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# E-Futures

## Mini-Project Three Report

# Good Practices in Communicating CCS to the Public

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# CONTENTS

INTRODUCTION AND AIMS .....	3
SECTION 1: GOOD PRACTICES .....	3
1.1    COMMUNICATING THE NEED FOR CCS .....	3
1.2    TECHNICAL COMMUNICATIONS .....	4
1.3    ADDRESSING PUBLIC CONCERNS AND BUILDING CREDIBILITY .....	4
1.4    ONLINE COMMUNICATIONS.....	5
1.5    PRESS RELEASES .....	5
1.6    SUMMARY OF GOOD PRACTICE IN CCS COMMUNICATIONS .....	5
SECTION 2: RECOMMENDATIONS FOR SSE’S FERRYBRIDGE CARBON CAPTURE WEBSITE .....	6
2.1    OVERVIEW OF SSE’S ONLINE COMMUNICATION MATERIALS .....	6
2.2    RECOMMENDATIONS .....	7
CONCLUSION.....	8
REFERENCES .....	8

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# GOOD PRACTICES IN COMMUNICATING CCS TO THE PUBLIC

## INTRODUCTION AND AIMS

Communicating carbon capture and storage (CCS) to the public is important for developers of the technology. This is because strong public opposition can prevent projects going ahead as demonstrated in the case of Barendrecht in the Netherlands; it can impact on project plans and designs and can also influence the level of support demonstrated by policy makers (Markusson & Shackley, 2012). Communicating unfamiliar energy technologies to the general public is however a complex and sometimes risky process. Invariably there are many competing claims about the benefits and disadvantages associated with the technology and its likely impacts on major social and environmental policy areas such as climate change and energy security (Markusson & Shackley, 2012). The aspects of the technology which receive the greatest emphasis, the language used and types of associations drawn all play a role in shaping public awareness and support and by extension impact on technological progress. This is particularly the case for CCS where communications form a significant part of the public's experience because so few individuals have direct contact with the technology (Corry & Reiner, 2011). Moreover, studies have indicated that public awareness of CCS in the UK is still low (Malone, Dooley, & Bradbury, 2010; Wallquist, Visschers, Dohle, & Siegrist, 2011). This should not be viewed as a problem, but rather as an opportunity, because it presents developers with the chance to advocate the benefits of the technology before the majority of people have formed an opinion. Developing effective public communication materials should, therefore, be a priority for developers of the technology.

This report assesses the effectiveness of Scottish and Southern Energy's (SSE) website which provides information for the public on the company's carbon capture plant in Ferrybridge, West Yorkshire. For the purpose of this report carbon capture and storage (CCS) communications are defined operationally as *"any deliberate attempt to convey technical, social, legal, economic issues directly or indirectly related to the capture and storage of CO<sub>2</sub>"* for climate change mitigation (Corry & Reiner, 2011, p. 9). The Ferrybridge Carbon Capture Plant is the UK's largest operating amine project and aims to bridge the gap between laboratory trials and larger-scale projects (SSE, 2012). The scheme therefore facilitates academic research in addition to industrial learning, working with Imperial College London and the Universities of Nottingham, Leeds and Edinburgh. Carbon capture and storage technologies are being developed to address the carbon intensity of conventional fossil fuel power generation and are foreseen to have an important role in meeting the UK government's climate change mitigation targets (DECC, 2012). Ferrybridge employs post combustion technologies, capturing flue gas from the coal powered plant and separating the carbon before releasing it to the air. The purpose of the plant is to demonstrate the feasibility of CO<sub>2</sub> capture and it does not therefore have the facilities for CO<sub>2</sub> compression and storage (SSE, 2012). The project has been enabled by £21 million pounds in funding from DECC, the Technology and Strategy Board and Northern Way and is a collaborative project between SSE, Doosan and Vattenfall.

This report has two main aims and is accordingly divided into two sections:

- Section 1. Provides an overview of good CCS technology communication practices based on a review of current studies and literature.
- Section 2. Offers recommendations for the enhancement of SSE's online communication materials.

## SECTION 1: GOOD PRACTICES

This section reviews best practice in explaining the need for CCS to the public and considers how to present technical information comprehensively for the non-technical reader. The report then goes on to consider how to address public concerns without increasing risk perception. Good practices in website design and for press releases are also outlined.

### 1.1 COMMUNICATING THE NEED FOR CCS

While climate change is the most commonly used justification for the development of CCS technologies, appearing in around 80% of CCS websites, studies have demonstrated it to be a low priority for many members of the public (Corry & Reiner, 2011; Malone, et al., 2010, p. 419). Discussions of greenhouse gases, climate change and the specific energy technologies proposed to reduce the carbon intensity of energy production are often difficult to conceptualise and far removed from everyday concerns

(Malone, et al., 2010). Communicators with the aim of advocating CCS may therefore find that references to government climate change targets are less effective in engaging the public than they supposed. Furthermore, while focusing on CO<sub>2</sub> emissions presents CCS as a solution to climate change, emphasis on the causes of the emissions, namely fossil fuels, can make the technology look far less helpful (Corry & Reiner, 2011). It must be remembered that discussions of CCS are also communications about coal and the technology can easily be construed as a means of avoiding the issue of fossil fuel dependency (Markusson & Shackley, 2012). Climate change when presented as the *sole* justification of CCS technologies may therefore not only fail to engage the public, but may risk leading to negative perceptions of CCS.

CCS communicators advocating the technology must present a broader range of justifications for investment and implementation if they are to gain and hold onto public support. A critical study of CCS communications by Corry and Reiner (2011, p. 3) observed that *“communication concerning CCS and society is very much in the shadow of what CCS technology is and how it works”*, often lacking any element of human interest. In this regard communicators of CCS would benefit from looking at the example set by the renewables industry which often presents technologies as part of a vision for the future involving communities (ECCSDPN, 2011). CCS communications must move away from the technical and the abstract to consider the values and worldviews of their readers and incorporate some degree of emotional appeal (Malone, et al., 2010; Media Trust, 2012b). CCS, for example, can be advocated because it is compatible with the modern lifestyles we enjoy in the UK and because it can act as a bridge, enabling the consumer to benefit from lower carbon energy, while other more sustainable systems are developed (Markusson & Shackley, 2012). The CCS Road Map 2012 was highlighted by Corry and Reiner’s study as one of the few CCS communications to address the socio-economic implications of CCS, including possible wider benefits to the UK public (DECC, 2012). The government document sets the scene effectively, presenting to the reader the dilemma of reducing CO<sub>2</sub>, with the need to deliver growth, meet rising energy demand, and at same time place the smallest possible financial burden on the consumer. CCS is then introduced as an important part of the solution, having the *“potential to be one of the most cost effective technologies for the decarbonisation of the UK’s power and industrial sectors”* (DECC, 2012, p. 6). The technology is outlined as having a *“unique role”* because of its flexibility, being the only low carbon technology able to rapidly respond to consumer demand (DECC, 2012, p. 6). The technology is not set in opposition to other low-carbon options but presented as a viable part of the UK’s energy mix. Other advantages to CCS listed in the Road Map include opportunities for British manufacturing and increased expertise in industry and academic institutions which could help to make the UK more competitive. CCS needs to be communicated to the public as part of a vision for the future where affordable reliable low carbon energy is a reality.

## 1.2 TECHNICAL COMMUNICATIONS

The majority of CCS communications are focused on explaining technical issues and processes. This is not only the case when the technology is presented to corporate audiences but also occurs in public communications (Corry & Reiner, 2011). There are, however, several issues with CCS technology communications. Firstly, there is a tendency to treat CCS as a unified technology rather than as a collection of distinct technologies and processes, which could propagate misconceptions (Corry & Reiner, 2011). Secondly, some technologies receive far greater attention than others, with transport receiving the least coverage although it is likely to have the greatest public impact (Van Harmelen, Van Horssen, Jozwicka, Pulles, & Odeh, 2011). Lastly, technical communications remain text heavy, often lacking videos, animations or other visual aids to help illustrate complex concepts (Corry & Reiner, 2011; Reiner, 2008). Despite this, some excellent animations are now starting to appear. One good example is from ZEP, the Zero Emissions Platform (2012) which provides animations clearly explaining the need for CCS technologies, their role in the future energy mix and some of the capture, storage and transport processes involved. For companies which have not developed their own animations, providing links to this site may be helpful.

## 1.3 ADDRESSING PUBLIC CONCERNS AND BUILDING CREDIBILITY

Another important consideration for CCS communicators is how to effectively address public concerns and remove common misconceptions about technologies without creating new fears or further misunderstandings. This can be challenging because some studies indicate that providing more information can actually lead to fresh anxieties and misconceptions (Wallquist, et al., 2011, p. 89). One explanation for this is that people have limited time and attention. Long and complex communications risk only being partially read and understood. For this reason CCS communications should be clear, concise and above all brief (Wallquist, et al., 2011). Wording is also very important, particularly when addressing specific public concerns regarding, for example, CO<sub>2</sub> storage and potential leakage. Informing the public that high CO<sub>2</sub> concentrations can be *“fatal”* can easily move the unfamiliar technology into the *“dread”* frame (Fishhoff, Slovic, & Lichtenstein, 1993; Malone, et al., 2010). Careful planning of content and consideration of language are therefore essential in effective CCS communications.

It is possibly because communicating risk and addressing public concerns is challenging that only a minority of CCS websites tackle these issues (Corry & Reiner, 2011). However, failure to do so may make communications appear overtly positive, bringing into question the transparency of the corporation and undermining public trust (Corry & Reiner, 2011). It may be helpful therefore not only to present the technology in a more neutral tone but to also move away from discussing how CCS currently works to focus on how it may be made to work and the social and legal frameworks which would accompany the implementation of the technology (Corry & Reiner, 2011). In addition, providing comprehensive comparisons of CCS with the risks associated with other types of energy technology or of the consequences of non-action may help to tackle misconceptions and put risks into perspective (Malone, et al., 2010). The World Resources Institute (2010) recommends that corporations prepare to provide information and designate an experienced representative to act as a community link. Other measures which may assist in reassuring the public include providing links and information to other European CCS projects and working with NGOs and academic institutions because these enjoy higher levels of public trust (Corry & Reiner, 2011; ECCSDPN, 2011).

## 1.4 ONLINE COMMUNICATIONS

“Blanket” approaches to communications are rarely satisfactory and are generally only of limited use to the majority of readers (Corry & Reiner, 2011). CCS communication materials should, therefore, not only be discussed with members of the public before they are published online but should be tailored to the target audience. Testing communication materials by allowing selected readers to discuss their understanding of the material, comment on its relevance and readability and ask questions can highlight any sections of the text which could potentially be problematic (Wallquist, et al., 2011). Before writing communications it is also advisable for corporations to consider factors such as their proximity to the communities addressed and the nature of their relationship to these communities, including the level of trust and good will that can be realistically expected (WRI, 2010). Proximity is important because the Nuclear Energy Institute found that communities living within ten miles of power stations viewed the plants more favourably than communities at a greater distance (Malone, et al., 2010; Nuclear Energy Institute, 2008). This was thought to be because the residents in close proximity were more conversant with the economic and employment benefits the plant brought to the area (Malone, et al., 2010, p. 422). For this reason communicators need to target the information they provide to ensure that it addresses the concerns of the intended readers and explains how, if at all, the project is likely to affect them.

In addition to testing communication materials before publication, consideration should be given to the usability of the website. To facilitate ease of access websites should be checked to ensure that communication materials are not fragmented (Corry & Reiner, 2011). This is a particular concern for CCS projects involving a number of institutions. Providing links to related information on partners’ websites as well as on the technology more generally helps to facilitate learning and meet the needs of different types of reader, catering for those who want more than a basic introduction. The Global CCS Institute, the European Commission’s Zero Emissions Platform and “My2050” are all very useful online resources. Lastly, the visual appeal of the site should be considered including the additional use of videos, animations and schematics which can reduce the amount of text required (Corry & Reiner, 2011).

## 1.5 PRESS RELEASES

Press releases should tell a story, giving new and up to date information and explaining why the reported development is important (Media Trust, 2012a). These communications must always be timed to ensure that they correspond with an ability to demonstrate actual progress (ECCSDPN, 2011). Where funding has been received the release should outline what can now be achieved. In the first paragraph effective press releases address the five key questions: who, what, where, when and why. The story is then brought to life with the addition of one or two quotes from appropriate persons, following which, more in-depth information on the project should be briefly provided (Media Trust, 2012b). Quotes should always be worded to address the issue rather than the reader (Media Trust, 2012a). A case study helps to add a further element of human interest. For a CCS pilot this might be focused on how the project has or is likely to benefit communities. Releases will be enhanced by including a quote from a project beneficiary, for example, a community member who has gained employment (Media Trust, 2012a). Finally, effective press releases usually end with a “call to action” (Media Trust, 2012b). If environmental and energy security issues have been highlighted this could include a call for the public to consider greater efficiency in their homes or when purchasing electrical appliances.

## 1.6 SUMMARY OF GOOD PRACTICE IN CCS COMMUNICATIONS

- Identify and explain to the target audience the who, what, where, when and why of the project.
- Include an element of human Interest through quotes and case stories.
- In addition to technical information include social, economic and environmental considerations.
- Ensure communications are: clear, concise, brief, visually appealing and appropriately linked and cross referenced.

## SECTION 2: RECOMMENDATIONS FOR SSE'S FERRYBRIDGE CARBON CAPTURE WEBSITE

The website, illustrated by the screen print (Figure 1, below), is comprised of a single introductory page with three downloadable documents (SSE, 2012). The webpage and documents relating to CCS are critically assessed below and followed by a more detailed breakdown of recommendations.

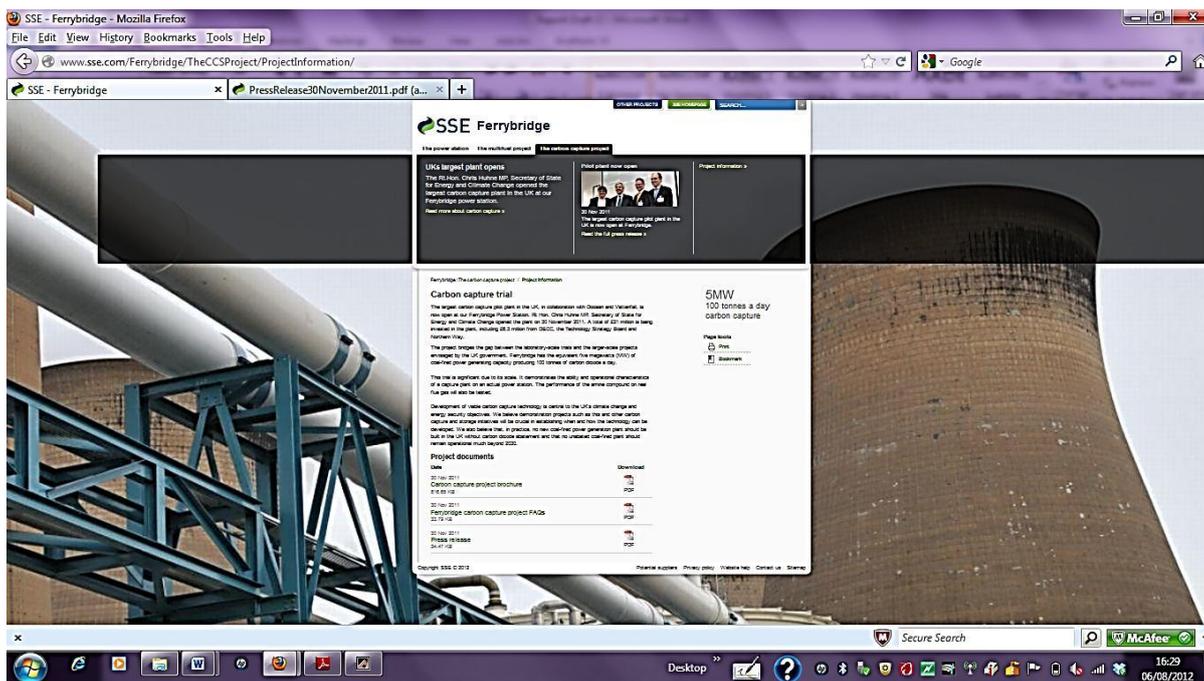


FIGURE 1: SCREEN PRINT OF SSE'S FERRYBRIDGE WEBSITE

### 2.1 OVERVIEW OF SSE'S ONLINE COMMUNICATION MATERIALS

- **Education:** SSE's website on Ferrybridge has a significant proportion of content dedicated to publicity rather than providing information for the public on CCS technologies. Two out of the three downloadable documents "carbon capture project brochure" and "press release", for example, advertise the project.
- **Links and Cross Referencing:** The information provided on Ferrybridge is fragmented not only across different websites (i.e. Doosan and Vattenfall) but also between documents which need to be downloaded and the information provided on the main page. Links are not provided to other websites containing information on the Ferrybridge project. There are also no links to provide information on CCS and energy issues in general. The useful information on the Ferrybridge Carbon Capture FAQs sheet and publicity brochure, which explain the technology, should be summarised and integrated with the article on the main page.
- **Accessibility and Visual Appeal:** The Ferrybridge Carbon Capture FAQs sheet contains some useful information which is well explained. However, it needs to be downloaded and is long and text heavy. This makes it less accessible and visually unappealing. The wording and language used are largely comprehensive but some of the key concepts could be better demonstrated through schematics and other visual media. The text heavy CCS communications would generally benefit from the use of visual educational aids such as schematics.

- **Tone:** The information provided on the website is supportive of the technology. While this is to be expected from any developer of CCS, there is a risk of appearing overtly positive or even evasive on the sections intended to address public concerns due to their relative lack of content (see “Ferrybridge carbon capture FAQs”).
- **Justification for CCS and Comparisons with other Technologies:** As with many CCS communications the main justification of the technology is founded on climate change and government targets. This is valid, but not very engaging. The example of the renewables sector should be followed here by providing a vision or scenario illustrating what a future with CCS might mean and look like for UK communities (ECCSDPN, 2011). This would assist the public in visualising how they might benefit from CCS deployment. Limited comparisons are made between CCS and other low carbon technologies.
- **Relevance:** The website does not provide updates on how the project is progressing, suggesting that it has not been recently revised.

## 2.2 RECOMMENDATIONS

### ➤ **Main Page of SSE Website**

- The main page could be enhanced by adding an element of human interest, for example, the inclusion of some quotes or a case study on how the local community is benefiting. For local readers information could be provided on the new sports field being constructed by the pilot station.
- The page is focused on government climate change targets which are far removed from everyday concerns. The social and economic benefits of CCS trials and scale-up should be highlighted.
- The page emphasises how the project will facilitate industrial learning. It could also benefit from stressing how the project will assist academic research. Studies have indicated that the public place far greater trust in academic institutions than in corporations. Publicising the pilot’s openness to research and scrutiny through collaboration with academia could boost the project’s profile. This is done to some extent on the Ferrybridge Carbon Capture FAQs sheet and should be replicated on the main page.
- The page would be enhanced by providing links to other sites on CCS and on energy issues, for example, “My2050”, The Global CCS Institute and the Zero Emissions Platform. It would also be helpful if links were made to the pages on Ferrybridge provided by SSE’s partners Doosan and Vattenfall. The latter has some helpful information and diagrams which could complement SSE’s site. Links to the academic institutions involved should also be given. These changes would make it far easier for the reader to access information on Ferrybridge which is currently fragmented across a number of sites and documents.
- Consider providing the details of a company representative who could act as a community-link. This would provide a point of contact and give a more personal, human aspect to the site.
- Update the website to give updates on progress since the project launch in 2011.

### ➤ **Ferrybridge Carbon Capture Project FAQs**

- This provides some very good explanations concerning the need for CCS development and considers some social, political and economic factors. It is currently three pages long and would benefit both from being made more concise and from the addition of images and diagrams to illustrate key concepts. This would also make the document more visually appealing and less text heavy.
- Greater emphasis needs to be placed on addressing public concerns and consideration should be given to expanding these sections and providing the contact details of a company representative.

### ➤ **Carbon Capture Brochure**

- This is short and visually appealing but appears to be mainly for publicity rather than public information. A schematic, for example, is included but not explained.
- The sections entitled “What is Carbon Capture?” and “Why is the CCPilot100+ project important to the UK?” are short and easily to understand. The sections would be well worth integrating with the information on main page of the website.

### ➤ **Press Release**

- The article is obviously aimed at publicising the project rather than providing the public with information about CCS technologies. It is quote heavy, illustrating the importance of the individuals and institutions involved with the project,

rather than giving a variety of perspectives and information. It succeeds, however, in giving the impression that the project is a new, important and exciting development in UK industry.

- The main justifications given for the project are meeting Government climate change targets and boosting the UK industrial sector. Greater emphasis on the social benefits of CCS development would enhance the article, making it more pertinent to the public.

## CONCLUSION

SSE's CCS webpage contains some very useful and comprehensive materials which have the potential to form the basis of an informative and engaging website. To achieve this, the existing article and downloadable documents need to be collated and complemented by visual aids. Public concerns also need to be addressed to a greater extent. Effective CCS communications should be brief, visually appealing and tailored to address the interests and concerns of the target audience. In addition to explaining technical issues and processes, social, economic and political factors should be discussed. SSE's webpage would be enhanced by going beyond government energy targets to discuss a wider range of benefits associated with CCS technologies. Following the example of the renewables industry, CCS should to be communicated as part of a vision for the future where secure, reliable, low carbon energy is a reality. Finally, SSE's communications could be improved by simple measures including cross referencing and the provision of links to related material. As few individuals have direct contact with CCS, communications form a significant part of their experience. SSE's website could therefore have an important role.

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