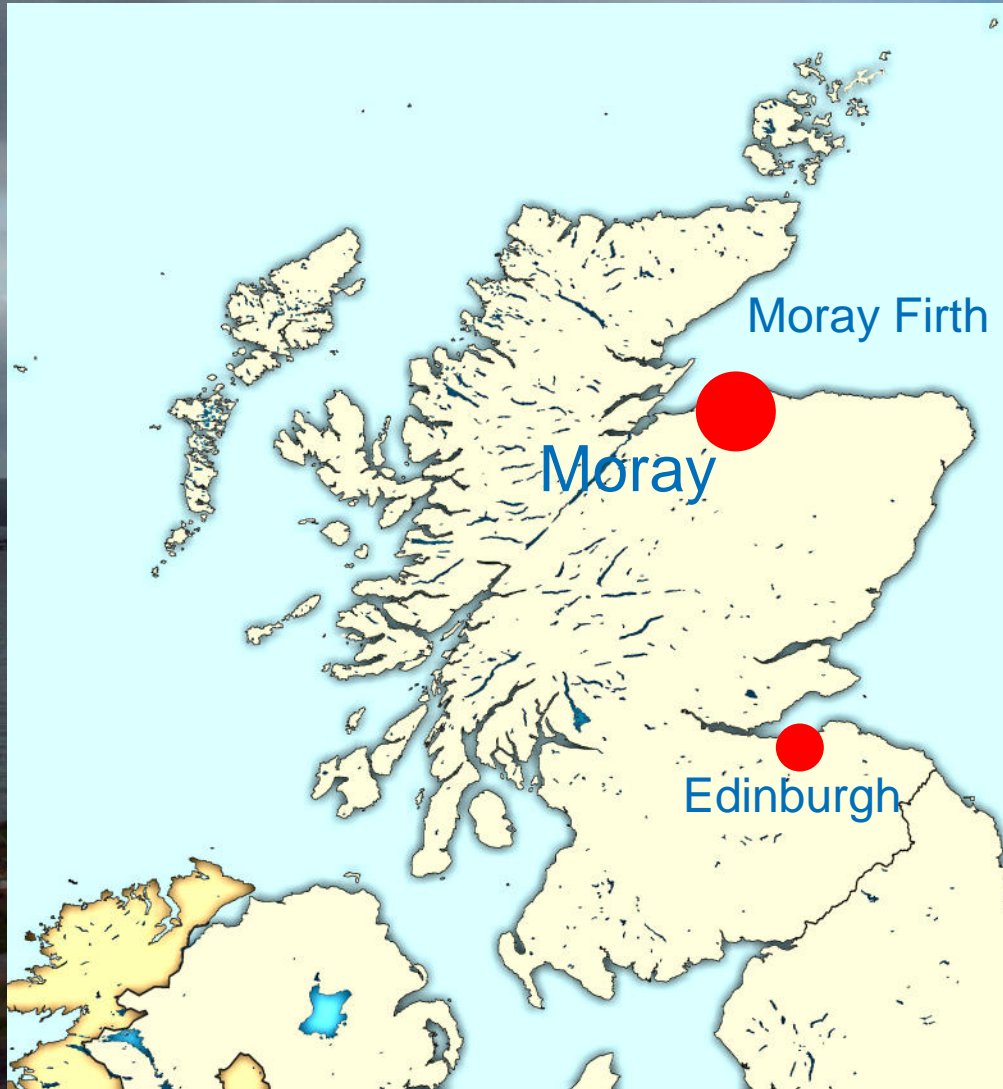
Focus Conferences - method

- **Preparations**
 - Recruitment of 16 lay people from the community
 - Invitation of experts
 - Preparing and providing information materials
- **First Weekend**
 - Expert presentations, experiments with CO₂
 - Small group and plenary discussions
- **Second Weekend**
 - Deepening discussions, role playing
 - Writing positioning paper
- **Information meeting**
 - Presenting positioning paper



Focus Conferences: Results for Scotland

Moray



- Oil and gas
- Fishing
- Rich marine biodiversity - dolphins
- Major army/air force bases
- Whisky!
- Renewables?

The Participants



Expert presentations...





...informal discussion...



...and writing into the night

Moray positioning paper: key points

- **Something has to be done to mitigate climate change - doing nothing not an option**
- **Could the money required to develop CCS be better spent on renewable energy?**
- **CCS should be part of a suite of climate change mitigation technologies**
- **More information needed before deciding for or against CCS - and expectation that governments will clearly state position and inform publics.**

Background context to the Focus Conference

It has been envisaged that CCS demonstration projects would be in place by around 2015, with lead rollout around 2020 and global deployment around 2025 (see figure 1). It is important to note, however, that technical, political and social challenges – not to mention a tough economic climate – mean these targets are unlikely to be met.

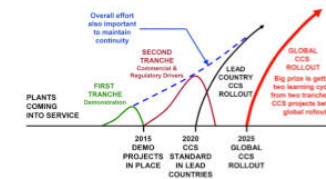


Figure 1: Timeline for anticipated CCS rollout (Source: Gibbins and Chalmers, 2008).¹

This timeline, and indeed the timelines for all forms of low-carbon energy, relate to the targets set by governments in order to avoid catastrophic climate change. For instance, the 2009 Copenhagen Accord agrees on the goal of limiting warming to two degrees Celsius globally, and it is widely acknowledged that deep cuts in anthropogenic CO₂ emissions will be required to achieve this. Scotland has set itself the target of a 42% reduction in greenhouse gas emissions by 2020 (relative to 1990 levels), and also that of producing 80% of its required energy from renewable sources by 2020.

er of the technology, through a simple n or pollutant, but as raw material and removal but of recycle.

to CO₂ awareness for integration into artificial research, development and auction technologies.

Usage of renewable forms of energy, i to the usage/conversion of CO₂ into fuels/chemicals, building materials, amenity/arboretum schemes, large projects and technologies, carbon emissions to point of initial sale

Box 1: A Short History of Social Science Research on CCS

Social science research on CCS has been going on for nearly ten years now, starting with early studies into the general potential of the technology carried out by the Tyndall Centre in Manchester. As the technology develops and demonstration projects get nearer to rolling out, more social science work has been done. This has taken several forms including surveys and questionnaires (for instance in Holland and Japan), interviews with developers (Italy, UK), and discussion groups among members of the public (Australia, USA).

Iterative uses for CO₂

ut 115 - 120 million tons of CO₂ each year as a raw material to manufacture other chemicals and products ranging from Aspirin through to fertilisers.

Although a significant increase in usage for this purpose may be viewed as slight against a global CO₂ emission total of an estimated 30 billion tons annually, any technology utilising CO₂ must receive serious consideration.

Construction industries – contribute about 10% world CO₂ emissions

Currently the building industries contribute around 10% of the world's annual CO₂ production (9 billion tonnes). Most of this is as a result of the production of cheap cement based concrete to be used in roads and buildings.

If we were to change the chemical composition of the concrete and use magnesium instead of Portland cement, then this simple act would not only reduce significantly the level of CO₂ production in manufacturing but also continue to leach CO₂ out of the atmosphere locking it into the concrete for many thousand of years.

For every ton of cement made we would be sequestering half a ton of CO₂.

Most power stations burn coal, oil or natural gas to produce the heat necessary to generate electricity releasing both the CO₂ and surplus heat to the atmosphere. If these gases were passed through seawater then it is possible to use up to 90% of the extracted CO₂ in the production of cement.

By incentivising this process it may encourage this 'second stage' of the energy process to be developed thus reducing global CO₂ production levels by 6bn tonnes per year.

Public communication and dialogue to the wider exhibitions, public talks, etc with the Climate Change Committee of the group and MSPs and officials.

References

Preparing for global rollout: a 'developed country' rapid CCS deployment' *Energy Policy* 36: 501-507

Giffilan, S. (2012) 'Fuelling the future with carbon capture and storage – Can black be green?', Presentation to SiteChar Moray Focus Conference, March 30, 2012

Hammond, J. and Shackley, S. (2010). Towards a public communication and engagement strategy for carbon dioxide capture and storage projects in Scotland, www.sccs.org.uk/publications.html

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Reflections on the process

- **Managing expectations - what can a paper like this realistically hope to achieve?**
- **‘This is a done deal, isn’t it?’ How does the nature of information presented make participants feel about CCS?**
- **Importance of facilitators seen as ‘independent’ in encouraging participants to talk freely.**





The Social Map: Repeated Surveys (ECN)



Survey method

- Telephone interviews on ‘local area satisfaction’
- Representative community samples
- Special techniques to overcome problems:
 - Waking up ‘sleeping dogs’
 - Disregard local context of opinion development
 - Overreporting awareness, knowledge etc.
 - Social desirability
 - Group dynamics
- Measure I: May 2011, 850 respondents
 - In-between: Focus Conferences and Information Meetings
- Measure II: September 2012, 864 respondents





Survey: Results for Scotland



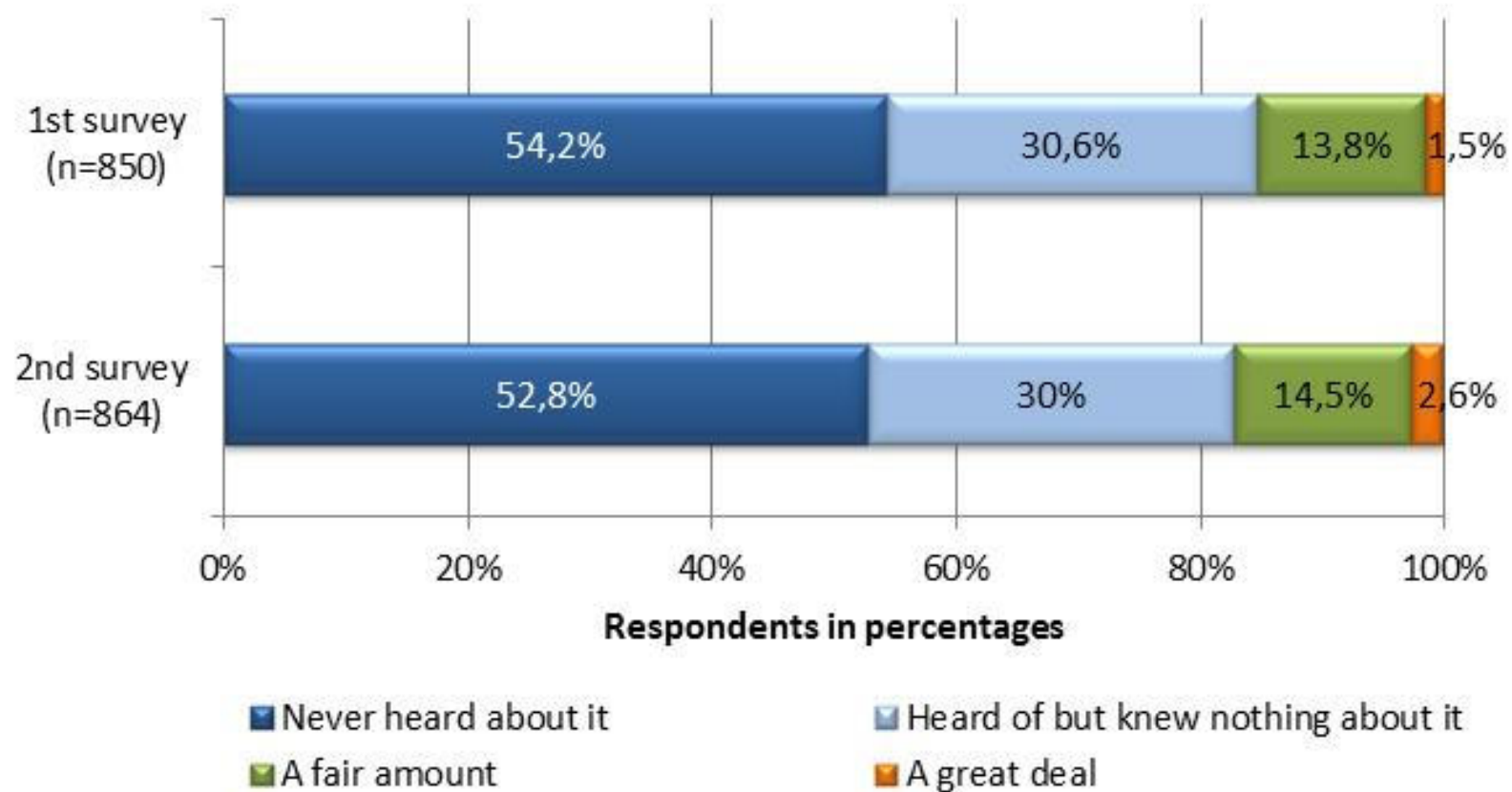
Survey results Scotland

- **Generally satisfied with the local area (86%)**
- **Most important issue is unemployment**

- **Preferred communication channels:**
 - **Internet**
 - **Local newspaper**
 - **Local councillors**
 - **National or local government**
- **Trusted representatives**
 - **Trust no one (23%)**
 - **Scottish National Party (7%)**

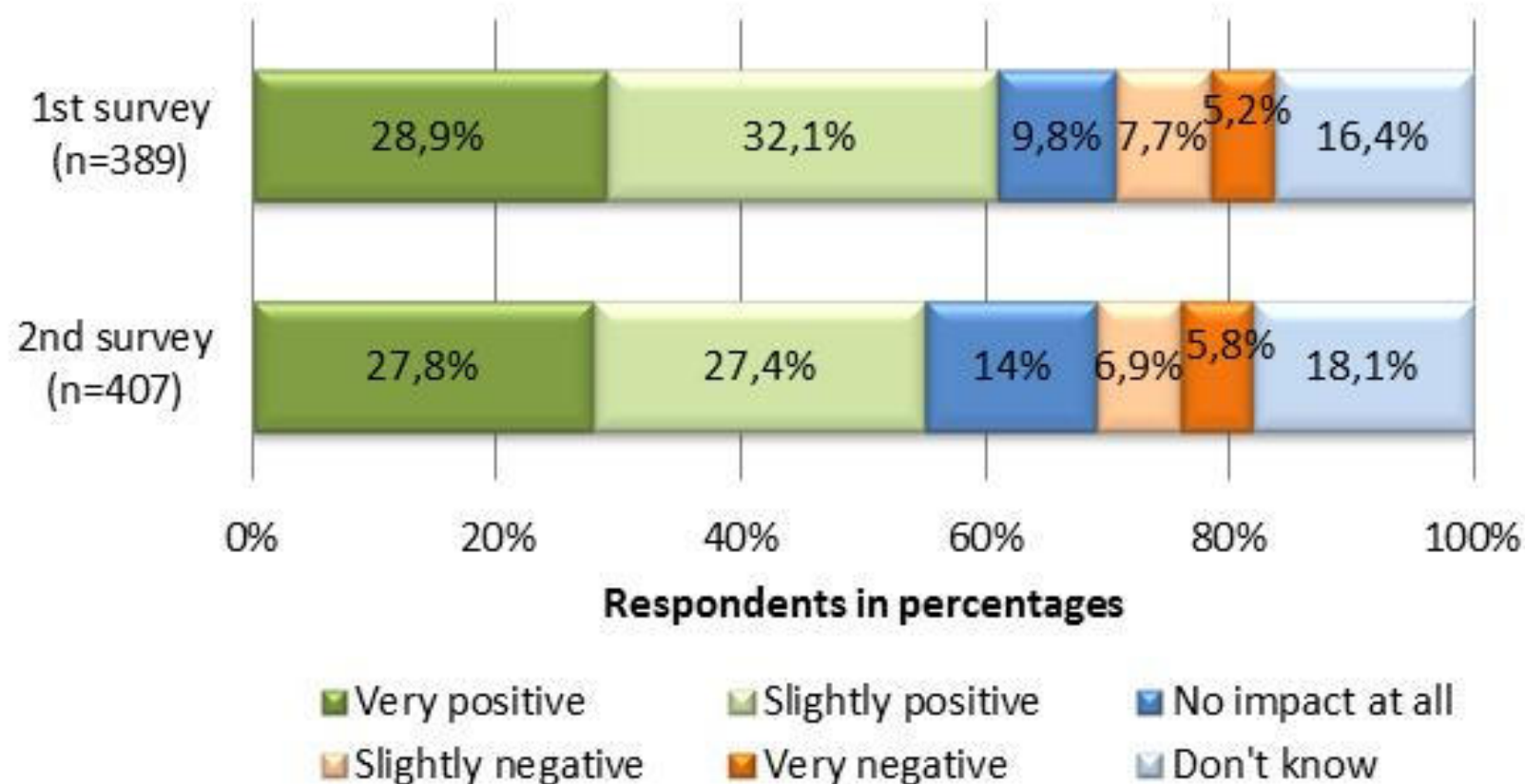
Heard of local CCS plans?

Before this interview, how much, if anything, did you know about CCS in the North Sea in the Moray Firth?



Attitude towards local CCS plans

Do you think plans for CCS in the North Sea in the Moray Firth will have a positive or negative impact on your local area?





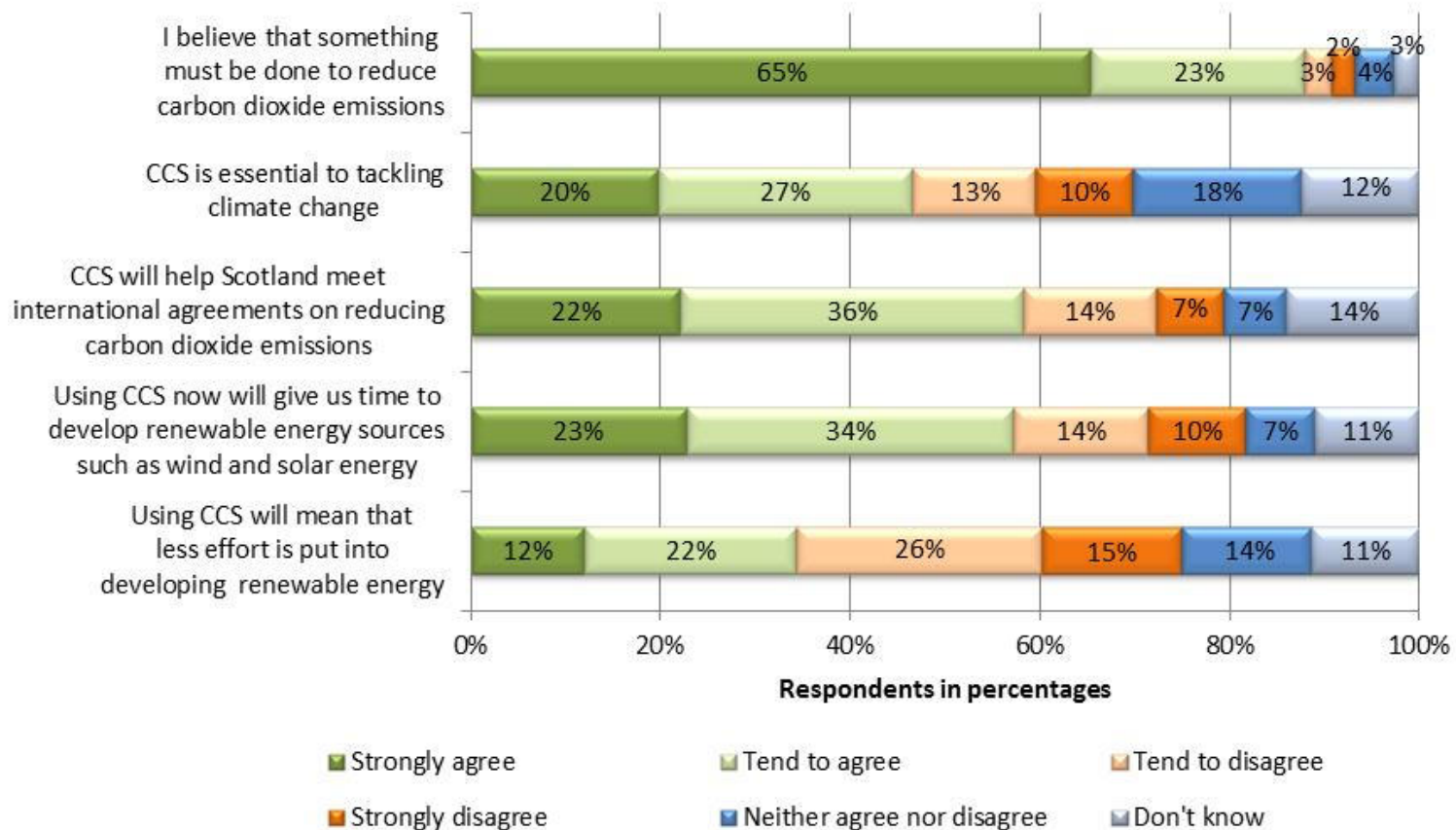
Attitude towards local CCS plans

- **Most often mentioned expected positive impact:**
 - Will bring jobs (74.3%)
 - Improve local economy (22.4%)
 - Better for environment (16.3%)

- **Most often mentioned expected negative impact:**
 - Bad for marine life/environment (29.5%)
 - Visual impact (11.8%)
 - Would be viewed by others as something negative (10.6%)

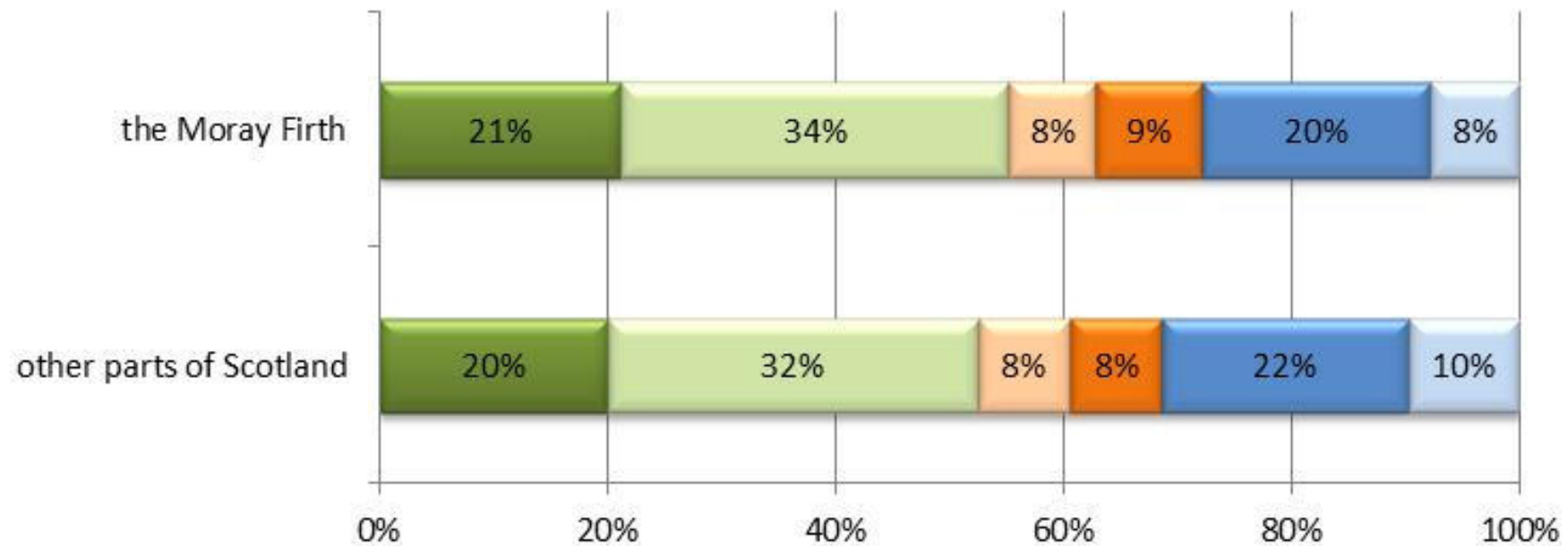
Climate - CCS perceptions

How much you agree or disagree with this statements?
Climate protection aspects



General opinion on CCS

On balance, do you support or oppose using CCS in...



Respondents in percentages

- Strongly support
- Tend to support
- Tend to oppose
- Strongly oppose
- Neither support nor oppose
- Don't know



Conclusions - Survey

- **Moderate awareness, positive attitudes**
- **No changes between measure I and II**
- **When heard of plans, most respondents expect a positive impact of CCS**
- **The most important issue of the area is unemployment and lack of jobs.**
- **Interestingly, this is also perceived as the most important benefit of developing CCS**
- **Expectations management may be in order**



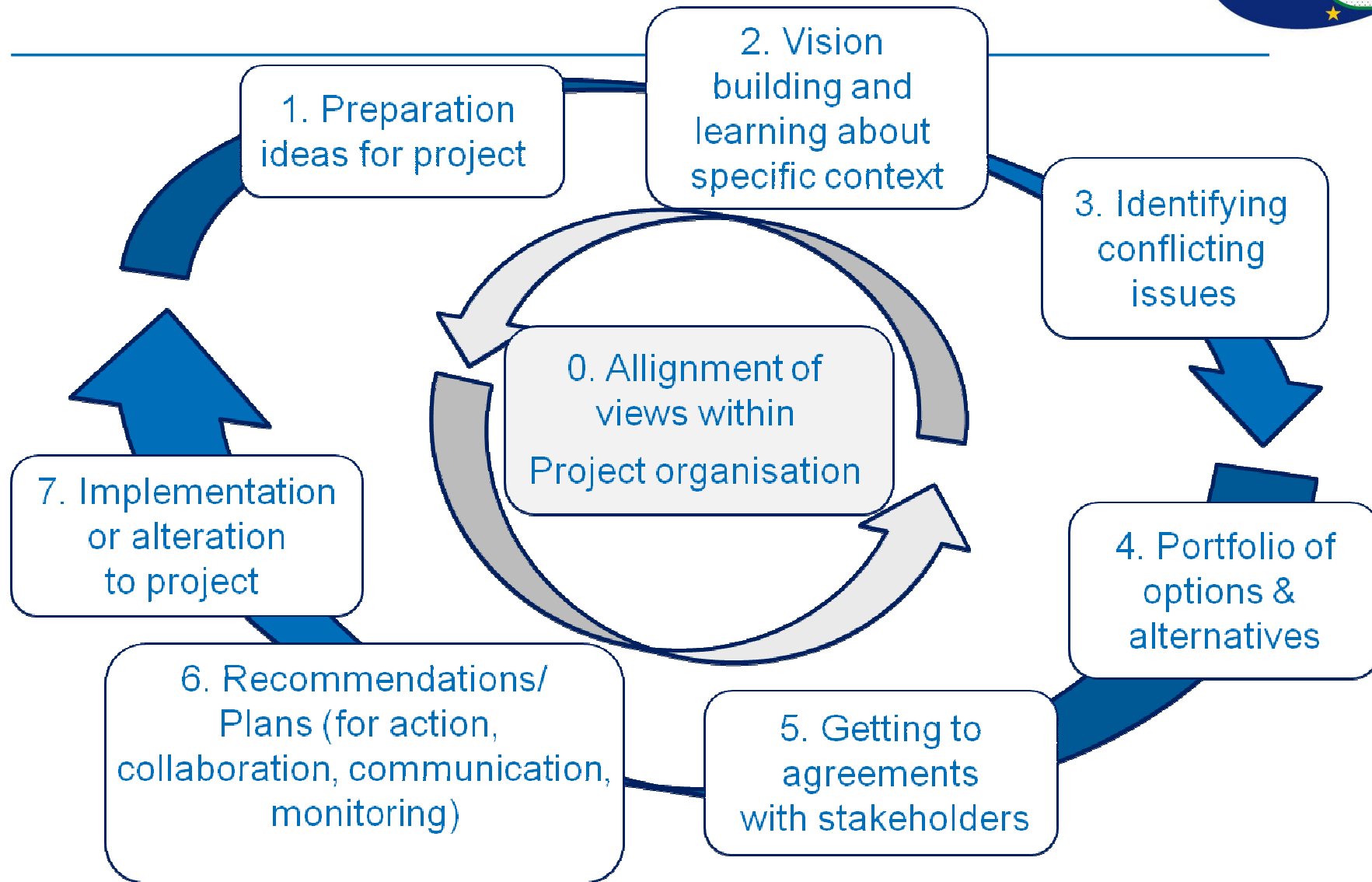
Conclusions - Survey

- **CCS is seen as a bridging technology which might hinder development of renewables**
- **However almost half of the respondents think that CCS is essential in tackling climate change**
- **Overall, more than 50% of the respondents indicated to support CCS deployment**
- **Those who do not indicate a preference for more information and proper public consultation.**



Conclusions

- **Using complementary research techniques results in reliable community overviews of:**
 - Awareness and knowledge of CCS
 - Questions and concerns about CCS
 - Expectations of CCS on (inter)national level
 - Expectations of local CCS plans
 - Conditions for acceptable implementation of CCS locally as well as (inter)nationally
- **But proof of the pudding is in the eating....**
 - How about application to the 'real world'?





Challenge – creating a shared vision

- **Why spend resources on public engagement?**
- **Project developers: acceptance of CCS**
- **Social researchers: fairness in decision making**
- **Policy makers: explanation, motivation**
- **Challenge: Shared vision on public engagement taking into account internal organizational processes, values, and norms**



Thank you

Questions?

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All deliverables and positioning papers
available at <http://www.sitechar-CO2.eu>