

# FutureGen Case Study

By Gretchen Hund<sup>1</sup> and Sallie Greenberg<sup>2</sup>



<sup>1</sup>Pacific Northwest National Laboratory

<sup>2</sup>Illinois State Geological Survey – Advanced Energy Technology Initiative

In fulfillment of Task 1 for CSIRO on behalf of the Global CCS Institute:

International Comparison of Public Outreach Practices

Associated with Large Scale CCS Projects

### Disclaimer

This report was prepared as an account of work sponsored by the Global CCS Institute (GCCSI) through the Commonwealth Scientific and Industrial Research Organisation (CSIRO). Neither the Battelle Memorial Institute, nor the Illinois State Geological Survey – University of Illinois, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favouring by the institutions mentioned herein or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of GCCSI, CSIRO, the United States Government or any agency thereof.

PACIFIC NORTHWEST NATIONAL LABORATORY

*operated by*

BATTELLE

*for the*

UNITED STATES DEPARTMENT OF ENERGY

*under Contract DE-AC05-76RL01830*

ILLINOIS STATE GEOLOGICAL SURVEY

UNIVERSITY OF ILLINOIS

## CONTENTS

<b>Glossary</b>	<b>4</b>
<b>Executive summary</b>	<b>5</b>
<a href="#">What is FutureGen?</a>	<a href="#">5</a>
<b>1 Introduction</b>	<b>7</b>
<b>2 Location and site characteristics</b>	<b>7</b>
<b>3 National context</b>	<b>8</b>
<b>4 Characteristics of the Project</b>	<b>9</b>
<a href="#">4.1 FutureGen Alliance</a>	<a href="#">10</a>
<a href="#">4.2 Site selection</a>	<a href="#">10</a>
<a href="#">4.3 Regulatory framework</a>	<a href="#">11</a>
<a href="#">4.4 Stakeholder involvement</a>	<a href="#">11</a>
<a href="#">4.5 Timing of milestones and key events</a>	<a href="#">11</a>
<b>5 Methodology</b>	<b>13</b>
<b>6 Stakeholder interview responses</b>	<b>13</b>
<a href="#">6.1 The Community: A self-characterisation</a>	<a href="#">13</a>
<a href="#">6.2 How interviewees became involved in FutureGen</a>	<a href="#">14</a>
<a href="#">6.3 Main themes heard in the interviews</a>	<a href="#">15</a>
6.3.1 Knowledge and awareness gained over time	15
6.3.2 Perceived benefits	16
6.3.3 Engagement	18
6.3.4 Questions and concerns	20
6.3.5 Perceptions of the project developer and project proponents	21
6.3.6 Positive and negative community perceptions	23
6.3.7 Changes in perception: Ups and downs	24
6.3.8 Personal touch important	24
6.3.9 Political connotations	25
<b>7 Media analysis</b>	<b>25</b>
<a href="#">7.1 Media analysis 2006</a>	<a href="#">25</a>
<a href="#">7.2 Media analysis 2007</a>	<a href="#">25</a>
<a href="#">7.3 Media analysis 2008</a>	<a href="#">26</a>

<b>8</b>	<b>Conclusions and lessons learned</b>	<b>29</b>
8.1	Competition as motivation	29
8.2	Community pride and altruistic benefits	29
8.2.1	Cultivating community pride	29
8.2.2	Recognising altruistic benefits	29
8.3	Cooperation and coordination critical	29
8.4	Understanding specific and varied audiences	30
8.5	Understanding where people obtain information and providing accurate and consistent information	30
8.5.1	Understanding where people get information	30
8.5.2	Providing accurate and consistent information	30
8.6	Ensuring access to experts	31
8.7	Using different engagement approaches	31
8.7.1	Engagement through meetings	31
8.7.2	Engagement in different forums	31
8.7.3	Engagement through demonstrations	31
8.8	Transparency is critical	32
8.9	Demonstrating community presence	32
<b>9</b>	<b>References</b>	<b>33</b>
<b>Appendix A – Interview guide</b>		<b>35</b>

### Table of Figures

Figure 1. Map of United States with outline of Illinois Basin	8
Table 1. Main characteristics of the FutureGen Project (as originally designed)	9
Figure 2. FutureGen milestones and events timeline	12
Figure 3. Total media coverage of FutureGen 2007	26
Figure 4. Total media coverage of FutureGen 2008.	28

### Glossary

American Electric Power (AEP)  
 Carbon Capture and Storage (CCS)  
 Carbon Dioxide (CO<sub>2</sub>)  
 Center for American Progress (CAP)  
 Department of Commerce and Economic Opportunity (DCEO)  
 Environmental Impact Statement (EIS)  
 Environmental Impact Volume (EIV)  
 Illinois State Geological Survey (ISGS)  
 Integrated Gasification Combined Cycle plant (IGCC)  
 International Non-Governmental Organisation (NGO)  
 Megawatt (MW)  
 National Environmental Policy Act (NEPA)  
 Request for Proposal (RFP)  
 US Department of Energy (DOE)

## Executive summary

### What is FutureGen?

FutureGen was created as a partnership between the US Department of Energy (DOE) and the FutureGen Alliance (Alliance) – a non-profit consortium of around a dozen coal companies and electric utilities with operations around the world.

FutureGen was designed as a competition for US communities to vie to be selected as the host site for a near-zero emissions power plant using carbon capture and storage (CCS). The Alliance is responsible for designing, building and operating the facility and led selection of the host site.

FutureGen would be a model for the integration of power generation and CCS while serving as an international research facility for energy and climate mitigation technologies. A central mission of the Alliance is research and the underlying intent for FutureGen is to share lessons learned broadly so that the technology can be replicated around the world to help address climate change.

Twelve states entered the competition to be selected as the host site for FutureGen. Two states emerged as the semi-finalists – Illinois and Texas – each with two sites in the running. Each of these states had strong teams working on technical issues and community engagement.

This paper is a retrospective view of the FutureGen project, which was initiated in 2006. (Not included in this discussion are reactions regarding the recently announced restructured FutureGen 2.0.) This report details the Alliance's effort and the Illinois FutureGen Team's community engagement activities and the perceived effectiveness of this engagement. The timeline is from July 2006, when the four semi-finalist sites were selected, through December 2007, when Mattoon, Illinois was selected as the final site, and ends one year later.

The research team conducted interviews with nine stakeholders from various perspectives to hear their views of the Mattoon community, how they became involved in FutureGen, and their perceptions of the project overall, the engagement process specifically, and the stakeholders involved. The report also includes a media analysis during this 29-month period – identifying the themes reported, how they changed, and the percentage of positive, negative and balanced or neutral coverage over this period.

### Lessons learned

Unique to this case was that **competition served as a motivator** in the site selection process. The Illinois FutureGen Team was interested in identifying communities that met three types of criteria defined by the Alliance: (a) qualifying criteria, (b) scoring and best value criteria, and (c) final decision criteria. The successful sites were solid technical matches with the criteria but also were able to demonstrate community enthusiasm. Future project proponents may consider adding public acceptance as an explicit criterion in evaluating sites. Self-selection was found to be an effective community engagement ideal, which allowed communities to consider pros and cons of projects before project commitments and created a situation where the competing communities became invested in winning.

**Cultivating community pride** through this process was seen as an important achievement. Pride centered on being selected as the national and international focal point for hosting this new, research-based, integrated power plant of the future. Closely related were the **altruistic benefits viewed by an early-adopter community** in being at the forefront of energy research.

Stakeholders felt that **cooperation and coordination** were important in winning FutureGen. Communities that historically had not worked together were collaborating to ensure that FutureGen came to Illinois, regardless of which of the two semi-finalist sites was chosen. In addition, a neighboring community to Mattoon was to provide water for the plant and was home to a university; both were seen as important assets to the proposal. This level of cooperation was new to the participating and neighboring communities and continues beyond the scope of FutureGen.

**Understanding specific and varied audiences** was critical to stakeholder engagement. The Alliance, the state, and local project proponents spent time preparing for engagement by doing their homework and knowing the perspectives of stakeholders before engaging them. Key observations **include that background, generational influences, and social characteristics of the community may provide increased stakeholder understanding.** Seeking input from audiences about what information will be of interest to them and providing that information in

## FutureGen Case Study

a timely manner can be beneficial to engagement. Allowing time for audiences to absorb information and keeping the lines of communication open to answer additional questions as they arise is essential.

Understanding where people got their information, providing accurate and consistent information were critical aspects of community engagement. Key strategies included:

- being prepared to provide information early and often
- providing consistent information created by multiple sources (often with varying perspectives)
- providing accurate information so that people are not left with false expectations.

Ensuring that stakeholders have access to technical experts, not just project proponents, to answer questions through multiple venues was important for building trust. Informal sessions provided stakeholders with the opportunity to become more familiar with the technical issues around a project. Engagement can also be powerful by using third-party scientists (not the project proponent) to describe how CCS works. Such experts can provide credibility, particularly if they represent an organisation in the region. The Illinois State Geological Survey (ISGS) was an example of this. The ISGS also used a three-dimensional physical table-top model of CCS which helped stakeholders visualise how CCS would work.

Using different engagement approaches, depending on audience, maximised the reach and diversity of stakeholders, and improved the level of free exchange in the dialogue. Early meetings were important in defining what issues stakeholders were most interested in and what information they found helpful. Meetings with groups from similar backgrounds provided an opportunity to engage with their peers and speak freely.

Transparency and access built trust by encouraging input and engaging stakeholders by providing information in a timely and open manner.

Public acceptance of a CCS project may have been facilitated by the project developer spending time in and getting to know the community. The Alliance held board meetings in Mattoon, opened an office in Mattoon, and attended community events which were appreciated by stakeholders interviewed.

The challenge of planning and implementing a long-term project (tens of years) in conjunction with shorter-term political periods (one to four years) is significant. Varying timeframes can be impacted by changes in funding, political agendas, policy decisions, local and national economic importance, and many others. For example, different administrations have different priorities and federal funding is allotted annually. Federal government commitment for multi-year projects can change based on available funds, political shifts, and other socio-economic concerns. It is important for project developers to recognise that this cyclical impact can be misunderstood and frustrating for local communities who have spent enormous resources in time and money to attract a project. At the time of this report, FutureGen's future is unsure as the current administration decides whether to move forward with support<sup>1</sup>. No easy solution to this challenge exists, but similar projects may want to take into account the strain that this uncertainty can place on a community.

These lessons learned are intended to help future CCS project developers design stakeholder engagement processes. Stakeholder involvement is not a static approach or a box to be checked but a dynamic process to be used and evaluated throughout a project. By engaging stakeholders, a project proponent can understand what issues and concerns are critical to a community and consider them in designing the project. Stakeholder input can be viewed as a form of consulting that values local knowledge and can improve the design of a project.

---

<sup>1</sup> This paper is a retrospective view of the US-based FutureGen project initiated in 2006 through 2010. Not included in this discussion are reactions regarding the recently announced restructured FutureGen 2.0.

## 1 Introduction

Carbon capture and storage (CCS) is viewed by many as an important tool in reducing anthropogenic carbon dioxide (CO<sub>2</sub>) emissions. The United States Government decided to create a public-private partnership to develop a flagship commercial-scale project that would design, build and operate a world-class research-based power plant with CCS. This partnership, known as the FutureGen Alliance (the Alliance), was between the US Department of Energy (DOE) and a dozen electric utilities and coal companies from around the world. Furthermore, other nations signed on as partners to contribute to the research.

This report describes the stakeholder engagement processes that occurred during the most active years of the project – from when a list of twelve sites vying to be selected to host the site was narrowed to four (June 2006), through the selection of the final site in December 2007, and ending one year after this site was selected (December 2008). Interviews were conducted with many critical stakeholders in December 2009 asking them to reflect on their engagement and knowledge of the project during this period.

An analysis of media reports during this period was conducted to understand where the story was covered, how the project was depicted, and how the issues changed over time<sup>2</sup>.

Finally, a set of lessons learned is provided to assist future projects focused on CCS. Insights into which engagement strategies worked well and what approaches could be improved or were not helpful are also included.

## 2 Location and site characteristics

The Alliance was created in September 2005. It established a competitive process for selecting the FutureGen site and issued a Request for Proposals (RFP) from potential host communities in March 2006 (Fed. Reg. 71, 145, 2008). By 9 May 2006, the economic development organisations of a dozen communities from seven states had responded, generally motivated by job potential, economic development and the opportunity to host a world-class research facility.

The Alliance used extensive siting criteria to evaluate the proposals<sup>3</sup> and, in July 2006, selected four semi-final sites: two in Texas and two in Illinois. All four were in rural communities. Both Illinois sites are in central Illinois and near farming communities. One of the Texas sites is north-east of College Station in a cattle farming area but also near coal lignite mines. The other Texas site is near Midland/Odessa, an area known for oil and gas exploration. Of these four semi-final sites, the Alliance selected Mattoon, Illinois as the site for FutureGen in December 2007.

The Illinois Basin is recognised as a significant target for geologic sequestration (MGSC, 2005). The subsurface geologic basin covers 155,400 km<sup>2</sup> (60,000 mi<sup>2</sup>) and has the potential for enhanced oil recovery, enhanced coal bed methane recovery and storage in deep saline reservoirs. The target geologic unit for FutureGen is the Mt Simon Sandstone, an approximately 488 m (1,600 ft) thick heterogeneous sandstone. The Mt. Simon directly overlies Pre-Cambrian basement igneous rock and is overlain by a thick shale cap rock, the Eau Claire Shale. The Illinois Basin stratigraphic sequence also contains secondary and tertiary caprocks between the Eau Claire Shale and the surface (Kolata, 2005). The top of the Mt. Simon Sandstone at Mattoon is approximately 1,800 m (6,000 ft) beneath the surface. Groundwater in the area is derived from surface sources or from sediments 30 to 60 m (100 to 200 ft) beneath the surface (MGSC, 2005).

Mattoon is a rural community located in Coles County, Illinois in the Midwestern United States (Figure 1). The county land area is 1,320 km<sup>2</sup> (510 mi<sup>2</sup>) (US Census Bureau, 2010). Total population in Coles County as of 2008 was 52,259 (47.9 per cent male and 52.1 per cent female) and the City of Mattoon has a population of 18,291 (US Census Bureau, 2008). The median age is 30.6 years, with 13.5 per cent of the population over 65 years and 5 per cent under five. The median household income in the county is \$35,307 (US 2008 inflation-adjusted dollars), with 58.6 per cent of the population over 16 in the labor force (US Census Bureau, 2008). The primary industries in Coles County are education, health and social services, manufacturing and industry.

---

<sup>2</sup>This paper is a retrospective view of the US-based FutureGen project initiated in 2006 through 2010. Not included in this discussion are reactions regarding the recently announced restructured FutureGen 2.0.

<sup>3</sup> Over one hundred More than 100 criteria were used in evaluating the dozen sites.



Figure 1. Map of United States with outline of Illinois Basin, a subsurface geologic feature. Mattoon, Illinois (shown) is approximately 300 km (185 mi) from Chicago.

### 3 National context

There has been a growing interest in CCS in the United States over the past several years. The US Congress through the US Department of Energy's National Energy Technology Laboratory has an extensive carbon sequestration research program. The DOE Regional Carbon Sequestration Partnership program consists of seven partnerships distributed regionally throughout the United States.<sup>4</sup> Each partnership is conducting carbon sequestration research through a phased research approach from characterisation to validation and deployment. The goal is to learn as much as possible through this research and development program so that technology systems can be applied broadly in different geologies. DOE recently expanded its program to include CCS research projects using non-power plant sources of CO<sub>2</sub>.<sup>5</sup> DOE has also funded the development of regional training centres so that the future workforce needed for CCS operations can be trained and ready to apply its skills.

Individual companies are also investigating the use of CCS in combination with projects. Much focus over several decades has been on enhanced oil recovery projects. Many private projects have been started from a scoping/feasibility standpoint and then halted when it was apparent that costs were going to be too high. FutureGen was intended to help spread the risk and cost among many companies as well as the DOE, by sharing information gained through the development, design, implementation and operation of a model plant with the international research community and industry partners.

---

<sup>4</sup> [http://www.netl.doe.gov/technologies/carbon\\_seq/partnerships/partnerships.html](http://www.netl.doe.gov/technologies/carbon_seq/partnerships/partnerships.html)

<sup>5</sup> [http://www.netl.doe.gov/technologies/carbon\\_seq/index.html](http://www.netl.doe.gov/technologies/carbon_seq/index.html)



## 4 Characteristics of the Project

Table 1. Main characteristics of the FutureGen Project (as originally designed)<sup>6</sup>

<b>Nature</b>	The FutureGen Project seeks to demonstrate the combination of Integrated Gasification Combined Cycle (IGCC) power generation with the technical and environmental safety of the geological storage of CO <sub>2</sub> in a deep saline reservoir 2.2 km (1.4 mi) underground in Illinois, United States. A significant component of this demonstration project is the comprehensive monitoring and verification of the stored CO <sub>2</sub>
<b>Scale/size</b>	275 MW plant – providing electricity to 150,000 homes (FutureGen Alliance, 2008)
<b>Cost</b>	US \$2.2 billion (in 2009 dollars if it were built that year)
<b>CO<sub>2</sub></b>	One million tonnes per year
<b>Source of CO<sub>2</sub></b>	Power generation in 275 MW IGCC plant
<b>Project duration</b>	The project RFP was initiated in 2006 and a final site was selected in 2007. The project was delayed in January 2008 and is currently under re-evaluation. A decision is expected to be made in 2010 as to whether FutureGen will proceed
<b>Pipeline</b>	CO <sub>2</sub> storage will take place on-site. A short pipeline to deliver CO <sub>2</sub> from source to injection well will be on FutureGen property
<b>Location choice</b>	Mattoon, Illinois was chosen after reviewing 100 technical site selection criteria which included quality of reservoir, seals, available water source, and a multitude of other factors including criteria relating to public acceptance (FutureGen Alliance, 2006). <sup>7</sup> The Mt. Simon Sandstone is the target reservoir, which is 1,800 m (6,000 ft) beneath the surface and approximately 488 m (1,600 ft) thick at Mattoon. It is directly overlain by the Eau Claire Shale, a dense, impermeable caprock
<b>Site selection</b>	The FutureGen Alliance considered 12 proposals for site selection. Four semi-finalist sites were selected, two in Texas (Odessa and Jewett) and two in Illinois (Mattoon and Tuscola). Mattoon, Illinois was selected as the winning site in December 2007. Following comprehensive site characterisation, it was found that the site is well suited to the geological storage of CO <sub>2</sub> . A full Environmental Impact Statement (EIS) was conducted and a Record of Decision was issued, finding that there are no environmental issues that would mean forgoing selecting any of the semi-finalist sites.
<b>Regulations</b>	FutureGen will require an Underground Injection Control permit from the Illinois Environmental Protection Agency (EPA). A Class I Non-hazardous permit has been applied for and is pending at the time of this report. An air permit is required for the IGCC power plant. This permit will be applied for through the Illinois EPA
<b>Current status (July 2010)</b>	Pending funding decision from US DOE
<b>Website</b>	<a href="http://www.futuregenalliance.org/">http://www.futuregenalliance.org/</a> <a href="http://www.futuregenforillinois.com/">http://www.futuregenforillinois.com/</a>

<sup>6</sup> This paper is a retrospective view of the US-based FutureGen project initiated in 2006 through 2010. Not included in this discussion are newly proposed project components of the recently announced restructured FutureGen 2.0.

<sup>7</sup> Specific criteria included landowners and their willingness to allow monitoring to take place – physical access, legal access, and subsurface access. Right-of-way access for transmission lines and land use were also included. One of the dozen sites that was not selected did not score as highly as others because "...there are two housing developments located within one mile of the power plant site (and onsite CO<sub>2</sub> injection wells), which raises land use compatibility concerns..." (FutureGen Alliance, 2006). In addition to these very specific criteria concerning land access and proximity to neighbors, the site evaluation report states "a primary goal of FutureGen is to build industrial and public acceptance for future near-zero emission, coal-fueled power plants of similar design characteristics

## FutureGen Case Study

### 4.1 FutureGen Alliance

The Alliance is responsible for the design, construction and operation of a 275 MW integrated gasification combined cycle (IGCC) power plant and a plan to capture and store 90 per cent of the CO<sub>2</sub> – about one million metric tonnes a year. The Alliance is a non-profit organisation with a research mission of sharing lessons learned so that the technology can be broadly replicated around the world.

The Alliance, at the time of semi-finalist site selection, consisted of 10 members. The members, with their headquarters' location, included:

- Alpha Natural Resources, Inc., (Linthicum Heights, MD)<sup>8</sup>
- American Energy Power (AEP), Inc (Columbus, OH)
- Anglo American Services (UK) Limited (London, UK)
- BHP Billiton Energy Coal Inc (Melbourne, Australia)
- China Huaneng Group (Beijing, China)
- CONSOL Energy Inc (Pittsburgh, Pennsylvania)
- PPL Corporation (Allentown, PA)
- Peabody Energy Corporation (St. Louis, Missouri)
- Rio Tinto Energy America (RTEA) Services (Gillette, Wyoming)
- Southern Company (Atlanta, GA)

Within six months of the announcement, two more companies joined:

- E.ON U.S. LLC (Louisville, Kentucky)
- Xstrata Coal Pty Limited (Sydney, Australia)

One year later (December 2007), Luminant (Dallas, TX), a subsidiary of Energy Future Holdings (EFH) joined the Alliance, increasing the membership to 13. At this time, these companies provided energy to tens of millions of residential, business, and industrial customers in Asia, Australia, Canada, Europe, China, South Africa and the United States, among other regions. These 13 companies remained members until after the final site was chosen.

Since that time, a few companies have left the Alliance, citing different reasons for ending their membership. The Alliance has been recruiting new members throughout the project. Two companies have publically stated that they are likely to join should DOE decide to continue support of the project. The current list of companies includes:

- Alpha Natural Resources, Inc. (Linthicum Heights, Maryland)
- Anglo American Services (UK) Limited (London, UK)
- BHP Billiton Energy Coal Inc (Melbourne, Australia)
- China Huaneng Group (Beijing, China)
- CONSOL Energy Inc (Pittsburgh, Pennsylvania)
- E.ON U.S. LLC (Louisville, Kentucky)
- Peabody Energy Corporation (St. Louis, Missouri)
- Rio Tinto Energy America (RTEA) Services (Gillette, Wyoming)
- Xstrata Coal Pty Limited (Sydney, Australia)

### 4.2 Site selection

The Alliance, as the project developer, focused on the selection of a suitable site. More than 100 criteria were used in evaluating the dozen sites competing to be selected (FutureGen Alliance, 2006).<sup>9</sup> Specific criteria included landowners and their willingness to allow monitoring to take place – physical access, legal access, and subsurface

---

<sup>8</sup> At the time of site selection, the company was Foundation Coal

<sup>9</sup> A full list of the 100 criteria was given to all of the competing communities to help them prepare their proposals. A team representing the Alliance visited each of the sites, met with the local proponents, answered questions about the criteria that were made public, and walked the sites. Once the full proposals were received by the Alliance, two independent teams were established to review them. One team focused on the subsurface with regards to appropriate storage sites and the other

access. Other criteria included right-of-way access for transmission lines and land use. One of the dozen sites that was not selected did not score as highly as others because: "... there are two housing developments located within one mile of the power plant site (and onsite CO<sub>2</sub> injection wells), which raises land use compatibility concerns ..." (FutureGen Alliance, 2006). In addition to these very specific criteria concerning land access and proximity to neighbors, the site evaluation report states: "A primary goal of FutureGen is to build industrial and public acceptance for future near-zero emission, coal-fuelled power plants of similar design characteristics (FutureGen Alliance, 2006)." The stakeholder involvement team of the Alliance was also daily tracking media reports from all dozen sites to gauge community support. The states and communities competing to host the project conducted community engagement on a more local level, building project proponent teams, identifying key stakeholders, and working with the communities to increase public awareness and gain public acceptance.

### 4.3 Regulatory framework

From a regulatory standpoint, the project followed the National Environmental Protection Act (NEPA) process and had an Environmental Impact Statement (EIS) conducted by DOE. After Secretary Chu took office, DOE issued the Final EIS and the Record of Decision which found that there were no environmental issues with the four semi-finalist sites (74 Fed. Reg. 35174 (20 July 2009)). The State of Illinois passed legislation to accept long-term liability for the CO<sub>2</sub> injected under the site, knowing that it would be carefully monitored to verify the size and location of the plume (IL SB1704, 2008). The State of Texas had previously accepted liability for injected CO<sub>2</sub> in the early stages of the FutureGen competition and Illinois followed suit. The Alliance still has to receive an Underground Injection Control permit from the Illinois EPA and an air permit for the power plant.

### 4.4 Stakeholder involvement

Stakeholder involvement in the FutureGen process began in 2006 and continues to the present. Due in part to the competitive nature of FutureGen, the community engagement process was conducted on multiple levels. Because limited stakeholder involvement has occurred during the past 2.5 years while DOE's support was being reevaluated, this case study covers the period from the selection of the four semi-final sites (July 2006) to one year after the selection of the final site in Mattoon, Illinois (December 2008).

Outreach and engagement efforts on the FutureGen process began very early and were conducted on multiple levels by multiple parties. Levels of stakeholder engagement included national, regional, and local. The parties involved in stakeholder engagement and outreach ranged across semi-finalist sites, occurring from the FutureGen Alliance project development team, regional and local economic development organisations, and third-party scientific experts and many others. The lessons learned reflect perspectives from the successful site in Mattoon, Illinois and from the FutureGen Alliance process as a whole.

### 4.5 Timing of milestones and key events

After the final site announcement in December 2007, the DOE withdrew financial support for FutureGen, citing escalating costs as the reason for this decision. The budget was initially \$1.1 billion but due to increasing construction costs and infrastructure issues, the cost rose to more than \$2.3 billion in 2009 (in 2009 dollars, not adjusted for inflation). Despite this setback, the Alliance, along with the State of Illinois and the Mattoon community, remained committed to keeping FutureGen active.

Throughout 2008, the DOE worked to restructure the project. During this period, Congress protected funding for FutureGen and decided to extend the cooperative agreement between the Alliance and DOE, leaving the decision up to the new President and the administration as to whether FutureGen should be built.

Discussions between the Alliance and the new DOE Secretary Chu and his staff began soon after the beginning of the Obama Administration in January 2009. During these discussions, several technology configurations were evaluated to determine the most appropriate design to reduce cost and technical risk. In July 2009, DOE and the

---

focused on the surface with respect to the IGCC plant and ensuring that the appropriate infrastructure would be available. The day of the announcement of the four semi-finalist sites, the Alliance posted the full evaluation report on the website which added to the transparency of the site selection process. This report, Results of Site Offeror Proposal Evaluation, 21 July 2006, Submitted to the US DOE by the FutureGen Alliance can be viewed at: <http://www.futuregenalliance.org/news/newsarchive.asp>.

## FutureGen Case Study

Alliance reached an agreement to proceed with a reconfigured IGCC plant with CCS, to be built in Mattoon, Illinois. Earlier this year, the Alliance provided the DOE with cost plans to review. DOE is scheduled to make a decision about supporting the construction phase of FutureGen, by the end of September.

Figure 2 depicts the project activity timeline for FutureGen, based on activities undertaken by the various stakeholders. The Alliance issued the project RFP in March 2006. Environmental Information Volumes (EIVs) were prepared by the Alliance for each of the four semi-finalist sites (FutureGen Alliance, 2007a, 2007b, 2007c).<sup>10</sup> Much of the power plant site information in the EIVs was provided by the site proponents based on direction by the Alliance; information regarding the subsurface geology for the four sites was developed by Alliance subject matter experts. The EIVs were provided to DOE for use in the Draft Environmental Impact Statement. The EIVs were originally provided to DOE on 1 December 2006. They were revised in April 2007 to correct minor inconsistencies and update geologic information based on new data. The review and candidate selection process involved more than 200 stakeholder interviews and four site visits (one to each semi-finalist site). Community and media monitoring were conducted by the Alliance throughout the entire time covered in this report. The Illinois FutureGen Team initiated ongoing public engagement during the site proposal preparation process. As early as August 2006, the Illinois Department of Commerce and Economic Opportunity (DCEO) and ISGS held public meetings to explain the FutureGen concept and answer questions about the IGCC plant and CCS. Meetings with separate stakeholder groups were held throughout this period, including meetings with farm bureaus, neighbors, teachers and the general public. The DOE hosted public hearings at the four semi-finalist sites as part of the EIS process. Before these meetings, an open-house was held for the community, featuring Alliance and ISGS staff at different locations in the room so that attendees could informally visit with each and ask questions. Posters and schematics were used to explain the project. In December 2007, the Alliance finished its evaluation of the four semi-finalist sites and chose Mattoon, Illinois. A report on its evaluation was uploaded that day on to the Alliance's website (FutureGen Alliance, 2007d).<sup>11</sup>

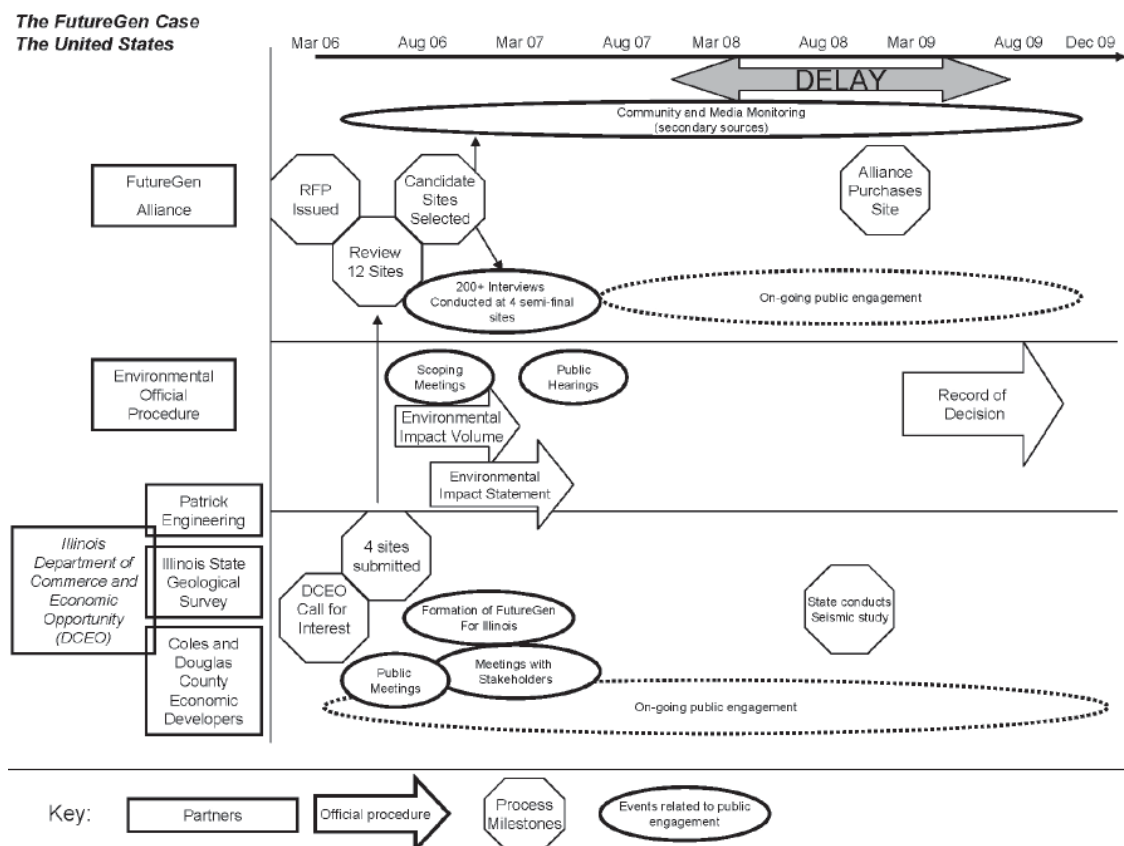


Figure 2. FutureGen milestones and events timeline<sup>12</sup>

<sup>10</sup> See <http://www.futuregenalliance.org/news/evi.stm> to download the full EIV statements.

<sup>11</sup> See <http://www.futuregenalliance.org/publications.stm> to download the report.

<sup>12</sup> The events shown in this figure cover the time period of 2006 to 2009. Not included in this discussion are details and reactions regarding the recently announced restructured FutureGen 2.0.

## 5 Methodology

In November 2009, an international stakeholder engagement research team, funded by the Global CCS Institute, developed an interview protocol for an international comparison of five CCS projects and the public engagement surrounding projects in Australia (Otway, ZeroGen), the Netherlands (Barendrecht), and the United States (Carson, FutureGen) (Appendix A).

Primary and secondary sources of information about FutureGen and the public engagement process were used for this report. Primary source data was collected in December 2009 by the FutureGen research team, using the international team developed interview protocol, to obtain stakeholders' individual, retrospective opinions of FutureGen and their involvement in the project. Nine stakeholders were interviewed from the following perspectives:

1. Community project proponent
2. Neighbors of the proposed site
3. Community leaders – farm bureau and higher education representatives
4. State project proponent
5. National environmentalist

All but one interview was conducted in person (the other was conducted by telephone). The two-member FutureGen research team attended all interviews, which were recorded and transcribed. All interviewees were promised anonymity in that their names would remain confidential.

The following section summarises the responses from these stakeholders. It includes stakeholders' views of their community, how they became involved in FutureGen, and then describes the main perceptions of the project, the engagement process used and the people involved.

Secondary source data for this report was derived from Alliance (2006), Alliance (2007a, 2007b, 2007c, 2007d), MGSC (2005), unpublished reports, consultant prepared media analyses, and collected media articles.

## 6 Stakeholder interview responses

### 6.1 The community: A self-characterisation

Through the FutureGen site selection process, Mattoon, Illinois was chosen as the preferred location. Respondents were asked to characterize the community. Some described it as a stable to progressive community for its size and location, whereas a few felt the area's economy was stagnant with poor job potential. The lack of well-paying jobs was mentioned by each respondent as a major factor in the community. Concern was expressed that younger generations would not be able to find jobs nearby and would leave the community. Respondents characterised Mattoon as a "close-knit," rural community where "folks tend to know each other" and many residents are multi-generational, some being the third or fourth generation to live and farm in the area. Several have lived in the same home for more than 40 years.

Many of the industrial jobs left the community in the 1980s and 1990s. The community has gone through various stages of growth, stability and instability in the past 30 years:

*"When I first moved here, I would describe it mainly as a kind of manufacturing, blue collar type of community. We've seen that change a little bit over the years with more of an emphasis now being put on educational climate and healthcare, a little less emphasis on manufacturing. Some by design, some not by design, we've lost some fairly large manufacturing facilities here in the Mattoon-Charleston area that has caused that metamorphosis to occur."*

There was a period of little change in the 1980s to 1990s and then a community renaissance began in the late 1990s. The community has become more progressive with a concerted effort to reinvent itself:

*"Starting in the late 1990s, early 2000s, you saw a little bit of a growth spurt, not big, but just a little bit of a mini-renaissance, so to speak, and I think that's continued until today. Of the 30 years that I've lived in Mattoon, I think Mattoon is more progressive today and has more upside than in any of the other 30 years I've lived here."*

## FutureGen Case Study

Economic development, growth, and change are active goals of the community:

*"They're doing things all the time ... our downtown area just looked horrible. They are redoing the stores downtown, getting some new business in. Downtown got pretty bad."*

There is a strong sense of civic pride in the community and recognition that even if FutureGen might not be beneficial on an individual basis, it does benefit the community as a whole. While residents recognise that growth and change may be necessary, there is criticism by some that Mattoon, like many small communities, can be "cliquish" and "if you are not in the clique, you don't get anywhere".

Educational resources are highly valued in the community. Participation and integration of higher level educational institutions, by way of a two-year community college and proximity to two of Illinois' major four-year universities, bring diversity into the community:

*"There is a segment of the citizenry that's been here for a long time, not interested in change, not interested in moving beyond that which is comfortable and known. The leadership and the folks that they elect to represent them are progressive. I think [the university] helps."*

The community economic development office is very active in considering projects that could bring economic growth to the area and worked with the State of Illinois, the City of Tuscola, the City of Charleston and other regional experts to attract the FutureGen project to Mattoon. Mattoon was sophisticated in its approach to FutureGen and its representatives did their homework and took steps to educate themselves early in the site selection process:

*"Mattoon knew what to do. They could figure it out. They knew what steps they had to take. The community was very gung-ho, very proactive, very supportive. They wanted to do a good job. They wanted the project."*

FutureGen was one of many projects that Coles County has tried to win in the past several years, including other clean coal projects that have yet to come to fruition. The economic development team often submits 'blind' bids for projects that involve little information and no specifics, except the criteria the project developer requires, such as transportation, water or land. FutureGen is one of the largest capital investments for which the community has been considered.

Acting on behalf of the community, the local development office uses agreed criteria and instinct to determine whether to seek projects. It considers the balance between community benefits, challenges, resource allocation (i.e. water and/or land resources), community fit, environmental impact (i.e. pollution potential), economic growth potential, and other factors to decide if a project will be good for the community.

*"Take into consideration what the community would like to have as a corporate citizen and not pursue things that would be a detriment or would use up all of our water and create ten jobs."*

### 6.2 How interviewees became involved in FutureGen

The stakeholders interviewed for this case study range from local to state economic development professionals, neighbors close to the selected site, influential community leaders, farm organisation and national environmental group representatives. The level and timing of involvement in FutureGen ranged from those who were involved from the very early proposal writing stages and actively sought to make Mattoon the successful site, to neighbors and other residents who felt that the project came to them. Some heard of FutureGen through the economic development process, some from the local newspaper, and others at stakeholder meetings.

Respondents highlighted choice as an important dimension regarding their involvement. They viewed the project as a competition that their community was vying to win. The State of Illinois was instrumental in bringing the opportunity of FutureGen to the economic development community, including those in Mattoon. The State engaged economic development teams by soliciting proposals and levels of interest for specific areas that met geological criteria as defined by the Alliance. County-based economic development organisations would then decide to participate in the competition or not. Each community that met site selection criteria could choose to participate in the competition.

By contrast, the neighbors and community members did not have as much choice because the community leaders decided to go forward with the bid for the project. Some stakeholders felt they were faced with a potential

decision that could affect their lives. They then had to choose whether to be resigned to that decision even if they were uncertain about what it would mean for them personally in the long run, or they could become involved. Alternatively, citizens could have formed opposition groups. Little active opposition was voiced through editorials to the newspaper. One neighbor tried to organize neighbors but was unsuccessful, according to interview respondents. Many reported an element of surprise when they first heard about the project. Many citizens learned of FutureGen through the media. Public meetings and stakeholder meetings were held later in the process as proposals were being written and submitted, and as questions were raised by specific groups.

Those actively seeking to bring FutureGen to the community were initially more informed about project details and in fact acted as a primary source of information about the project for community members such as the economic development board of directors, farm bureaus, educators and the general community.

At early stakeholder and public information meetings about FutureGen, community response to the project was highly positive, as was media support. However, initially some neighbors were strongly against the FutureGen project and wrote letters to the editor of the local newspaper and tried to rally neighbors against the project. This was characterized by some respondents as an uncooperative and potentially obstructive approach.

### 6.3 Main themes heard in the interviews

#### 6.3.1 Knowledge and awareness gained over time

Respondents reported that, during the course of the four years, there has been a growth of knowledge and understanding throughout the Mattoon community about CCS, clean coal technology, climate change mitigation in general and FutureGen specifically.

With no previous knowledge of geosequestration or CCS, the local economic developers had to bring themselves up to speed on the subject very quickly to present the FutureGen concept to the executive decision-making body within days of the first information meeting hosted by the State. Their knowledge increased from thinking “sequestration was something you did with juries” to:

*“I can now talk at length about it and the geology at our site and the safety of the process ... and compare permanent sequestration to EOR, or to coal-bed methane, or even to the four finalist sites – the difference in the geology that made sequestration here potentially more doable from a permanent and research perspective.”*

The community “engaged fully on this project and many of them now know quite a bit about sequestration”. Community members email to each other reports related to sequestration or carbon emissions or anything remotely related to FutureGen, carbon, sequestration, or clean coal. The “awareness and intellectual capacity of this entire community now related to sequestration is a lot higher”. Community members were engaged, knowledgeable and aware of related information on a local, national and international scale.

There has been an increase in knowledge of carbon sequestration among the community including schools. “I think the awareness even at the community college, the State University, and the K-12 system is much higher here now.” Public meetings were held at nearby elementary schools. The principal opened the meetings and voiced his support for the project. Parents were informed about the meetings and attended to learn more. Some of those interviewed felt that this was important in raising awareness.

The economic development team and others from the Illinois FutureGen Team needed to learn the concepts associated with CCS quickly with enough detail to be able to convey project details to wide audiences. To accomplish this self-education, they reported garnering knowledge from meetings with the FutureGen Alliance, Department of Commerce and Economic Opportunity (DCEO), speaking with stakeholder groups, the ISGS, and public meetings held during the Environmental Impact Statement process. They read as “much as we possibly could because we knew that we were getting hit with these questions and we really wanted to understand it and be able to answer them”. They utilized trusted resources and project developers, as well as media and reports to gain and disseminate information (ter Mors, 2009).

Many of the neighbors learned about the project from the local newspaper and television. Some had a little knowledge about CCS before the announcement of the FutureGen project. Some were aware that natural gas is stored in the subsurface in the region. Respondents reported that neighbor knowledge and understanding

## FutureGen Case Study

increased throughout the project from limited knowledge to understanding differences between the Illinois and Texas site locations and what gave Illinois a perceived advantage over Texas in some respects:

*"Better than down there. Because of the oil wells? Is that one factor?"*

*"That's what we hear. We heard about the [oil exploration] holes."*

Some neighbors' knowledge of CCS came from what they read or heard in the project process. Two related participants differed in their knowledge and opinions about CCS. The older doesn't believe CCS will work; the younger believes the project can succeed and his knowledge has increased over the course of the project. The younger man attributes this belief to having his questions answered through engagement opportunities. A piece of information particularly important to creating this confidence in the site was seeing seismic results showing the redundant shale seals in the area:

*"I don't understand all the science behind it, but from what I've seen yeah I think it can work ... seeing the actual survey results where you can see down, okay there is one cap, there is the second, there's the third. Now the scientists and the engineers have to go out and be able to drill it, plug it and make sure it stays there."*

The sense of learning over time was remarked upon by several respondents, who cited motivation to understand the personal impact of the project as an important driver for gaining information.

*"I do have a little better understanding ... but it is because I can pick up a piece here, a piece there ... I want to figure out what will happen because you can sit right there and see the plant."*

Those who were in a position where they were called upon to answer questions by the public and other stakeholders reported experiencing a shortened timeframe for coming up to speed about the project and its impacts. They highlighted the RFP process as a driver for knowledge building.

A State representative reported that they educated themselves about CCS in real-time as they worked with the engineering firm in putting together the FutureGen RFP responses for four sites. They also used connections with the ISGS.

*"The [ISGS] helped with the seismic and they helped with ... what is this carbon capture and sequestration? To define it and to educate us about what it is, so that when we were talking with the public, we can say, it is not dangerous. That was huge because there wasn't any outline, any format, all of this was just being put together ... We had the RFP, but it didn't say anything about leases or how much you would pay for a lease or how much area a pipeline needed or how big a space they needed."*

As new issues arose throughout the project, the project proponents had to learn and respond quickly. Additionally, there were many issues for which answers had not been determined. They reported a groundbreaking, front-runner component to the work they did with the consequence that they often had little to no information.

*"Somebody brought up this issue about pore space ... it was the question of mineral rights, and I have mineral rights with coal and gas, but does that go all the way to the centre of the earth?"*

Others reported that access to experts was essential to the learning process:

*"Over the three-year period that we've worked on this project, I've had the opportunity to sit next to some of the experts at different meetings along the way, attend some of the town hall meetings that were held, and have a pretty good handle on what carbon capture or sequestration was all about and how it works. When I first started, I couldn't pronounce it."*

### 6.3.2 Perceived benefits

An important duality exists with respect to perceived benefits of FutureGen locally, regionally, and nationally. A distinction is made between major and minor, local and distal, even direct and indirect. Respondents reported that the competitive nature of the FutureGen process created a scenario in which the community was in a position to assess individual and global benefits that stem from FutureGen. They reported that it is seen as being a research project designed to provide an example of what power generation will look like. The community is seen as having a stake in this and being part of the research being conducted.



*"This is a project designed to be a model internationally for how nations and companies will generate their power going forward from this day on."*

For some, the project was initially seen as a significant job creator, but that perspective changed over time, with current estimates being much lower than originally stated. However, rather than focusing on job numbers alone, some of those interviewed felt that an important feature of FutureGen was that it provided the community with a way to contribute to the region by revitalising the Illinois coal industry and provide global climate change research solutions to the world.

FutureGen offered the opportunity to be a part of something larger than themselves; being part of the solution. The people of Mattoon think this project is about addressing climate change and that "in general climate change is happening".

*"The citizens here hold that in esteem more than the notion that this is just another economic development project that's going to come in and create jobs ... This really is a piece of where we need to go in terms of developing opportunities to use coal to power this globe. People here really support that notion that they're part of something much bigger than just Coles County."*

The potential to participate in a project of international importance and common good were recurrent themes:

*"I think they felt they were doing the right thing for the country."*

*"... generally understood that they were doing it for the right reasons, and were pretty savvy about it all"*

The idea that FutureGen was going to "put Mattoon on the map" and that this small community could make a global contribution was very prevalent in the interviews. Even though the project may no longer be the first of its kind, "folks around here are engaged enough now. They've followed the ups and downs and ins and outs, and they know why ... they still believe that it's a first of its kind. It is going to break new ground."

Innovation and contribution to the future was considered a benefit. FutureGen was seen as creating a new kind of coal plant – "a near-zero emission coal plant ... a way of using coal cleanly" and a source of new technology and innovation, an "effective way of conveying a break with the past". Initially, the main benefit communicated was regarding the "clean coal" or "zero emission" power plant. The sequestration message "became more pronounced as time went on". Images associated with the project include a graphic on the website showing multiple flags from around the world representing locations of the different Alliance partners' global operations.

Pride and contribution are important components of the community perception of benefits as reflected by questions and comments about whether FutureGen will "be first":

*"We were going to be the first ... I think GreenGen and China are going to beat us. I think that when it comes to actual projects the Summit project in Texas at that runner-up site may actually go online first."*

Those interviewed felt that the community demonstrated "savvy" in understanding the project and seemed to understand risks to some degree and "were not interested in the [project] just to make money".

*"They understood the risks and that they were pretty small environmentally, and that the benefits to the globe were pretty huge, and that the benefits for their own economy were pretty strong too; that people would be flying in from all over the world if this was built, and that this could really put them on the map in a way that being a federal prison site wouldn't."*

The perceived side benefits of the FutureGen project focus on the local and regional areas. The community is north of coal-mining regions in Illinois, but some members of the community have ties to the coal industry through family or family history. However, the interviews revealed that climate change mitigation is seen as a major benefit, with a revitalisation of the coal industry, through clean-coal and the utilisation of Illinois coal, seen as a side benefit:

*"To put Illinois miners back to work, they understand that – that is a nice side benefit, but I don't see that as being the driving reason behind their support; I think it is climate change."*

*"We have a surplus of coal. So it is close by, if we can use it anyway, I know it is a benefit. They are not going to use too much other coal, right?"*

## FutureGen Case Study

Originally, the FutureGen project had considered using coal from outside Illinois, which was seen as unfavorable by the local community.

The perception persists in the community that other industry and support systems will benefit from the location of the project in Mattoon.

*"All the support, industry, systems and retail that are going to spring up ... and then the research opportunities that may be here and research firms that may locate here ... it is going to have a positive economic impact ... it is going to change the economic landscape."*

The use of US-based resources was seen as another positive component of FutureGen and a belief that FutureGen would result in a decrease in foreign fuel sources.

Respondents mentioned that information about the benefits associated with the project came from the local newspaper, word-of-mouth, neighbors, and specific stakeholder meetings held for neighbors. Some reported a considerable amount of discussion among the neighbors about who sold their property to the Alliance.

The community, in their opinion, viewed the project with respect to the pros and cons associated with hosting the project. The respondents reported that most of the community wanted the project to come and a few did not. There are people who want growth in the community and others who do not:

*"Some people here in Mattoon want the community to grow and others want it to stay the same".*

In discussing benefits with some neighbors interviewed, a sense of mixed feelings was evident and some could not say if they thought the project would benefit the community because the price being paid was great. The connection between the farmer and the land he farms was apparent in this conflicted view of FutureGen:

*"Why do we need to lose the good farm ground ... you have to give up something very valuable."*

*"For me predictions are 20, 25 years from now the world population is going to increase another 20 per cent. And where we going to grow all these groceries at? If we keep taking land out for, well there's 400 acres right across the road [FutureGen site]. I can sit here and I can see it. Prime farmland. Going to be gone."*

The sense of loss and impact is apparent when the topic of compensation is discussed with stakeholders. Even though farmers are compensated for the land, there are other impacts, such as *"they tear up the arrangement of your ground"* and even though market value is paid for the farmland, there is income lost from years of farm productivity remaining:

*"There is no income loss [compensation]. I can farm that another 20, 25 years. The market value of it will not offset the income that I can make off it in those years."*

Yet, even in the midst of discussion about loss of land and impact of the project on them personally, the interviewees wanted to know about the progress of the project.

Additional side benefits noted by the respondents were regional and local cooperation that emerged as a result of the FutureGen competition process. The cities of Mattoon and Tuscola worked together closely and in support of each other to be successful candidate sites. The cities of Charleston and Mattoon also worked together to provide creative proposal ideas for the site submission – *"something unheard of in the past"*. The project also energized the community and *"brought about a new level of can-do type attitude:"*

*"The aspect of being selected as the site in the United States, I think there is a big boost in Mattoon. It caused a lot of people to rally around on that particular issue, which we never really had before ... even if we don't get FutureGen."*

### 6.3.3 Engagement

Different levels of engagement were used throughout the project. Respondents reported on being engaged in different ways and/or being responsible for driving some of the engagement approaches. From the interviews it was clear that some people chose to participate in the FutureGen process, others chose to observe, and still others waited and/or wanted to be engaged or brought in by the project developers. All respondents agreed that the

project developer, the FutureGen Alliance, and project proponents in the state and the community made public engagement a priority.

Engagement happened in many forums and different sized groups. Public meetings were held throughout the FutureGen process. Some were hosted by the local economic development team in partnership with the Illinois FutureGen Team with participation by the Alliance. These were information sharing meetings that aimed to describe the project and discuss questions from members of the community about the project. Official public meetings were also held later in the process as part of federal regulatory requirements under NEPA. These meetings were hosted by the DOE to describe the project and enable members of the community to comment.

Many of the public meetings were conducted at two new elementary schools on either edge of the community. By having meetings at the schools, a neutral environment in the community, there was ample display and meeting space, allowing students, parents and other community members to attend and actively participate.

*"Having the schools involved, and having the public meetings at the schools brought it in focus for parents of kids in those schools, because they had to become engaged if they were going to take an active position on it, especially the school close to the site. I think that brought people to the table that might not otherwise have noticed as much ... They became educated about the project, then they supported it for opportunities it provides for their kids – not just employment and education, but also the opportunity to have this plant right there in proximity to many of the schools and Lakeland – the community college – and what that means for their kids' awareness of what is going on globally. It brings something right here in our backyard that makes them part of a global initiative and global concerns."*

Most respondents mentioned the role that the media played in information dissemination and airing of public opinions. A lot of information appeared in the local newspaper that explained the project and science. Meetings were publicised in the local newspaper. Information provided included location of the project and *"what they were going to do"* about carbon sequestration and the power plant.

The Illinois economic development office, DCEO, was seen by most respondents as the coordinator of community engagement from the state level. The engagement process was described as very sophisticated and well managed. Specific individuals were mentioned as *"unstoppable, but always able to listen"* and providing *"honest communication on this project"*. Relationships within the state and organisations like the farm bureau were seen as important to the engagement process. Most respondents mentioned that such engagement resulted in these organisations receiving access to multiple sources of information that helped build trust – an important factor to community acceptance:

*"I think a lot of that has actually to do with the Illinois State Geological Survey, which is you know, highly regarded in this state ... I think that the geological survey was a key part in saying yes, this is credible, we can do this, and this site will work."*

A respondent reported that multiple engagement events by trusted sources were important in the FutureGen process, from Washington D.C. to local meetings:

*"I think it is not an accident that the finalist sites were located in states with the strongest geological institutions: the Illinois State Geological Survey and the Texas Bureau of Economic Geology."*

Issues and questions addressed through outreach materials and posters added perspective:

*"A diagram or poster that put in real scale how deep 7,000 or 8,000 feet of material is below the ground, relative to the injection zone and the ground surface."*

Most respondents noted that models were seen as important engagement and outreach tools because they:

*"... made clear what [sequestration] is and how the injection and storage works ... it was just great outreach and it was outreach in a bunch of directions."*

Information presented during engagement opportunities included project overviews, "individuals of particular expertise to talk about particular components of the project", and the ISGS sequestration model. Posters with geological information of the area, open question and answer sessions, the perception of experts' willingness to answer questions, and state support were all factors. Further, openness and transparency were stated as important variables in the FutureGen process, both in information delivery and in the selection process itself. A community leader stated:

## FutureGen Case Study

*"The open question and answer sessions were very beneficial, whether or not perception is reality, the fact that you are there willing to answer those questions in an open forum goes a long way."*

There was a noted sense of pre-approval because the State of Illinois was involved and the "*Department of Energy stamp of approval, which later was removed ...*"

One neighbor felt that the community as a whole was engaged by developers and project proponents, but that he personally had not been directly engaged. He and his son stated they would have benefited from one-on-one engagement in a visit from the Alliance. The son, on the other hand, participated in stakeholder meetings held by the FutureGen Alliance representatives at the farm bureau, breakfasts, project information solicitation meetings and public meetings. As a function of engagement with project developers and scientists, he developed an understanding and trust in subsurface geology. He demonstrated confidence in the scientists and engineers to address technical issues.

Some respondents noted that many of the neighbors are curious, and use every opportunity provided for engagement, including the interview. They asked questions about the project status, chemical interactions of CO<sub>2</sub> and the reservoir, and the fate of stored CO<sub>2</sub>. They want to know if the Alliance can "get enough countries and people involved" to support FutureGen.

Most respondents reported that the neighbors felt it was extremely important to have repeat opportunities to get information from multiple sources. Some neighbors were ambivalent when asked if there were enough opportunities in the process. They also pointed out there is a likely saturation point for information.

*"yes, no, maybe ... how many of those public meetings can you have? You can have [one] every week and then it becomes the same old thing. [If] you are not presenting anything new, everybody quits coming. All of a sudden you've got something brand new going on, now nobody shows up ... but you throw one every six months and then six months later you've got 25 new things that you're going to throw out [there], well that's probably too much ..."*

The need for determining a "*happy medium*" is a component of timing. Farmers brought up timing and season as important factors. Timing can take on two components for stakeholders: time of year and frequency of engagement.

*"Well, and time of year, from us ... you hit me in harvest ... I'm not worried about your project. I've got my own projects."*

Another significant engagement opportunity did not directly involve stakeholders, but was highlighted by a local community member as demonstrating respect for and interest in the community. Having the FutureGen Alliance hold its board meetings in Mattoon demonstrated its commitment. The respondent felt that it made a difference at least "*from a perception standpoint*" likely more than "*from a functional standpoint*". This strategy forged ties with the community and "made FutureGen seem more like it was Mattoon's and wasn't some private entity that was looking at making a profit off Mattoon".

In summary, perceived benefits fell into three categories: Global Leader, Innovation, and Local. The opportunity to be a global leader and part of something bigger than themselves was important to the community of Mattoon. The idea that FutureGen was a first of its kind power plant that held the promise to be part of the solution to climate change engendered community pride. The innovative nature of the FutureGen concept of combining new cleaner coal technologies, IGCC, combined with emissions-reducing technology of CCS heightened the benefit of hosting a first of its kind, research facility within the community. The export of this innovation to the world was also seen as a benefit. The local benefits were originally assumed to be job related, but the actual jobs to be gained was smaller than originally anticipated. However, the promise of jobs built social capital and unified areas in the region to collaborate and work together toward a common goal. The potential of FutureGen to revitalise the Illinois coal industry was recognised by many as an important regional/local benefit.

### 6.3.4 Questions and concerns

Questions and concerns expressed by community members centred on immediate and local impacts. Respondents felt that the main public stakeholder concern was health and environmental safety. Most concerns focused on perceptions of power plants, coal usage, water quality and subsurface conceptions of stored CO<sub>2</sub>.

Respondents felt that neighbors are concerned about their immediate physical environment and how it will be impacted. Specific information about ash and odour was of interest. Nearby landowners feel a certain amount of uncertainty over the process and project and what it means for their future.

*" We're just concerned about – where we're living here, everybody's not the same. You know, people in town, it doesn't affect them like it does us."*

While expressing concern for their personal situation, these respondents recognise that FutureGen is "*probably a good thing for the community ... but it is hard to keep everybody happy*". They have mixed feelings about the project: "*It is harder to keep everybody happy ... things change. It never stays the same.*"

Yet others had a more national focus and emphasised institutions where there is a need for long-term responsibility:

*" We have put a lot of emphasis on technology and research. We have put no emphasis on institutions like a geological sequestration utility that is out there trying to characterize 10 sites in the State of Illinois ... If they were to commercialise five of those, there would be an institution that if you see a CO<sub>2</sub> leak you could call."*

State and local respondents working to promote FutureGen and other respondents discussing the project with community members reported that specific questions about the project included:

- Is it safe?
- Is it safe to bury this underground?
- Is it coming back up?
- Is it going to contaminate my water?
- How are they going to keep the CO<sub>2</sub> underground?
- Will the CO<sub>2</sub> leak back up through wells or cracks?
- Will there be dust or ash from the plant?
- Could the state get agreement from landowners to inject?
- Could the state win project competition?
- How dangerous is this going to be to us?
- What kind of environmental changes are we going to have?
- How much coal dust is going to be floating through the air?
- What type of chemical releases might happen?
- What is coming out in the gas through the stacks?
- How much noise is the coal shaker going to make?
- Coal generating plants are not the prettiest things. How much noise, dust, train traffic will there be?
- What happens in the event of an earthquake?
- Will we have a Lake Nyos-type event?

The respondents felt that the effort to transmit information about the project was very important for addressing questions and concerns and being able to:

*" Make sure people understood how sequestration works and why geologists and geophysicists and scientists believe that it is safe, and the work being done in showing and demonstrating that this is the same formation that natural gas is stored in helped. People are comfortable with that. They know that occurs."*

Respondents felt that information from trusted sources was a key component in providing this information.

### 6.3.5 Perceptions of the project developer and project proponents

**6.3.5.1 Project developer perceptions** – Many respondents viewed the FutureGen Alliance as the project developer and expressed "trust in the Alliance". The community wants the Alliance to succeed and supports its efforts. When the project was cancelled, the community responded with confusion and mixed emotions towards DOE and positively towards the Alliance:

## FutureGen Case Study

*"Folks around here were mad at DOE on behalf of the Alliance and the effort that the Alliance has put into the project, as they were on behalf of themselves [for losing the project]."*

There is, however, some local scepticism of the Alliance because they are "big industry from outside the area". The Alliance is not seen as a local entity, "they see the Alliance as not living here," which affects perceptions of what happens if something goes wrong:

*"If this is an experiment that goes bad, they [the Alliance] are not going to be here anyway."*

Neighbors reported that some people have negative comments and feelings, but these have not taken hold in the community primarily because of transparency, openness and accessibility of the Alliance, Coles Together – the county economic development organisation – and the State of Illinois:

*"The Alliance has been so accessible and because it has been such an open process. Anything that anybody ever wanted access to was provided to them, or information was shared at the Alliance's website or through links that they sent to them. I think the whole site-selection process being open was good. Nobody felt like anybody was trying to hide anything ... The openness has gone a long way to help folks understand that nobody's trying to hide anything and come in and build a project here that is going to be harmful and then leave. The stakeholder meetings were outstanding for getting in early and talking with people, answering questions, and just being accessible."*

Community engagement was seen by all interview respondents as a priority for the Alliance and some of it was conducted through the NEPA process. Also seen as important were stakeholder meetings with specific groups from industry, academia and the farming community.

The frequency of meetings, occurring on a regular basis was noted, including those with special interest groups, along with presentations to US-based and international public service organisations such as Rotary Club, Kiwanis, High Twelve Club of the Masons, and the Exchange Club. Project proponents made "regular appearances making presentations and answering questions and being available".

One respondent expressed disappointment in the Alliance membership and companies not represented:

*"The three largest emitters of carbon dioxide on the utility side are [American Electric Power] AEP, Southern and Duke and none of them are in the Alliance. The Alliance is supposed to add some other utility members, and maybe that will come from other places around the world, but if you don't have those three in the United States, what do you have? That to me says the project has some serious flaws. FutureGen is in need of sharpening its vision and rethinking what niche it is playing ... this is supposed to be a prototype. Eventually it is going to be sold to utilities, and you don't have the three big ones. That speaks volumes."*

**6.3.5.2 State government perceptions** – Some respondents noted their trust in the state government representatives who supported the project. Some found the government more trusted than the companies because they were from the region.

*"I think they trusted the [state] government because they knew who their legislator was and because they knew their legislator, they could go back and say, you said this. They trusted the government more so than the company ... because they were local people that they would see on the street. Those people are going to live in the community, as opposed to a company."*

One feature of having regional experts and project proponents is the ability to convey honestly to others their personal thoughts about sequestration "in their backyard".

*"Would I want it in my town? Yeah. I would not be opposed to having a sequestration site located in my backyard, not that I want to look out and see a power plant, but the location, the sequestration I wouldn't have a problem with. You have to realise that I live in the country and I can see the sun come up and the sun go down, so to have that power plant in the way, that would be a problem. But to have it sequestered, I wouldn't have a problem with that."*

**6.3.5.3 Project proponent perceptions** – When asked who the project developer is, one interviewee responded that there are multiple possibilities including the State of Illinois, US Government, local community and the Alliance. The respondent thought that the community likely sees the local economic development representatives as the developer and that there is trust in those individuals.

*"There were real grey areas there as far as who does what and who gets credit for what and who puts out the press statement and what does it say."*

One respondent viewed the project developer as a "very positive" organisation. He mentions individuals involved in the Alliance by name, an indication that the Alliance has developed contacts and relationships in the community. Key words he uses to describe the Alliance are: good quality, low key, likeable, believable and genuine. These characteristics are important in the community.

*"They've had really good quality, low key, likeable people at the head of the lines which I think has helped a lot, especially in kind of a rural community. I think that has made them come across at least a lot more believable and genuine because I think the perception that you'll get from most people is that they are interested in the project, they're interested in what the project can do, they're interested in Mattoon, they want to see the project succeed and be a very clean facility."*

He noted the structure of the Alliance as an important feature – that the project developer is a group of companies, not just one company. He felt the focus of FutureGen facilities had been on research more than just energy production for commercial purposes.

### 6.3.6 Positive and negative community perceptions

Most respondents saw winning the competition as the most significant positive moment of the FutureGen process. The day of the site selection announcement was a positive turn in public opinion. One neighbor attended the community-arranged announcement event at a local movie theatre with hundreds of other community members. His description of the public response includes earlier reference to cliques in the community:

*"I think [the response] was enthusiastic. The crowd that was there was of course behind the project ... the sort of main clique ... in town that make things happen."*

The selection announcement "shut the community down for a whole day and people were celebrating. That theatre was packed with people who left their jobs and came over just to hear the announcement." Positive perception was at an all-time high when the selection of Mattoon was announced.

*"The biggest single thing was when we finally realised that by gosh maybe it will be built, but there were a lot of minor things leading to that. Articles in magazines, newspapers, articles in Farm Week, which every farmer in Coles County gets it, it's a weekly deal, supporting this concept, pointing out why it was so important. The economy going south, the collapse of the economy, all of a sudden, this looks like a bigger deal than ever. And it is a bigger deal than ever with this bad economy. All that combined make almost a perfect storm for support for it at this point in time."*

Respondents thought that the Alliance would be swayed by political issues in making its site selection. Respondents thought that the community assumed the project would go to Texas because of the connection with President Bush. Community members were surprised when it did not.

The public meetings were also seen in a positive light because they brought attention to the potential of FutureGen. Legislators and senators attended meetings, which raised the profile of these meetings. One respondent thought that the public meetings were a "turning point". Until that time people had a lot of questions, which were answered, and so understanding was built.

*"I think that was the time that the community actually kind of turned the corner, and said yes, this is a pretty cool project ... only 5 per cent of the total community was there."*

About 500 people attended each of two meetings, "about 1,000 out of 20,000, you had a lot of opinion leaders there. You had a lot of people that might have been naysayers because they just are by nature. But once they found out a little bit more about it they kind of backed off."

## FutureGen Case Study

When asked about negative response to the project, several respondents pointed to the ups and downs of the project – on again and then off again – and not the project itself. One respondent could not think of a time when people did not support the project. However, he noted that the community was upset the day the project was shelved by DOE. There were political ramifications from the shelving of the project. The sentiment among community members was to keep the project alive until a new president was elected. Negative public perception about the project arose in conjunction with DOE removal of support.

One respondent noted that the unknowns associated with the project created negative response when the project was first announced. Some respondents mentioned that community members were mixed in their initial response to the project. Some were worried that it would not be possible to “*keep everything underground*”. Concerns were expressed about leakage through wells or cracks. Some were against the project because “*they don’t understand it*”. Yet others “*didn’t have any fears about it*”. One neighbor couple spoke to people on both sides.

*“You throw a project out like this, you’re always going to see the negative first...we’re not going to look at the positive effects of the jobs [first]....”*

Respondents felt that addressing unknowns and providing information was important. Also important was allowing time for information to sink in.

*“It takes time to digest. Everything that is being thrown out [there]. I guess for me that ‘Ah-ha’ moment was when we were sitting there in the Farm Bureau meeting and learning how much room there was in the underground formation to store CO2 and that what was going to be injected was just a drop in a pool...”*

It was reported that a few neighbors close to the site felt very negatively about the project and wrote editorials while trying to “*get a support team against*” the project. Meetings were initiated with specific neighbors so that they could voice their grievances.

*“They had a special meeting with him, so that he could say his grievances and they tried to educate about what [FutureGen] was ... they sat down and listened to him and let him have his opinions.”*

### 6.3.7 Changes in perception: Ups and downs

Several respondents reported that community members are tired of the ups and down associated with winning the project, losing the project, thinking the project will come back and then it will not. The community is tired of highs and lows, which has caused a waning in interest. The potential to lose community support exists by dragging the project out too long. The community continues to show support and is interested in seeing the project built. Some noted the Alliance’s continued support as an important factor: “*I give the Alliance a lot of credit for picking a site anyway.*”

The community was significantly impacted by the swings from being the selected site to DOE distancing itself from the project. The continued support and interest in bringing FutureGen to Mattoon is reflective of the community engagement and support of the project.

*“When the announcement was made that they got it – that was hugely positive. And then three weeks later when it was announced that they weren’t going to – that they were – that, yo-yo or up and down and back and forth ... and for them to be able to keep their support all the time was a real challenge, but most did.”*

### 6.3.8 Personal touch important

Most respondents noted that trusted sources for conveying information were important. Those organisations viewed as trusted resources, such as ISGS, made a difference when people were sceptical of the state because of ethical issues related to the Governor at the time. Additionally, key individuals who became known to community members and leaders played a personal role in building trust and acceptance. This is seen on the project proponent side, which included economic development members of the community, state agencies and other regional experts, as well as the FutureGen Alliance, which made a point of establishing relationships, hosting meetings and being present in the community.



### 6.3.9 Political connotations

Respondents mentioned that there was a political response by Illinois politicians that gave the impression that they would not let the project die and that it would be taken up by a new administration. This was also juxtaposed against the earlier belief expressed by other interviewees that the project would go to Texas because George Bush was president.

## 7 Media analysis

Media articles were collected and reviewed daily from print, television, online and radio by the Alliance team over the entire project. These clippings were collected from national and international sources. Every quarter a firm hired by the Alliance would analyse the clippings and report on percentages of negative, positive, balanced or neutral reports and the main themes covered. Each quarterly report included specific titles and quotes that help describe a theme.

### 7.1 Media analysis 2006

The main themes reported during the announcement of the four semi-finalist host sites (July 2006) were that science will determine which site gets selected because of the rigorous evaluation criteria used and that these criteria were shared openly on the website. Also emphasised were the environmental benefits from using CCS and how the overall plant design is cutting edge and will be the point of reference for other plants/projects interested in addressing climate change. During the rest of the year, media reports had similar themes but additional points made were the economic benefits of the project and a focus to increase domestic energy sources.

The modest negative coverage during this second half of 2006 involved communities that weren't selected as one of the four semi-finalists, that there would be extra noise and rail traffic, the possibility of leakage of CO<sub>2</sub>, a question whether the benefits would be as great as touted, and whether such a new, integrated facility could really be built. International coverage during this period of 2006 was quite modest.

### 7.2 Media analysis 2007

In 2007, media coverage was still quite positive or balanced, with negative stories representing less than 10 per cent of the total (Figure 3). The positive and balanced reports emphasised the same benefits as described in 2006. However, with only two states in the running for hosting FutureGen, there was less coverage and outward support from other states. The coverage was local or national. By the second quarter, the media reported on the public hearings as part of the EIS. By the fourth quarter, the final EIS was released and the Alliance selected Mattoon as the site (December 2007).

Also during this time were the United Nations climate talks in Bali, Indonesia. The new themes reported in 2007 included urgency of schedule, DOE concerns about costs and cost sharing with the Alliance in general, and DOE's decision not to issue the Record of Decision that declares that there are no environmental issues of concern associated with the site – a necessary document to allow the project to proceed. Also raised were issues concerning regulatory uncertainty and liability concerning CCS.

Given that this was a period of candidates running for President of the United States, there was also coverage of candidates' position on advanced coal technologies. During this time, there were reports on investors being reluctant to back IGCC technology given the high cost, and some utilities were cancelling their plans to build such plants. *The New York Times* published a report: "*New type of coal plant moves ahead, haltingly*" which said that DOE is making ambiguous statements about its commitment to FutureGen (Wald, 2007). *The Chicago Tribune* published a report: "*Digging deep for a carbon emission solution*" where FutureGen was mentioned in an overview of the interest in CCS and how it can help reduce carbon emissions (Goering & Greising, 2007).

The coverage around Mattoon being selected as the site was largely positive, with only 1 per cent negative. One article from the local Mattoon newspaper, *The Journal Gazette and Times-Courier*, ran the headline "*FutureGen could end up like '80s supercollider*", referring to concerns that the increase in cost could put the project in jeopardy (Riopell, 2007). International coverage increased during the second quarter of 2007 to between 12-15 per cent and held steady throughout the year and through the second quarter of 2008.

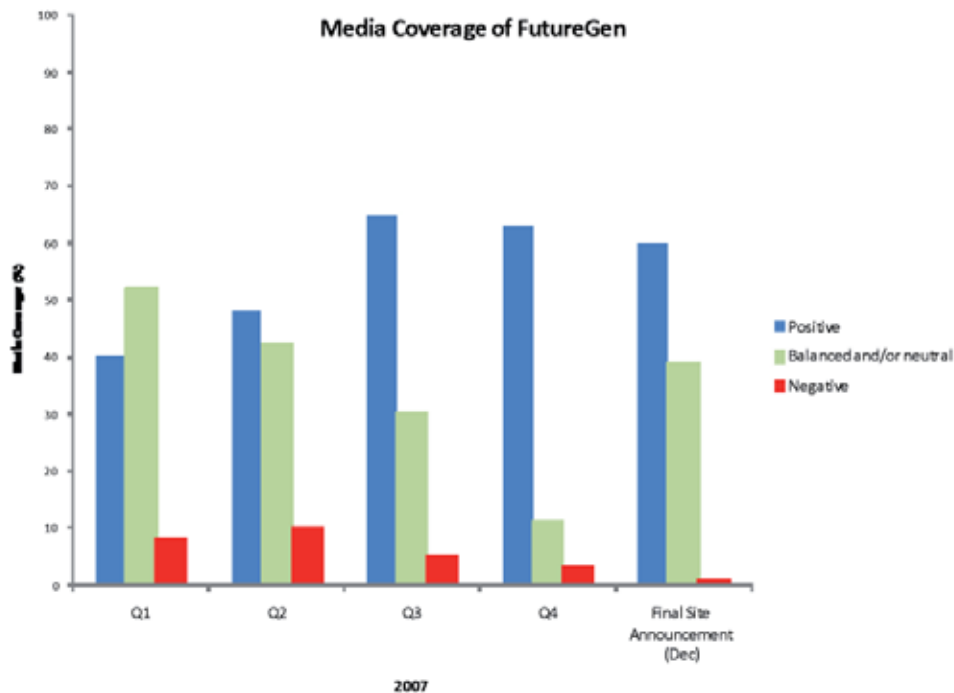


Figure 3. Total media coverage of FutureGen 2007. Includes print, television, online and radio, during Quarter 1 (N = 137), Quarter 2 (N = 105), Quarter 3 (N = 108), Quarter 4 (N = 489) and the final site announcement (N = 313). The final site announcement includes the day of the announcement (18 December) and the few days following until attention died down. Data drawn from quarterly media reports produced by FTI Consulting for the FutureGen Alliance.

### 7.3 Media analysis 2008

2008 was a year of uncertainty but most of the reports were still positive and balanced, with less than 20 per cent negative (Figure 4). Some coverage incorrectly reported that the original concept of FutureGen was dead. In the first quarter, DOE announced its intentions to restructure FutureGen to focus only on supporting the CCS component of a project and it issued a Request for Information. DOE stated that it planned to fund multiple projects and that the four finalists would be eligible but would need to reapply.

Also during this quarter, the US House of Representatives Science and Technology Committee asked for a General Accountability Office investigation into DOE's position on FutureGen to better understand concerns over cost escalations. During this first quarter, there were lots of statements of support for the original FutureGen project including from Governor Freudenthal of Wyoming (Neary, 2008) and Howard Herzog of the Massachusetts Institute of Technology (Biello, 2008). The Alliance put forward to DOE a proposed new cost structure to shift more of the inflationary costs to the Alliance. Reports that picked up this proposed change in cost structure included *"FutureGen developers propose cost change"* (Suhr, 2008), which was published all over the country.<sup>13</sup>

During this quarter there was coverage relating to the withdrawal of DOE funding. The *Wall Street Journal* ran a report: *"US Drops Coal Project"* quoting David Hawkins, director of the climate centre at the Natural Resources Defense Council, who said: "It is really hard to see it as anything other than bait-and-switch by the administration (Power, Smith, & Ball, 2008)." The *New York Times* report: *"Higher costs cited as US shuts down coal project"* quotes Illinois Senator Dick Durbin who said: *"Who can take the secretary seriously at this point? What community, what state, would make an application for a new plant after what we have just been through in Illinois?"* (Wald, 2008).

<sup>13</sup> The *Associate Press* story ran in the following papers, television channels: *CNN Money, Chicago Sun Times, Dubuque Telegraph Herald, Bloomington Pantagraph, Belleville News Democrat, Springfield State Journal Register, MSN Money, BusinessWeek, Houston Chronicle, Journal Gazette and Times Courier, Munster Times, ForexTV.com, Conde Nast Portfolio, Forbes, The Southern*, and *ABC7 Chicago*.

Also CCS was getting more attention as being critically important in national climate policy and such stories were being covered around the world. Finally during this first quarter, new coal plants were being challenged more and more with climate policy being seen as more and more important.

Media during the second quarter of 2008 focused on efforts by the US Congress to keep the project alive. This quarter saw a shift from the focus on FutureGen being about a competition among states and sites to being a political battle fought in Washington D.C. The House of Representatives Science and Technology Committee held a hearing on 15 April with DOE officials to question them about their decision to end support for FutureGen.

Media coverage was split during this quarter between Washington D.C. and Illinois. One Washington D.C. publication, E&E News, ran many reports including: "*Senate appropriators work to save original FutureGen*" (Ling, 2008). DOE ended its cooperative agreement with the Alliance on 13 June and decided that the next administration should decide how to proceed. The Alliance issued a news release: "*FutureGen Alliance will continue to fight to keep FutureGen at Mattoon moving forward*" (<http://www.futuregenalliance.org/news/pressarchive.asp>) on 16 June, three days after Secretary Bodman testified before Congress that DOE had decided to withdraw from FutureGen.

Greenpeace issued its *False Hope* report during this quarter, arguing to stop CCS plants being built (Rochon, 2008). Carbon Control News and The Age (Australia) ran stories about Greenpeace's report that called CCS investments a "*boondoggle*". Barack Obama, as a Presidential candidate, was quoted as saying that cancelling FutureGen was a mistake. Hillary Clinton, as a candidate, supported CCS but did not mention FutureGen. Finally, foreign partners were upset by DOE's move to end its cooperative agreement with the Alliance. India severed its ties with the project and China expressed scepticism.

In the third quarter of 2008, media reports highlighted more action by Congress. Political negotiations and new funding sources were determined. A bill was passed with \$134 million being held for the FutureGen. Reports also covered the Southern Illinois University Clean Coal Review Board approval of a \$2 million award for FutureGen studies. The Alliance exercised its land purchasing options in Mattoon which made the community feel that the project was more of a reality. This coverage occurred during the height of the US and global financial crisis.

Internationally, media coverage dropped to only 5 per cent. One article in Bloomberg, "*Canada to move ahead on 'clean coal' plant after US's fails*", reported that Canada's Saskatchewan Power Corporation has sent out Request for Proposals to 10 companies to build what the report said was the world's first power plant with CCS. Canada, which will spend C\$1.4 billion (A\$1.47 billion) on the plant, will incorporate oil recovery in the plans to offset costs. It said this was a different approach than the US, which had cancelled a similar plant last year. The report said FutureGen was cancelled after costs soared (Whitten, 2008).

Uncertainty continued to be reflected in the media in the fourth quarter of 2008. There was plenty of speculation on how possible election outcomes would affect the future of FutureGen, and the quarter ended with several steps forward for the Alliance and a positive outlook for 2009. FutureGen at Mattoon was tied into the momentum of the campaign season and its future was consistently discussed as a priority policy decision for the next administration. A news conference announcing a final land purchase and successful seismic testing kept the story moving until the barrage of election stories took over.

Newly elected President Obama announced his selections for key energy posts; FutureGen was included in the larger discussion of the President's vision for a green energy economy. There was coverage of Steven Chu as the new DOE secretary and questions to him about what he meant by an earlier comment that coal was his "*worst nightmare*" (WSJ, 2008). Soon-to-be Secretary of Energy, Chu explained that if coal is to remain a part of the world's energy mix, then clean-coal technologies must be developed.

Certain environmental groups established their anti-coal message through strategic advertising, such as the "Reality" campaign. A regional environmentalist with the Clean Air Task Force wrote a letter to the local paper which stated: "*We have less time to address this than we thought. Coal must be part of the solution. FutureGen had to be done yesterday*" (Thompson, 2008).

## FutureGen Case Study

Also during this quarter was an article in the IL Times (Nave, 2008) that mentioned how the Sierra Club, which typically tries to block construction of new coal-fired power plants, won't stand in FutureGen's way. James Gignac, Midwest director of the Sierra Club National Coal Campaign in Chicago, said he believes FutureGen should determine once and for all whether burning coal without accelerating global warming is technologically and financially feasible, and they will not take legal action to prevent FutureGen from proceeding if its air permits include limits on CO<sub>2</sub> emissions.

Other national coverage during this quarter included an Assoc. Press report (11 April) that quoted Howard Herzog from MIT: *"The biggest reason I think that FutureGen mattered was it was the most advanced along the way, and I think there is some time urgency. We start hearing from the scientific community that we need to put the technologies in place sooner rather than later."*

The think tank, Center for American Progress (CAP), headed by Obama's transition manager, John Podesta, released recommendations to Congress that praised FutureGen. The group called FutureGen *"the most advanced CCS project in the world"* and recommended that Congress revisit the project's contract. If the DOE were to support the project again, construction on FutureGen could begin in the next 12 to 18 months and (most importantly in the eyes of the group) create 600 to 700 jobs at the height of construction.

Other reports, such as one on NBC Nightly News, questioned the feasibility of CCS technology, using FutureGen as a poster child for what could have been instead of what could be under a new Democratic Congress and administration. Illinois remained vocal in favor of FutureGen.

Another negative story was a blogging post by Jeff Biggers (Biggers, 2008) called *"Dear Carol Browner: dirty coal will turn green recovery gray,"* in which he described FutureGen as *"shipwrecked"*. While he mentioned the Center for American Progress report *"Green Recovery"*, and its recommendation to the incoming Obama Administration to provide federal funding for FutureGen, he pointed out that Joseph Romm, a senior fellow at CAP *"declared last year that FutureGen was 'either doubly pointless or doubly cynical' given that the 'climate will have been destroyed irrevocably before FutureGen could have accomplished anything useful in the marketplace:'* International coverage was down during this quarter to less than 5 per cent.

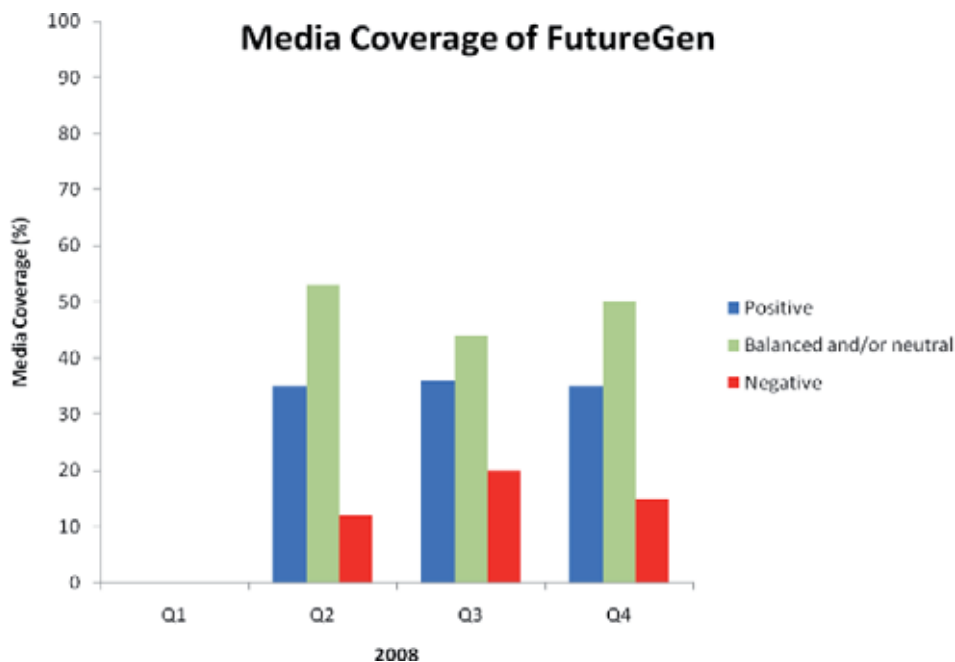


Figure 4. Total media coverage of FutureGen 2008. Includes print, television, online and radio, during Quarter 1 (N = 955), Quarter 2 (N = 202), Quarter 3 (N = 105) and Quarter 4 (N = 116) in 2008. Data drawn from quarterly media reports produced by FTI Consulting for the FutureGen Alliance.

## 8 Conclusions and lessons learned

Outreach and engagement efforts on the FutureGen process began very early and were conducted on multiple levels by multiple parties. Levels of stakeholder engagement included national, regional and local. The parties involved in stakeholder engagement and outreach ranged across semi-finalist sites, occurring from the FutureGen Alliance project development team, regional and local economic development organisations, third-party scientific experts and many others. The following lessons learned reflect perspectives from Mattoon and the entire FutureGen Alliance process.

### 8.1 Competition as motivation

Competition was a critical motivating component of the Illinois FutureGen process. From early in the process, the Illinois Department of Commerce and Economic Opportunity worked with local economic developers, state agencies, national and local NGOs, engineering firms, state and federal congressional leaders, the media, and many others to win FutureGen for the State of Illinois. Furthermore, communities had the opportunity to willingly participate in the competition through self-selection. Public acceptance was seen as important to the Alliance, as reported in the *Results of the Site Offeror Proposal Evaluation*, in selecting a site (FutureGen Alliance, 2006). However, it could have been more of an explicit criterion used in the site selection process.

Lesson learned: site selection processes involving competition and community self-selection can bring enthusiastic communities together with project developers. Project proponents may consider having public acceptance as an explicit criterion in evaluating sites.

### 8.2 Community pride and altruistic benefits

#### 8.2.1 Cultivating community pride

Community pride and the awareness that hosting FutureGen would bring recognition to the community of Mattoon were important factors to most community members. Some actively sought to attract FutureGen and recognised the important economic development opportunities as well as the global impact of hosting a project designed to export technology to the world. Others were willing to consider and eventually accept the project because they recognised that FutureGen is good for the community and represents something larger than the individual.

**Lesson learned:** cultivating community pride through competition, self-selection, education, and engagement can be beneficial throughout the early planning, site selection and site operation phases of a project.

#### 8.2.2 Recognising altruistic benefits

The recognition associated with the FutureGen project brought national and international focus to all communities who participated in the FutureGen selection process. The project focus on research over energy production was a key factor in the development of attitudes and acceptance. The residents of Mattoon "*wanted to be part of something larger than us*". There was considerable pride expressed that this small Midwestern community would be known worldwide and visited by people from around the world. The idea that clean energy technology would be developed and tested in Mattoon using Illinois resources was quite powerful. Mattoon believed it was doing something to benefit the planet and for the common good.

**Lesson learned:** early adopter communities may value altruistic benefits associated with being at the forefront of energy research.

### 8.3 Cooperation and coordination critical

The State of Illinois moved quickly to compete in FutureGen. A coordinated State team was augmented by the local team of economic development leaders from both communities (Mattoon and Tuscola). The State and competing communities worked arm in arm with the stated goal of winning FutureGen for the state, recognising that benefits for one would benefit the other. The spirit of teamwork extended beyond the communities of Mattoon and Tuscola to neighboring cities. Competition between communities was minimal and rather than compete against each other, they sought to attract FutureGen to their region, recognising benefits for both communities if the project came to Illinois. Interviewees commented on how Charleston and Mattoon worked closely together in the proposal

## FutureGen Case Study

(the communities together were to provide the water needed for the plant). The regional education community, consisting of three community colleges and three major research universities, joined together to support Mattoon and Tuscola by providing support proposals to develop curriculum for a workforce development program and find ways to integrate students into research.

**Lesson learned:** creating a collaborative, unified work team that is seamless across geographies (state, regional, local) and political boundaries is critical. Having strong leaders responsible for coordinating the players at the outset and throughout the process is also important.

### 8.4 Understanding specific and varied audiences

Stakeholders come to an engagement from different backgrounds and with different knowledge and perspectives. Some stakeholders welcomed change in their community, others did not. Change in the area represents a significant shift from agriculture to industrial land use. Neighbors expressed a need for time to absorb new information and the notion that their way of life would be altered aesthetically and in other unknown ways by the plant. Some differences expressed may be generational. The older generation may be less engaged and/or obtain information from different sources (newspaper and talking with other neighbors). Older people may, in contrast, have more time available to understand the issues and seek information. The younger generation may look to different trusted sources, such as farm bureau meetings, and may be more engaged because of working with a broader range of community members. Information conveyed needs to be adjusted accordingly.

**Lesson learned:** understanding specific and varied audiences is critical to stakeholder engagement. Background, generational influences and social characteristics of the community may provide increased stakeholder understanding. Seeking input from audiences about what information will be of interest to them and providing that information in a timely manner can be beneficial to engagement. Allowing time for audiences to absorb information and keeping the lines of communication open to answer additional questions as they arise is essential.

### 8.5 Understanding where people obtain information and providing accurate and consistent information

#### 8.5.1 Understanding where people get information

It is critically important to know from where people gather information about a project. One source for the FutureGen project that was very important was the media. The local newspaper – *The Journal Gazette* and *Time-Courier* – has a reporter who followed the FutureGen story from the beginning. He became quite informed and wrote on the topic frequently. Members of the Illinois FutureGen Team and the Alliance team met with the editorial board and the reporter often to ensure they had the information they needed to cover the story. Neighbors who chose not to attend the meetings mentioned that they received much of their knowledge about the project through the local paper. Peer-to-peer networks were also critical in information sharing. For example, farmers are typically members of their local farm bureau where they meet to hear and share news. Also farmers would share information informally at breakfast exchanges and grain silos. The ISGS was seen as an objective source of information and attended meetings associated with all candidate sites in Illinois, not just Mattoon and Tuscola. Regardless of the source, interviewees stated that it takes time for information to sink in. Having multiple opportunities to gather information and ask questions is important.

**Lesson learned:** understanding where people get their information and being prepared to provide it early and often is an important strategy. Messages from multiple sources with potentially varying perspectives may carry more weight.

#### 8.5.2 Providing accurate and consistent information

Early in the FutureGen process a very optimistic estimate of jobs created from the project was published in Illinois. The estimate included spin-off jobs as well as full-time, operational jobs. The Alliance conducted an estimate that yielded substantially lower jobs. The differences between the sets of numbers and the perception that the job

numbers were changing left some stakeholders feeling that they were misinformed. Part of the difference was between construction jobs during the building of the plant and full-time jobs once the plant was up and running. Stakeholders were pleased, however, with the estimate of the ripple effect in how the full-time positions will create jobs and fiscal activity in the community.

**Lesson learned:** release accurate and consistent information to avoid false expectations.

## 8.6 Ensuring access to experts

The Illinois FutureGen Team held meetings across the state, often including a member of the ISGS. Stakeholders appreciated having these trusted experts available to answer questions. Before the DOE official hearings on the proposed sites, the Alliance had experts available for a two-hour informal question and answer period where interested parties could visit different posters and displays to answer any questions they had. The ISGS also participated in these informal sessions and had their cross-sectional model of the regional geology.

**Lesson learned:** ensuring that stakeholders have access to technical experts, not just project proponents, to answer questions is important for building trust. Informal sessions provide stakeholders with the opportunity to become more familiar with the technical issues around a project at their leisure.

## 8.7 Using different engagement approaches

### 8.7.1 Engagement through meetings with similar stakeholders

Meeting with stakeholders early in the process was critical. Based on questions and concerns expressed at meetings, one-page fact sheets were updated to use in these meetings with a flow diagram of how the plant and CCS component would operate. Meetings with groups of similar types of stakeholders provided an opportunity for stakeholders to engage with their peers and speak freely. Groups included community leaders (e.g. public service organisations, city council), educators, prospective neighbors, farm bureau members, state government officials and media.

**Lesson learned:** Meetings with people with a similar background allows a free exchange of ideas and can result in a shared understanding of the project.

### 8.7.2 Engagement in different forums

A range of forums will enable a mix of stakeholders to be reached. Public meetings were held at the local elementary school to reach parents and to serve as a neutral place to discuss the project. Farm bureau meetings were an important place for discussing the project. Geologists, members of the Alliance team and local community development representatives were invited at different points to describe the project and answer questions from farmers. Lunches and dinners with community leaders were used to describe the project and encourage discussion. The FutureGen State team as well as Alliance outreach representatives met with these leaders. Neighbors were also invited to attend an information meeting early to discuss the project. Not all neighbors took advantage of the different forums and the project would have benefited from making more house calls to answer questions.

**Lesson learned:** use a range of forums to maximise the opportunity to reach a diverse set of stakeholders.

### 8.7.3 Engagement through demonstrations

Visually oriented stakeholders benefited from a physical geosequestration model designed and presented by the ISGS, an objective entity. By engaging with scientists and asking questions about CCS while viewing the model, stakeholders were able to envision what would happen to the stored CO<sub>2</sub>.

**Lesson learned:** having third-party scientists (not the project proponent) describing how CCS works provides clarity, credibility, particularly if that organisation is regional and scientists are knowledgeable about it and live in the region.

### 8.8 Transparency is critical

Throughout the project, the development team was commended for having an open process where information was shared broadly, often through the Alliance website. The FutureGen site selection process was made explicit and public from the beginning. An extensive list of criteria was used in evaluating the sites. This information was posted on the website. Similarly, the Alliance posted the comparison of the four semi-finalist sites and its decision to select Mattoon as the site on the website as well. The media coverage of these announcements gave the Alliance much credit for “having science drive the decision” not politics. The Alliance outreach team answered questions to the best of their ability during site visits and followed up with answers that they could not immediately answer via the local economic development leads. Answers to frequently asked questions were posted on the website based on feedback received from stakeholders.

**Lesson learned:** transparency may build trust, encourage input and engage stakeholders by providing information in a timely and open manner.

### 8.9 Demonstrating community presence

Stakeholders generally felt positively towards the Alliance. They thought the concept of a not-for-profit organisation made up of the various companies was a break from the past. They understood how one company might be too risk averse to take on such a new power plant configuration with CCS. One interviewee expressed concern that the membership was a bit weak and that the larger utilities needed to join to make the partnership stronger. Several participants cited approval for the Alliance's focus on science not politics as the driver for the final site selection. The Alliance presence in the community – from having a local office to hosting board meetings in town – was noted by stakeholders as making a positive impression and reducing the idea that the Alliance represented outsiders.

**Lesson learned:** acceptance may be facilitated if project developers spend time in and getting to know the community.



## 9 References

- Biello, David. (2008, 7 February). Clean coal power plant canceled – hydrogen economy too. *Scientific American*.
- Biggers, Jeff. (2008, 22 December). Dear Carol Browner: Dirty Coal Will Turn Green Recovery Gray. *The Huffington Post*.
- Fed. Reg. 71, 145 (28 July 2008).
- Fed. Reg. 74, 35174 (20 July 2009).
- FutureGen Alliance, Inc. (2006). *Results of site offer or proposal Evaluation* (D.O.E. Award No. DE-FC26-06NT42073). Retrieved from FutureGen Alliance, Inc. website: [http://www.futuregenalliance.org/publications/fg\\_proposal\\_evaluation\\_report.pdf](http://www.futuregenalliance.org/publications/fg_proposal_evaluation_report.pdf)
- FutureGen Alliance, Inc. (2008). *About FutureGen: Overview*. FutureGen Alliance, Inc. website: <http://www.futuregenalliance.org/about.stm>
- FutureGen Alliance, Inc. (2007) *Environmental Information Volumes for Candidate Sites* (D.O.E. Award No. DE-FC26-06NT42073). Retrieved from FutureGen Alliance, Inc. website: <http://www.futuregenalliance.org/news/evi.stm>
- FutureGen Alliance, Inc. (2007) *Mattoon Site: Environmental Information Volume* (D.O.E. Award No. DE-FC26-06NT42073). Retrieved from FutureGen Alliance, Inc. website: [http://www.futuregenalliance.org/news/fg\\_mattoon\\_eiv\\_v1\\_master\\_rev1.pdf](http://www.futuregenalliance.org/news/fg_mattoon_eiv_v1_master_rev1.pdf)
- FutureGen Alliance, Inc. (2007) *Tuscola Site: Environmental Information Volume* (D.O.E. Award No. DE-FC26-06NT42073). Retrieved from FutureGen Alliance, Inc. website: <http://www.futuregenalliance.org/news/evi.stm>
- FutureGen Alliance, Inc. (2007) *Final Site Selection Report* (D.O.E. Award No. DE-FC26-06NT42073). Retrieved from FutureGen Alliance, Inc. website: [http://www.futuregenalliance.org/news/fg\\_final\\_site\\_selection\\_report.pdf](http://www.futuregenalliance.org/news/fg_final_site_selection_report.pdf)
- Goering, L. and Greising, D. (2007, 14 October). Digging Deep for a carbon emissions solution. *The Chicago Tribune*. Retrieved from <http://royaldutchshellplc.com/2007/10/14/chicago-tribune-digging-deep-for-a-carbon-emissions-solution/>
- Illinois Senate Bill 1704, 95th Assembly (2008) (enacted).
- Kolata, D. (2005). Bedrock geology of Illinois. Illinois Map 14. Champaign, IL: Illinois State Geological Survey.
- Ling, K. (2008, 8 May). Senate appropriators work to save original FutureGen. *E&E News PM*. Retrieved from <http://www.eenews.net/pm/archive/>
- Midwest Geological Sequestration Consortium, Illinois State Geological Survey (2005). *An Assessment of Geological Carbon Sequestration Options in the Illinois Basin: Final Report* (D.O.E. Contract No. DE-FC26-03NT41994). Retrieved from <http://sequestration.org/research.htm>
- Nave, R.L. (2008, 4 December). FutureGen could be back on track. *Illinois Times*.
- Neary, Ben. (2008, 31 January). Gov slams feds on pullout. *Associated Press*.
- Power, S., Smith, R., and Ball, J. (2008, 31 January). US drops coal project. *The Wall Street Journal*. Retrieved from <http://wsjdn.wsj.com/>
- Riopell, M. (2007, 8 December). Durbin: FutureGen could end up like '80s supercollider. *The Journal Gazette and Times-Courier*. Retrieved from: <http://jg-tc.com/>
- Rochon, E. (2008). *False hope: why carbon capture and storage won't save the climate*. Retrieved from Greenpeace website: <http://www.greenpeace.org/international/en/publications/reports/false-hope/>
- Suhr, Jim. (2008, 14 January). FutureGen developers propose cost change. *Associated Press*.
- ter Mors, E. (2009). *Dealing with information about complex issues*. PhD Dissertation, Leiden University.
- Thompson, John (2008, 22 December). *After a year, what's a few more months?* Letter to the editor of The Journal Gazette and Times-Courier.
- US Census Bureau (2010). *State and County QuickFacts: Coles County, Illinois*. Retrieved from the US Census Bureau website: <http://quickfacts.census.gov/qfd/states/17/17029.html>

## FutureGen Case Study

US Census Bureau (2008). 2006-2008 *American community survey 3-year estimates*. Retrieved from the U.S. Census Bureau website: [http://www.factfinder.census.gov/servlet/ACSSAFFacts?\\_event=search&...](http://www.factfinder.census.gov/servlet/ACSSAFFacts?_event=search&...)

Wald, M.L. (2007, 18 December). New type of coal plant moves ahead, haltingly. *The New York Times*. Retrieved from <http://www.nytimes.com>

Wald, M.L. (2008, 31 January). Higher costs cited as US shuts down coal project. *The New York Times*. Retrieved from <http://www.nytimes.com/>

Whitten, D. (2008, 21 August). Canada to move ahead on 'clean-coal' plant after U.S.'s fails. *Bloomberg*. Retrieved from <http://www.bloomberg.com/>

## Appendix A – Interview guide

Project: International comparison of public outreach practices associated with large-scale CCS Projects

1. Tell me a little about you, your prior experience and what brought you to the project?
2. [*For those related to project INDUSTRY, GOVERNMENT, RESEARCHERS, ETC*]  
What was your specific role in relation to the project XX? Why did you get involved in that role?  
  
OR  
  
[*For others in the community: LOCAL COMMUNITY NGOs, OTHERS, ETC*]  
How and when did you first hear about the project?
3. How would you describe your relationship to the local community?
  - a. If multi-generational, going how far back?
  - b. Do you own/rent/work in the subject community?
  - c. How long have you been in the community?
4. How would you describe/(characterise) the/your local community?
  - a. Close knit, rural, urban, in decay, vibrant, etc. Can you provide some examples that demonstrate this?
5. What do you know about sequestration/carbon capture and storage? What is your level of expertise, experience with CCS (country specific)?
6. Did you know about sequestration/carbon capture and storage before or after learning about the project in your community?
7. What were the benefits that the developers communicated about the project?
  - a. How were they presented?
8. What do you think were the benefits of the project to the/your community?
9. How did the community perceive the benefits?
10. What do you believe were the main questions/issues raised by stakeholders in the community?
11. What is the community perception of the project developer?
12. Was community engagement a project priority? How was the community engaged? What information was presented about the project?
13. Can you think of an event or circumstance when things related to the project and how the public viewed it went very well?
14. Can you think of an event or circumstance when things related to the project and how the public viewed it went poorly?
15. Was there a particular event that marked a change in the level of public acceptance towards the project?
  - a. What happened?
  - b. [*IF INTERVIEWEE IS RELATED TO PROJECT*]  
How did you respond?
16. What other information would stakeholders have liked to have heard or seen? a. Were there any unanswered questions?
17. Would you be willing to provide educational background information for the purposes of this research?
18. How long have you lived in the community?
19. Is there any other information you believe might be important to understanding your role in the community.

