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A Multi-level, Multi-platform Approach to Communications on the South West Hub CCS Project

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Abstract

The multiple levels of engagement required for any project operating on individual landholders' properties and within a broader community necessitate some ranking of stakeholders. Add to this the various tools and forums that represent a multi-platform delivery utilised across the engagement level spectrum, and you have a complex and variable approach to communications. The South West Hub's (SW Hub) challenge is to appropriately engage with those many and varied stakeholders in a manner that is inclusive, relevant and responsive.

The SW Hub operates within the Western Australian Government's Department of Mines and Petroleum (DMP). A key strategic outcome for DMP is the provision of a proactive and targeted engagement that is valued by stakeholders and improves the outcomes delivered. A priority contribution to achieving that outcome is the development of communication and engagement plans that are specific to stakeholder needs.

With the SW Hub looking more and more like an opportunity for the geological storage of industrially generated CO_2 in Western Australia, the need to keep the community and other stakeholders informed and engaged is, and remains, paramount.

This paper explores the SW Hub's communications strategy which, between 2011 and 2016, has focused on familiarisation and education across formal and informal, general and highly technical platforms, with a view to normalising Carbon Capture and Storage (CCS) and therefore contributing to gaining community acceptance of the concept.

Peer-review under responsibility of the organizing committee of GHGT-13.

Keywords: South West Hub; community engagement; communication; multi-level; multi-platforms

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1. Introduction

As the international language about the carbonisation of the earth's atmosphere evolves from envisioning a low carbon future, to a zero carbon future and beyond to a negative carbon future, how do we communicate the idea and purpose of a Carbon Capture and Storage (CCS) feasibility project in a community where climate change is a distant concept, if it is accepted at all?

As manager of the South West Hub (SW Hub) CCS project, the Western Australian State Government's Department of Mines and Petroleum (DMP) has been tackling the problem of knowledge sharing in a community for whom CCS is generally a new, though emerging, concept. A key strategic outcome for DMP is "Proactive and targeted engagement that is valued by stakeholders and improves the outcomes delivered by DMP." A priority activity emerging from that outcome is to "Develop communication and engagement plans that are specific to stakeholder needs." This engagement should be inclusive, relevant and responsive [1].

Any communications strategy should take into account the economic, historic and social context of the community it embraces. The contextual setting for the SW Hub project is dominated at a local level by the cyclic nature of mining, the familiarity and hardships of farming and increasing awareness of environmental issues sitting within the wider international forum of tackling atmospheric carbon.

The enduring foundation of the SW Hub Communications Strategy has been openness and accessibility for anyone interested, with a proactive approach to offering opportunities for engagement. This is achieved by delivering constantly evolving key messages which inform on project activities and respond to community feedback, through forms of communication targeted at specific levels of familiarity and understanding.

Communicating a CCS feasibility project centres on landholders, and must cross the spectrum, from school children through all levels of community knowledge and understanding, to the scientific circles of the international CCS world.

Landholders are the most important stakeholders because they are the most immediately affected during the project, and because they stand to be the most affected if geosequestration becomes a reality. Landholders in the target area receive the most direct and detailed information about each of the data acquisition stages.

With the cooperation of landholders, the SW Hub has accomplished a series of significant data acquisition projects between 2011 and 2016, including 2D and 3D seismic surveys and four stratigraphic wells. Raw data and research are published for each stage, as are the subsequent analyses and modelling which have consistently confirmed the target Lesueur Sandstone formation is a potential Carbon Dioxide (CO_2) reservoir.

The SW Hub Communications Strategy focusses on landholders at the centre of the target audience. The next level of detail is shared with representatives of the community, through local government and through the Lesueur Community Consultative Committee (LCCC), which serves to both inform community members and facilitate feedback on aspects of the project.

Stakeholder engagement is planned and recorded to ensure all levels of government, as well as key industries and community groups are kept informed about the project, within the context of striving to increase the number of people who have knowledge about, and are familiar with CCS as a technology to tackle global warming and the SW Hub as a CCS feasibility investigation.

The *Sustainable Futures - CarbonKids* program developed by CSIRO, and subsequently sponsored by DMP, has proven to be an appropriate match for the SW Hub; as an opt-in educational program for schools which meets the requirements of education curriculums and has increased knowledge about CCS and the SW Hub locally and internationally.

St Michael's Catholic Primary School in Brunswick Junction produced a book for CarbonKids titled *'A Day in the Life of a Carbon Atom. Starring: Adom.*' [2] which is written by children for children. This book has helped many children, and their parents, develop an understanding of geosequestration. The English edition has been shared with several countries as well as being translated and published in Japanese and Chinese languages.

The all-embracing communication medium is the website *dmp.wa.gov.au/CCS* which is a portal for short films and documentation at all levels; providing an overview of the project and its various stages, as well as links to everything from the "Adom" book to peer reviewed research papers. For those seeking the most project detail, the website includes links to the West Australian Petroleum Information Management System *dmp.wa.gov.au/WAPIMS*

– an information management system providing access to raw data and research information which can only be interrogated by specific scientific tools and specialised computer programs.

Information sessions held before and after data acquisition stages have been open to anyone with an interest in knowing about CCS, and embraced various forms of communication with presentations, graphics, banners, brochures, rock samples, reports and occasionally a giveaway item on offer. Guided bus tours were made available during activity stages of the project and stands attended at local agricultural shows, where a particular aspect of the project became the focus.

'Being there' plays a role in ensuring that, while information at all levels is available to anyone, delivery can be tailored for an optimum match with each audience and individual. Maintaining a physical presence and offering opportunities to converse face-to-face with people working on the project encourage familiarity and trust, and are integral to the SW Hub's Communications Strategy.

This paper explores the South West Hub's approach to communications between 2011 and 2016, employing a combination of informal, formal, general and highly technical platforms to deliver key messages across various media with the aim of normalising CCS and gaining community acceptance of the SW Hub.

2. Location and Demographic Landscape

2.1. South West Hub location

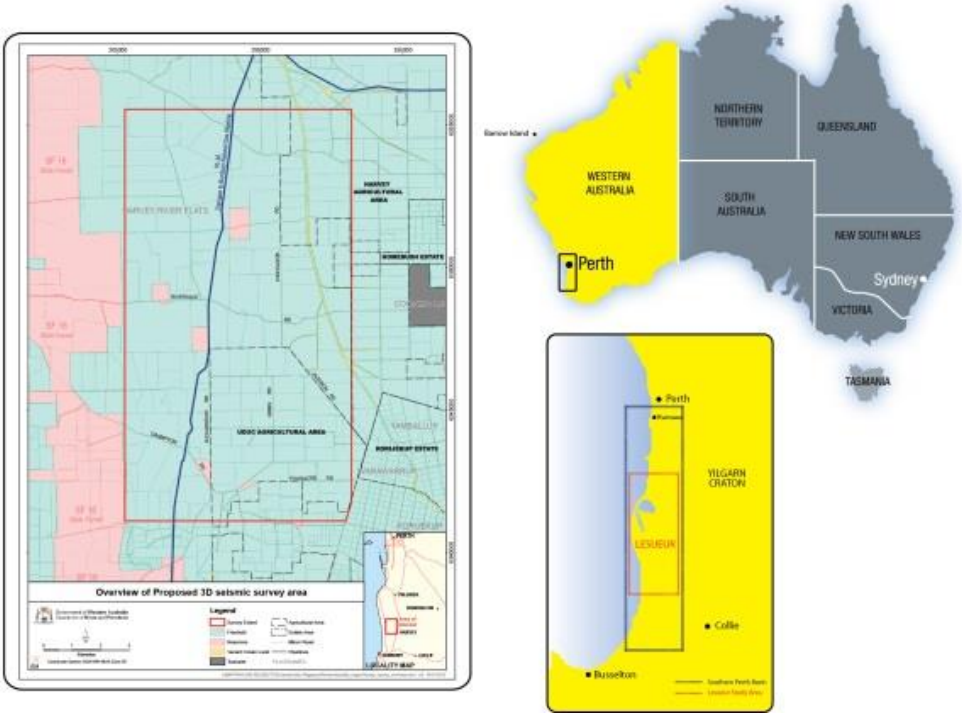

Fig. 1. The South West Hub area of interest lies approximately 140 kilometres south of Western Australia's capital, Perth.

The SW Hub project is investigating the suitability of the Lesueur Sandstone formation for the permanent storage of industrially generated carbon dioxide.

National studies identified CO_2 sources and potential geosequestration sites around Australia in the early 2000s, one of which was in the sedimentary Perth Basin lying along the coast of Western Australia.

By 2007 the government had commissioned a South West regional study which focused on the stratigraphy of the Harvey and Waroona Shires, midway between the industrial centres of Kwinana and Collie.

A Business Plan, including a Stakeholder Engagement Plan, was developed to support the business case put to the Australian Government in 2010 for an integrated CCS project which had the potential to prove containment without a conventional seal.

The town of Harvey is located 140 kilometres south of the WA State capital, Perth, and has a population of 2600. The surrounding Harvey Shire is a bucolic agricultural and horticultural area producing quality dairy, meat, fruit and wine. What is important to this community is the ground itself, and its capacity to support livelihoods and lifestyles on quality farm land with clean air and a good water supply.

The area of interest to the SW Hub is to the north-west of the Harvey town site where two significant stratigraphic features occur. Firstly, the target Lesueur Formation is closer to the surface than elsewhere in the Perth Basin. Secondly, the Yarragadee Aquifer, the South West and Perth's most important potable water source is not present.

2.2. Demographic landscape

The SW Hub project team is charged with conveying the concept of geosequestration to a public whose knowledge and experience of the underground has been mining: mineral sands mining, bauxite mining, gold mining, lithium mining, fly-in fly-out (FIFO) to the State's North West for iron ore mining and gas extraction.

During the first decade of the 21st Century, the Western Australian population experienced mining as a steady source of growing wealth; in the South West a richness of bauxite and mineral sands was extracted from underneath native bush containing endemic species such as jarrah trees; in the North West the red earth is rich with iron ore.

From about 2009, when most economies were languishing in a post-Global Financial Crisis malaise, mining investment in WA skyrocketed, fuelled by record commodity prices. This meant the SW Hub Communications Strategy was carried out during, and in the wake of, a once-in-a-century mining boom that dominated the economy and caused the biggest Australian population migration from east to west since the Western Australian gold rush of the 1890s.

Combine this mining-centric community with a concerted campaign against the gas extraction practice of hydraulic fracturing (known as fraccing), and the general response to any one of a number of prompts is: "Is it fraccing?" This is the most common response to: "Have you heard of CCS?" and "Do you know of the South West Hub?" and the single most asked question by people as they start to survey the banners and core samples on display at SW Hub information sessions or stands at local agricultural shows.

"Is it Fraccing?" illustrates some of the challenges in gaining community acceptance through familiarity and trust in a social environment where knowledge is disparate and often selectively based on popular issues. This paper will explore how the answers to this and other questions have been tailored for various levels of understanding across multiple platforms in order to engage the community and the other SW Hub stakeholders.

Project teams tend to focus on technical matters; however, geology is what it is. The community on the other hand is where attitudes can shift and change, and ultimately this will influence project approval, which is why community engagement and communication should be a significant focus for CCS projects.

This paper explores multi-levels of engagement as defined by a ranking of local stakeholders and the communication tools and forums, or multiple platforms, used across the engagement level spectrum in order to appropriately engage with those stakeholders.

3. Engagement Starting Points

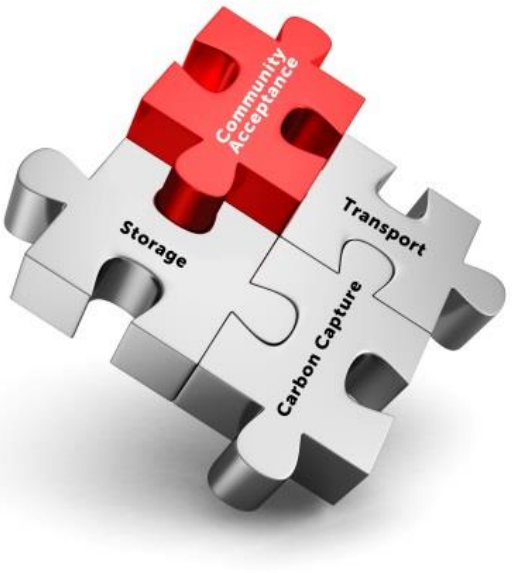

Fig. 2. Community acceptance is as vital to success as the physical and infrastructure elements of any CCS project.

Well planned and executed community engagement strategies may be applicable across various projects and similar communities; but it is impossible to ignore local knowledge as a keystone to the success of an over-arching strategy.

Local knowledge works in different ways: Strategists and project leaders may apply a familiarity with, and knowledge of, the community to create a relevant hierarchy of stakeholders and other aspects of a successful community engagement strategy. A community-held familiarity and trust developed by those project leaders through years and even decades of ethical practice, active presence and reliable behaviour can only be a bonus to a project.

Nomenclature plays a pivotal role in public perception and especially influences first impressions. In this area some local knowledge has proven its worth within the SW Hub project. The stratigraphic feature which is most suitable for CO_2 injection is referred to by geologists as the Harvey Ridge, but the community is more familiar with a residential subdivision also named Harvey Ridge.

Using this name to refer to the stratigraphic area of interest may have resulted in the community assuming the CO_2 injection target was in the middle of a housing estate. Therefore, after the release of the 2007 regional study, the project's target reservoir became the Lesueur Sandstone and the Harvey Ridge along with other terrestrial names borrowed for the stratigraphic underworld were no longer mentioned.

By 2012 it became obvious that the rather cumbersome nomenclature of the original name "The Collie-South West CO_2 Geosequestration Hub" (Collie is the nearby coal mining and power generating town, the source of much of the CO_2) needed to be consolidated and the project became the South West Hub. This is a more inclusive name, embracing a wider community and reflecting the general project area rather than naming a specific town.

For similar reasons, geosequestration was dropped in favour of CCS in a range of communications materials produced for the project including brochures, articles, banners, research reports and *SW Hub Update* newsletters.

While the SW Hub has benefited from local knowledge, and indeed the employment of some level of local knowledge is encouraged for all projects, it is not the purpose of this paper to further explore this obvious benefit; it is to paint a picture of a successful CCS project communications strategy being conducted in Western Australia.

3.1. Project Activities

The SW Hub CCS feasibility investigation and its communications strategy began in earnest in 2011 when the project and the community were introduced to each other through an 'Energy Transformed' workshop conducted by the CSIRO's Science into Society Group, the results of which are available in the document *'Results from Collie CCS Hub workshop: What the locals think*?' [3].

A few months later, in June 2011, the SW Hub became the first project to be funded under the Australian Government's CCS National Flagships; a program managed by what is now the Department of Industry, Innovation and Science.

Funding was awarded for pre-competitive geological data acquisition, preliminary studies (including risk assessment, social impact assessment, a pipeline study and an environmental impact statement), project engineering and management, with further funding to be provided as the project proceeded.

Between 2011 and 2015 a series of stage-gated data acquisition projects began with a 2D Seismic Survey followed by a 2,945m stratigraphic well (Harvey 1), a logistically complex 3D Seismic Survey and a further three shallower wells. The results from this data acquisition added depth to our understanding of the Lesueur and confidence in its storage capacity.

Establishing a solid community engagement foundation made it easier to withstand opposition to the proposed 3D Seismic Survey, which came in 2013 from a handful of landowners who brought their own legacy issues with industry and government into the public arena.

"New and emerging technologies often come with an inherent social risk that if not well managed, can heavily impact their deployment.", according to Peta Ashworth who reviewed the SW Hub community engagement strategy in 2015 following the successful completion of the 3D Seismic Survey [4]. The review recommended continuing to evaluate activities, make changes and "respond to needs being expressed by the community."

From the beginning there has been an overriding consensus, among the project team and the two levels of government funding the project (WA State Government and Australian Government), that the SW Hub be open and welcoming to anyone with questions or comments about the project. The task is to foster familiarity and trust through engagement that is inclusive, relevant and responsive and thereby encourage community acceptance of the project.

4. Multi-Level, Multi-Platform Communications

The series of stage-gated data acquisition projects began with the 2D Seismic Survey conducted along local roads soon after the initial community engagement workshop in 2011. In the lead-up to the on-ground activities, letters were delivered to every household along the route, advertisements were placed in local newspapers and posters displayed at the Shire offices and local community notice boards.

Yet, even as the geophones were being laid out and the vibroseis vehicles were being driven along the roads, locals were asking; "What is this for?" As one householder told the SW Hub project manager, "Yes I received a letter, but I threw it in the bin." The lesson learnt from this is that direct personal contact is important.

Based on advice received from the analysis of the 2D Seismic Survey, the site for the 2,945m deep stratigraphic well, Harvey 1, was identified in the Shire of Harvey, near the adjoining Shire of Waroona to the north.

Waroona Shire has consistently been included in published materials such as *SW Hub Update* newsletters and project publicity because the original project area covered Harvey and Waroona shires. Because of its proximity to the project Waroona Shire remains a stakeholder, though at a distinct level from Harvey Shire.

The results of Harvey 1 were published, drawing attention to the outcomes supporting the continuation of the data acquisition program, and immediately following the stratigraphic well site selection process, community consultation was undertaken to both to brief the community and to ensure that views from the community were obtained.

While the hierarchy of community engagement begins with the landholders, it swiftly moves to the Lesueur Community Consultative Committee (LCCC). Established in mid-2011, the LCCC consists of self-nominated community members, some of whom are landowners from the area of interest, along with representatives from local government and nominees from local Members of Parliament.

The LCCC provides a forum for high level detail and discussion about the South West Hub's plans, activities and results. Within the LCCC a classic contrast of needs exists, as the members wish to see the end result up front while the project team is involved in data acquisition, analysis and developing the project.

LCCC meetings allow open discussion about the SW Hub's plans and provide the opportunity for members to gain an overall view of the project, ask questions, make suggestions and hear about the results of each stage of the data acquisition and the outcomes of research. The questions asked and the thoughts provided by the LCCC members are highly valued activities which connect the SW Hub team to informed and interested community members.

The creation of the LCCC has been a valuable spoke in the communications wheel, and although it has not necessarily produced a group which will advocate for the project in a pro-active manner, it has created links into the community and brought forward a range of opinions about each stage of the project, which has been mostly positive.

4.1. Multi-Level

In this context, levels of interaction can be considered as concentric rings expanding out from a central core of communication focus targeted at landowners and residents directly affected by the project and into successively broader communities. Please note that this paper does not cover the engagement needed for regulatory approval.

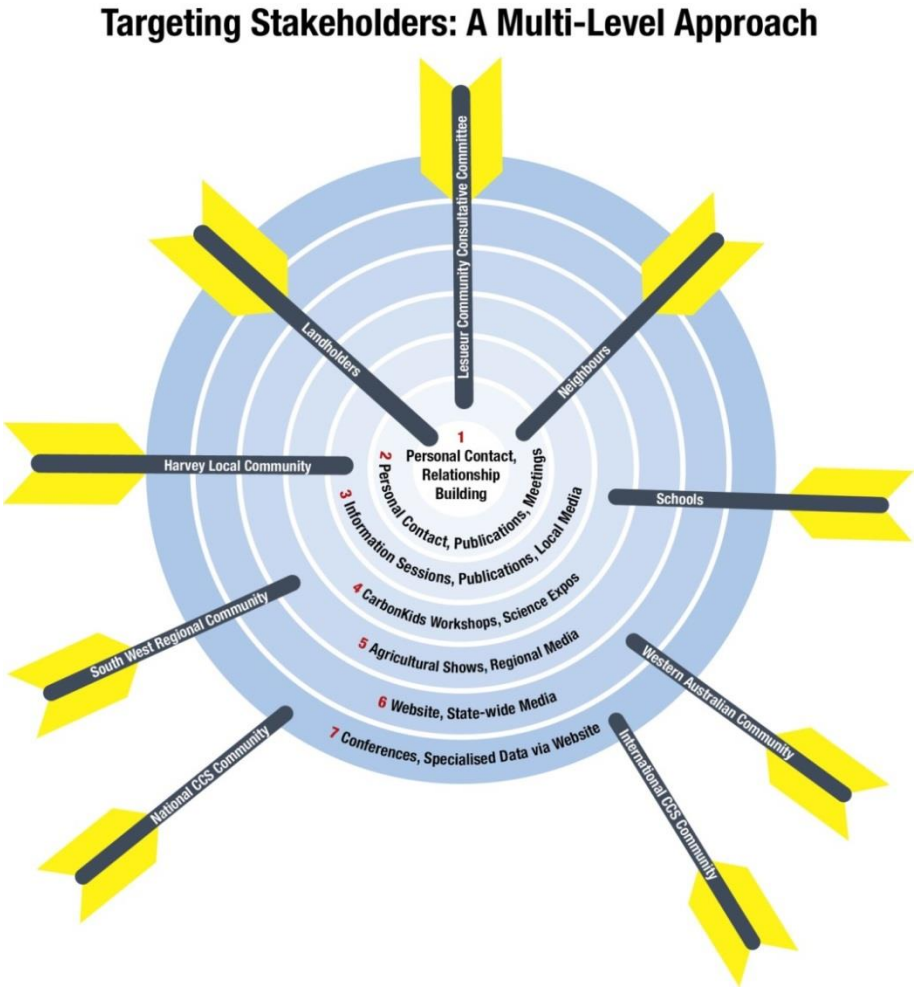

Fig. 3. Communication types/styles are ranked according to their importance to the project stakeholders.

Level 1 Personal engagement is the central focus for directly affected landholders, given direct communication through regular meetings, personally addressed letters and a range of information material which may include pamphlets and data sheets, with personal replies to questions.

For instance, in the lead up to the 3D Seismic Survey many individual contacts were made with landholders of property within the 115km^2 data acquisition area [5]. They were invited, though personalised discussions and invitations, to public communications events such as information sessions and regularly informed about project developments. Advice given prior to the 3D Seismic Survey was that three to five contacts would be necessary. In fact the average number of personal contacts with landholders was twelve.

Level 2 represents the neighbouring landholders whose properties adjoin those directly affected by project activities. Neighbouring landholders were also personally contacted by a land access team contacted to the SW Hub and kept informed through personally addressed letters and publications. This level of engagement included either the few immediate neighbours for a stratigraphic well, or the many immediate neighbours for the 115km^2 covered by the 3D Seismic Survey.

Level 3 embraces the Harvey Community of several thousand people who receive information through presentations to community groups, such as Rotary and Lions, and can access information through local media, especially the local newspaper where advertisements are placed and news about the project reported. Open public Information Sessions were held about the project and to encourage face-to-face engagement.

Level 4 is a level of engagement specifically for schools which spreads throughout the wider South West regional community. The SW Hub is engaged through science expos for school-aged children and has some direct involvement through DMP's sponsorship of the CSIRO's "*Sustainable Futures – CarbonKids*" program which is an opt-in program for schools to fulfil sustainability elements of the curriculum.

Level 5 is engagement with the regional community aimed at establishing the project as 'Being seen as part of the community'. Project communications materials are displayed in booths attended by project representatives at local agricultural shows held in Harvey and the nearby town of Brunswick Junction. Both of these shows are well attended annual events showcasing local produce, livestock, industries, enterprises and projects. Advertisements and media releases are created for regional media.

Level 6 is the all-embracing website which allows access to projects overviews, details of specific project stages, movies and publications about the project and summaries of research and modelling. Advertisements and media releases are created for state-wide media.

Level 7 recognises the SW Hub's importance in the development of CCS within Australia and around the world. The project has been engaged with the Australian CCS community through National CCS Week and a range of CCS-based organisations, and with the international CCS community through conference presentations and sharing communications resources such as the 'Adom' book. The project has ensured that once the acquired data has been processed it is made available through the website, though some specialist knowledge is required for interpretation.

4.2. Multi-Platform Communications

Key messages are developed for the Project at any given stage, and these are refined for each activity to ensure they are relevant to each audience. Key messages ensure consistency and allow the project team to reinforce each other's comments.

Communication can be across a range from the personal and direct to the broad and indirect. Some questions require investigation and a follow-up response. Sometimes many different types of communication are required with an individual or group in order to convey the message or purely to pass over information. It is recognised that for some, there will never be enough information.

Personal engagement is the single most important platform. Landholders are the most significant stakeholders in the SW Hub community engagement strategy. Regular face-to-face meetings are held with the landholders, and their neighbours, directly affected by the project allowing a free flow of information between the parties in an attempt to identify win-win outcomes and respond to requests. These meetings may include members of the project team as well as the Land Access Team.

Direct engagement is provided through personally addressed correspondence, including hard copies of published information and newsletters, information sheets and invitations to events, as well as opportunities to comment on the project.

High on the stakeholder list is the LCCC whose members are among the first to be informed of announcements relating to the project. Members have an early opportunity to comment on these announcements. But this is also indirect as LCCC members share their knowledge, information and concerns with other members of the community.

Inclusion in broad knowledge about the project is spread through public events, such as information sessions about SW Hub data acquisition stages and manned display booths at local agricultural shows. These can focus on particular stages of the project and often these booths are shared with research partners such as CSIRO.

Fig. 4. Displaying and demonstrating project equipment at local agricultural shows is an important component of South West Hub communications.

Presentations as well as question and answer sessions are booked with community and industry groups and include an invitation to contact the project with further queries.

As the project is stage-gated, a website was developed at www.dmp.wa.gov.au/ccs to provide ease of information flow and present relevant information in an accessible format. This allows large amounts of information from each stage to be accessed as along with overall summaries of each stage, however this requires the individual to investigate on their own behalf.

One benefit of the website is that it clearly illustrates how the SW Hub sits under the umbrella of the DMP and therefore the Western Australian Government. The website contains links to other platforms allowing the release of all the technical data on the www.dmp.wa.gov.au/wapims site. All the project technical information is stored here to satisfy public data release requirements and for those individuals and groups that seek the most detail. This is for the more technically minded and, in many cases, only those with the relevant software are able to interrogate the data, but it is published for the common good.

Communication tools used by the SW Hub include a range of publications such as booklets, banners, pamphlets, information sheets on specific stages of the project, and SW Hub Update newsletters which combine news about activities and results with local human interest articles and facts about CCS.

Project reports and research results are distributed to relevant stakeholders and local libraries in printed format, while all publications can be downloaded from the website in pdf format.

Articles about the project's progress have been written for publication in State and national publications, media releases prepared, some specifically for local media such as the local newspaper in Harvey and the regional radio (ABC South West).

Despite the recent rise of social media, old-fashioned forms of communication which have withstood the test of time remain effective for the project. Posters were developed and placed on local noticeboards to inform the community about seismic surveys and well drilling.

The print media is used to advertise opportunities to participate in information sessions and to attend guided bus tours to see the project's data acquisition projects in action. Media releases about aspects of each stage are distributed to relevant local, regional and State media.

The SW Hub is part of the international CCS community and this is maintained through visits to other CCS projects, networking with industry representatives and attendance at national and international conferences.

This network proved valuable prior to the 3D Seismic Survey, as it led to a visit to WA by a dairy farmer associated with CO2CRC's Otway demonstration project in Victoria. The visit, which included informal barbecues and information sessions, enabled discussions with Harvey landholders about his experience hosting a CO_2 injection site on his family property, which included basic, everyday essentials such as the need to keep curious cows at bay.

This multi-level, multi-platform approach allows an efficient allocation of limited communications resources to maximise inclusion, foster familiarity and trust and in doing so encourage community acceptance of the project.

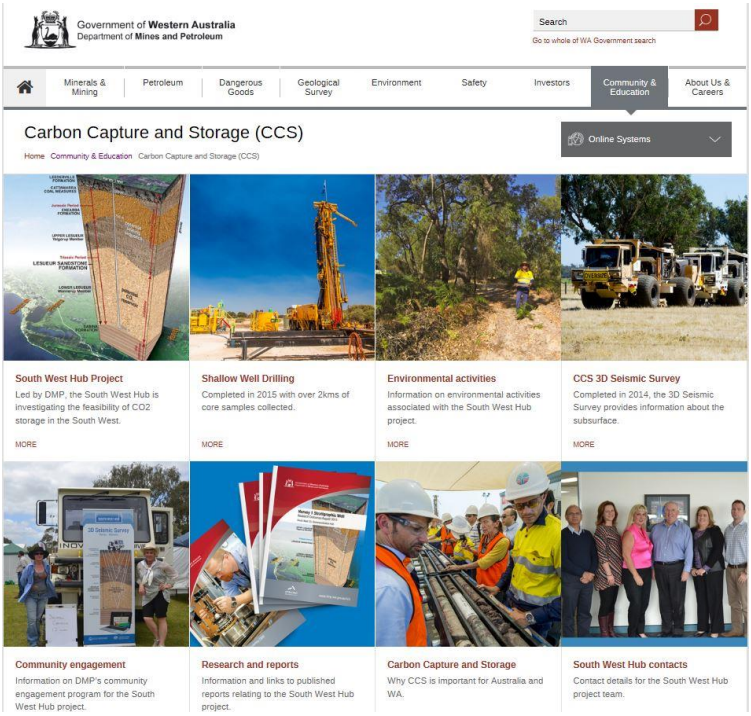

Fig. 5. A complete and informative website is critical to communication.

4.3. Future Challenges of Social Media

Activism on social media has not been an issue for the SW Hub to date, most probably because the use of social media is at a low rate among the demographic of landholders in the rural areas of Harvey.

However, some aspects of the DMP portfolio receive attention from individuals well versed in social media. Attention is often focussed on perceived environmental impacts or land access and property rights.

The challenge for the SW Hub going forward, will be to effectively monitoring social media and identifying what involvement the project would have in terms of making comments or responses, which would need to comply with any developing social media guidelines for government departments and agencies in this rapidly evolving area.

5. From Local Communication to International Communication

Fig. 6.(a) Minister for Mines and Petroleum, The Hon Bill Marmion, releases the Adom book at St Michael's School in 2014; (b) the Adom book launch at the Japanese Weekend School in 2015.

DMP support for the CSIRO *Sustainable Futures – CarbonKids* program for students in Year 6 to Year 10 has introduced many students to CCS and has enabled school level practical demonstrations of the storage concept.

Sustainable Futures – CarbonKids is a national teaching program for school children, developed by the CSIRO, which includes teaching about CCS. Schools have an option to run the program, either within one school or as a combined schools workshop. This program is sponsored by DMP in the South West and involves 25 local schools in the South West of the State. It is not unusual to hear adults at the local Harvey Agricultural Society Show say they had heard about the SW Hub or CCS from their children.

A Day in the Life of a Carbon Atom: Starring Adom is a children's book about CCS. Written by children and for children, this colourful publication is the creation of students at St Michaels' Primary School in Brunswick Junction who had attended CarbonKids classes in sustainability.

The story and illustrations were the result of a workshop held at the school and were originally in PowerPoint presentation format. DMP sponsored its publication as a book and a State Government Minister presented the authors (by then high school students) with copies of the book. This has been widely distributed nationally and to libraries throughout the South West region.

The book has proven a favourite with youngsters and created new international links for Australia, through the book's distribution in Scotland and Canada, as well as being published in Japanese and Chinese languages for local language classes.

A video of the students reading the book proved more of an attraction at the Harvey show than the videos of drilling or seismic activities. Local recognition is significant in community engagement.

6. Risk Assessment and Issues Definition

The extent to which the South West Hub's activities are socially acceptable, and therefore politically tenable, are a result of carrying out a well-planned, though ultimately flexible, community engagement strategy.

The groundwork in the lead up to the 2014 3D Seismic Survey helped counter opposition by some landholders. While they could deny access to their own properties, their objections had little impact on the majority of landholders who assisted with the survey and ensured its success.

The communication strategy, and indeed the survey itself, had gone through risk assessments and strategies had been developed to counter opposition. The issues were clearly defined, and then refined throughout the process of obtaining landholder approval. Laying a firm foundation through open communications and by association with geological science experts, as well as being known and trusted within the local community, allowed the project to overcome the objections and proceed.

A key aspect of the communications strategy is having locally-based decision makers who are in touch with stakeholders and able to smooth the course for all involved. The success of the community engagement strategy is directly proportional to the trust the SW Hub has engendered in its relationship with the local community; trust bred by familiarity.

In Harvey the trust between the community and the project is the sum of trust in individuals, trust in those delivering the messages and trust in the message, which is well researched and honest.

7. Communications for Project Activities

The 3D Seismic Survey was a complex major activity and involved access to 125 properties as well as the broader community. Engagement and communication required a range of initiatives; from directly talking/negotiating with landowners, to open information session, preparation of letters, pamphlets, posters, media advertising and web-site updates. In addition approvals were required from the local shire and government agencies for various aspects of the project.

The communications strategy was in place, the land access team, KD.1, was on the ground and successful community Information Sessions had been well attended throughout the Harvey and Waroona Shires. But time was limited and the land access team found the going a bit harder once a group of landholders contacted a local MP objecting, not only to the survey, but the whole CCS feasibility investigation. All this occurred around an election period.

Flexibility of approach was required and key messages were revised. In the end, the 3D Seismic Survey proceeded and from widespread publicity early in the year, the public opposition had dropped to almost nothing by the start of, and throughout, the survey.

8. Communicating Responses to Common Concerns

The community has a surfeit of questions from which a number of common questions and themes have emerged.

At one stage project team members answered in writing more than 70 questions gathered from various sources. The fraccing question was the first and most common. The simple response has been “no, we want to keep the CO_2 in the ground”. The next most frequent question is “Why here? Why would anyone risk the future of a “clean green” agricultural area by transporting industrial by-products many kilometres from their source and “dumping industrial waste products” here?”

The “Why here?” issue is connected to concerns about groundwater security, by-products produced in other areas and a growing number of infrastructure corridors through the Harvey and Waroona Shires. Answering this question was one of the main aims of the early community relations work and involved communicating a complex mixture of information about stratigraphy, proximity to major CO_2 producing industries and educating the community about CCS.

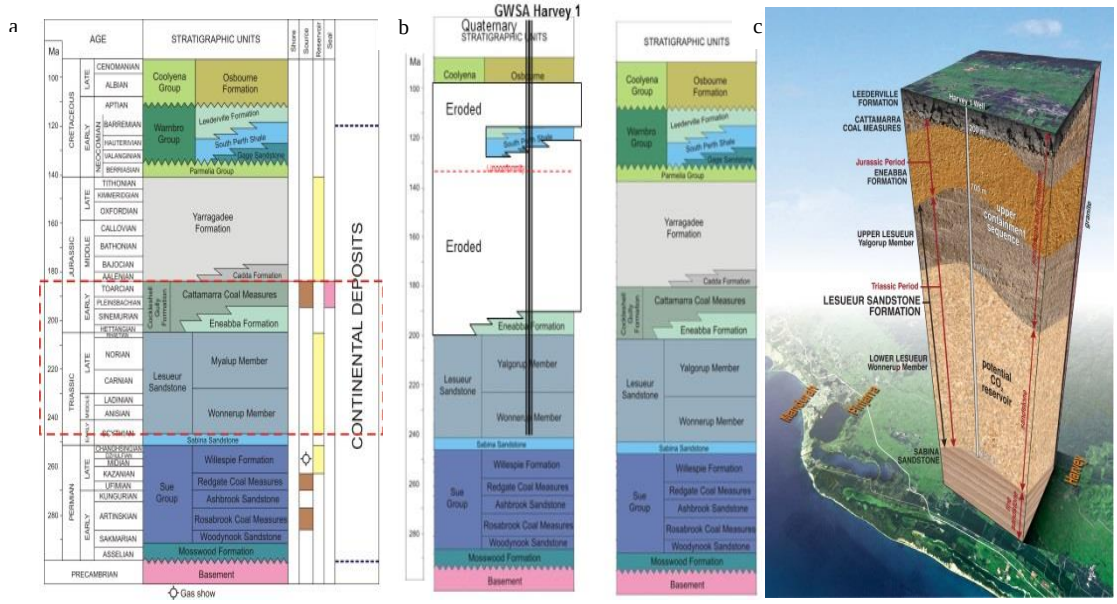

Fig. 7. Geologists' view to community view: (a) Geologists' view; (b) Geologists' view simplified; (c) Community view.

Establishing a rapport with any member of the community, no matter where, when or with whom the interaction occurs, requires project team members to efficiently assess that person's level of knowledge and factors that are significant to that individual, family or group and likely to influence their point of view.

Discussion must then be in a common language in order to establish a meaningful two-way conversation. This language must be of the individual's choosing, not that of the project.

Among the first communications tools developed for the SW Hub was a stratigraphic image which showed the underground formations and named them. It became our most important communications tool, representing an underground world that may people had never imagined.

While geologists saw only the terrifically simplified illustration of a complex underground, this graphic tackled the fact that the overwhelming majority of local residents have little knowledge of the complexities that lie under the fertile ground they are familiar with.

Western Australians are used to resources being dug out, but the concept of putting something into the ground for permanent storage was mostly foreign.

The addition of chronostratigraphic information to the graphic created a widely appealing association with dinosaurs which was something to interest all ages, and introduced the dimension of time, promoting a sense of distance, and allowing the two to three kilometre depth to be re-phrased as *"rocks created approximately 250 to 200 million years ago",* which is less technical terminology.

Groundwater is better understood than stratigraphy, particularly by those who rely on soaks, springs and bores for their potable water supply. The need to retain this quality water and the tendency for water to become saline at depths is understood. The concerns here relate to the possibility of salt contamination; people know the groundwater exists, though possibly not the fact that it is stored in rocks, and they have an idea about the salinity levels of accessible water on their properties.

But the most powerful "Why here?" answer is that the South West region's major freshwater reservoir called the Yarragadee Formation does not exist in the area of interest. While the reasons for this gap in the aquifer are not clear, it is a geological quirk that adds to the area's suitability for CCS, as it dispels any fears that this important aquifer, held dear by the community, would not be affected by carbon storage in the Harvey area.

A groundwater resources paper by Dr Philip Commander, one of the State's most respected hydrogeologists, was prepared on this subject and distributed widely [6].

9. Forming Alliances

Early in the project a research partner relationship was formed with the Western Australian Energy Research Alliance (WA:ERA) a joint venture between Australia's premier research body the CSIRO, The University of Western Australia (UWA) and Curtin University. This alliance was identified in the submission to the CCS Flagships Program as an essential component of the South West Hub.

Importantly, the CSIRO and the universities assisted the Project by sending personnel to SW Hub community events who were able provide a greater level of detail about CCS through the gravitas of expertise.

These events included Information Sessions focussed on particular stages of the project, such as the 3D Seismic Survey, which were open to the public and held in accessible locations such as the Harvey Recreation and Cultural Centre and through various display booths set up at a series of annual agricultural shows held in the region.

The association with UWA led to the establishment of a seismic monitoring system which is using eight seismic stations (plus another five external to the area) to establish baseline seismicity and add real-time data and knowledge to an area that, due to its stability, previously had very few collection points.

Fig. 8. Demonstration of passive seismic monitoring for participants in the IEAGHG summer school, December 2015.

'Seismometers in Schools' is a national program coordinated by the Australian National University and connected to UWA which sees schools hosting seismometers for recording of background seismicity and events such as earthquakes. This is also used as a valuable science education program at St Anne's Primary School in Harvey.

Another benefit of the research partnership was the display of the Curtin University Vibroseis truck which arrived in Western Australia just in time to be put on display (and run over 100 sweeps) at the Brunswick Agricultural Show in the lead up to the 3D Seismic Survey. This attracted people who were familiar with the vehicles and those who had never seen them, prompting conversations about the upcoming project. The fact that it was located between the food stalls and the prize cattle and was able to operate without disruption to either was of great benefit.

10. Media Strategy

As with the community, there is a hierarchy of knowledge among journalists. Just as important as the need for the community to be educated is the need for reporters and presenters to be given a background in CCS technology.

Maintaining contact with local journalists, and knowledge of their movement in and out of key positions within the local media, adds to the effectiveness of media as a communications tool. When possible, new journalists are offered briefings on CCS and the SW Hub project in recognition of their relatively low level of general knowledge or familiarity with these subjects.

These invitations to media briefings are an important addition to the SW Hub open door policy with an ability to extend inclusion. They are opportunities for journalists to learn about the basics of CCS and allow them to ask questions in an informal setting in order to encourage informed writing and the reporting of accurate information.

The SW Hub media interactions have concentrated on traditional channels as social media has not been relevant to the early stages of the project. This is a result of demographics and the relatively low use of social media among our most important stakeholders (Level 1).

11. Conclusion


Landowners thanked as survey finishes

Fig. 9. Celebrate success with the community – Thank You Barbecue for landowners and contractors at the conclusion of the 3D Seismic Survey (Harvey Reporter Tuesday, 15 April 2014).

The SW Hub's challenge is to communicate a little known technology to stakeholders on multiple levels in a manner that is inclusive, relevant and responsive, with a view to engendering familiarity and trust to those stakeholders.

During the first five years of the SW Hub project, the communications strategy has embraced a range of tools which have been presented to stakeholders across multiple platforms.

This multi-platform approach has engaged as many people as possible, utilising limited resources across the engagement level spectrum, from individual landholders through to the international CCS community.

A complex and variable approach to communications specific to stakeholder needs has so far resulted in communications which are valued by stakeholders and considered successful under independent scrutiny.

There is no room for a one-size-fits-all approach when it comes to communicating to stakeholders; they must be ranked and offered communications using tools and language that will best meet their needs to be informed and the project's needs to be recognised, trusted and ultimately accepted.

As the SW Hub proceeds, the need to keep the community and other stakeholders informed and engaged is, and remains, paramount.

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