

Actions from GISERA Research Advisory Committee Meeting 9 September 2015

Key

Action Open
Action Due/overdue
Action complete/in train

	Item	Action	Owner	Due	Status
1.	09-09-15 Item 2A	<u>Action 1:</u> The proponents will consider issues around dynamics associated with landholder wells and will explore if there's a role for GISERA to do work with other pieces of research occurring.	Research proponent	20 September 15	
2.	09-09-15 Item 2A	<u>Action 2:</u> The proponents will adjust the proposal to identify any synergies with other relevant research agencies, such as the Centre for Coal Seam Gas.	Research proponent	20 September 15	
3.	09-09-15 Item 2B	<u>Action 3:</u> The proponent will identify in the proposal how engagement with the gas commission will occur during the research work.	Research proponent	20 September 15	
4.	09-09-15 Item 2B	<u>Action 4:</u> The proponent will consult with Agforce regarding the end user capability relevant to mapping tools to ensure formats used are useful for landholders.	Research proponent	20 September 15	



5.	09-09-15 Item 2B	<u>Action 5:</u> The proponent will ensure that Agforce representatives are engaged regarding leveraging agricultural shows to promote the outputs of the research.	Research proponent	20 September 15	
6.	09-09-15 Item 2C	<u>Action 6:</u> The proponents will engage with relevant external contacts, including UQ representatives, to address concerns that the proposal in its current form has developed in isolation.	Research proponent	20 September 15	
7.	09-09-15 Item 2C	<u>Action 7:</u> The proponents will re-write the proposal to ensure individual contributions are reflected as a coordinated response and that the objectives are more clearly communicated.	Research proponent	20 September 15	
8.	09-09-15 Item 2D	<u>Action 8:</u> The proponents will clarify the extent that relevant CSG companies in the region are currently surveying the community in relation to industry impacts and whether that will lead to potential survey fatigue should this proposal be implemented.	Research proponent	20 September 15	
9.	09-09-15 Item 2D	<u>Action 9:</u> The proponents will incorporate into the project order document the need to review relevant research work that is external to CSIRO, including international research.	Research proponent	20 September 15	
10.	09-09-15 Item 2E	<u>Action 10:</u> The proponent needs to better define the scope of the project, ensuring the scope is broadened to be an international study.	Research proponent	20 September 15	

11.	09-09-15 Item 2E	<u>Action 11:</u> The proponent needs to highlight in the proposal that other relevant external GHG analysis work for onshore gas development, including other models, will be reviewed and incorporated into the research where applicable.	Research proponent	20 September 15	
12.	09-09-15 Item 2E	<u>Action 12:</u> The proponent needs to ensure the proposal explicitly states the research will consider the incremental calculation of pre-CSG versus the introduction of gas.	Research proponent	20 September 15	
13.	09-09-15 Item 2F	<u>Action 13:</u> The proponent will incorporate inclusion of a stage gate between task one and task two.	Research proponent	20 September 15	
14.	09-09-15 Item 2F	<u>Action 14:</u> Member 3 to forward the GISERA Director the relevant Healthy Headwaters report relating to CSG and radionuclides in water for forwarding to the project proponent.	Member 3	15 September 15	

Minutes
GISERA Research Advisory Committee Meeting No. 7
Wednesday, 9 September 2015
Via Telephone

OPENING

The meeting of the GISERA Research Advisory Committee was called to order at 12.00 noon on Wednesday, 9 September 2015 via telephone by Damian Barrett, GISERA Director.

PARTICIPANTS

Damian Barrett: GISERA Director (*CSIRO*)

Alan Hayter: Environmental Lead (*Australia Pacific LNG*)

Patrick McKelvey: Manager – Geology & Groundwater Services (*QGC*)

Anne Bridle: Independent (*former Basin Sustainability Alliance*)

Randall Cox: General Manager (*Office of Groundwater Impact Assessment*)

Wayne Newton: Grains President (*AgForce*)

Will Rifkin: Chair in Social Performance (*Centre for Coal Seam Gas and Centre for Social Responsibility in Mining, University of Queensland*)

Shelley Masterson: GISERA Communication Advisor (*CSIRO*)

Apologies:

Steve Raine: Professor of Irrigation and Soil Science in Faculty of Engineering and Surveying (*University of Southern Queensland*)

David Freudenberger: Senior Lecturer (*Fenner School of Environment and Society, Australian National University*)

Peter Wallbrink: Theme Leader, Integrated Water Resource Management (*CSIRO*)

Nadine Marshall: Senior Social Scientist (*CSIRO*)

Graeme Bartrim: Chief Environmental Scientist (*Origin*)

Jim Grayson: Chief Executive Officer (*Gladstone Area Water Board*)

ITEMS FOR DISCUSSION

The GISERA Director welcomed new members Patrick McKelvey and Alan Hayter. He noted that Peter Wallbrink, Steve Raine, David Freudenberger and Nadine Marshall are currently overseas and therefore unable to participate in these discussions.

The GISERA Director noted that comments had not been provided prior to the meeting.

The GISERA Director advised that the frequency of the RAC meeting had reduced recently due to the phase of research that GISERA has been in. Currently a number of projects are moving into final stages which has shifted the focus and subsequent frequency of the RAC.

2A Project Enhancement – Characterising the regional fluxes of methane seepage in the Surat Basin, Queensland

The RAC provided the following comments on the ‘*Characterising the regional fluxes of methane seepage in the Surat Basin, Queensland*’ research enhancement:

Member 14

- Noted that this issue was flagged in previous stakeholder surveys as a major area of concern.
- It is designed to add to the 2 years of work on estimating methane seeps in the Surat Basin.
- The combination of the 2 pieces of work will give a definitive account of fluxes and sources of methane.
- Variation 1 allows us to use a mobile flux tower to measure fluxes of methane over a small footprint. The tower can be placed in a location where research is showing a ‘hot spot’ of methane flux.
- Variation 2 will allow researchers to undertake the sophisticated modelling needed to locate sources of high methane flux across the region.

Member 19

- Anything that provides more data is helpful. This is something we would support.

Member 14

- There is strong community interest component in this due to the many questions around fugitive emissions.

Member 11

- Endorsed the project. Wanted to understand how this proposal links with whole of life greenhouse gas assessment and whether CSIRO could focus on individual farmer bores as opposed to a regional focus.

Member 14

- Generally, issues relating to the development of gas wells is addressed in agreements companies have with landholders so we don’t tend to go into that area as it’s a negotiation or legal discussion between landholders and companies.

Member 3

- If there’s no decline in the water level, it’s not addressed by agreements. So landholders are concerned.

Member 11

- The understanding of background behaviour or dynamics of these bores seems to be missing. There’s no longitudinal studies.

Member 14

- The ‘Telling the story’ proposal will work closely with landholders so we could consider looking at landholder feedback through that project. This research isn’t geared to address that particular issue.

Member 11

- Appreciate that but there's still a need out there.

Member 14

- Will discuss with the researchers as to how we would approach the issue - to identify, monitor and measure and determine cause and effect.

Member 13

- There's a need to identify the opportunity for collaboration to yield insight for individual landholders.

Member 14

- There is a large amount of work not captured in this proposal for brevity but we'll pursue collaboration as that's a principle we've adopted with GISERA. Endorse including any interaction we can encourage between Centre for Coal Seam Gas and GISERA.

Member 19

- Endorsed the project.

Member 3

- How do you know when companies are releasing methane when they do works on pipelines? How is that methane release picked-up and discounted?

Member 14

- We aren't covering compliance related issues.
- Other CSIRO projects are looking at quantifying and measuring the fluxes of methane from infrastructure.
- The current 2 towers in the Surat Basin can identify if there's a significant release of methane from almost all wind directions and map back to where the source came from.

Member 3

- Can we identify how tools from this project could be used by landholders and other relevant stakeholders?

Member 14

- In terms of individual landholders, the usefulness of the information is in identification and location of coal exploration wells and their remediation.
- We will handover world best practice science deployed in a way that routine monitoring can be undertaken by those responsible. The information from it feeds back to communities as knowledge and reassurance to what is happening in the region.
- The information is supplied to companies to adjust practices.

Member 3

- Thank you.

Member 14

- We can state that the revised project order will be submitted to the Management Committee for approval.

Outcome: The RAC agreed that following further clarification and revision of the project order document, endorsement of the RAC was given to submit the proposal to the Management Committee for final approval.

Following the above discussion, it was resolved that:

Action 1: The proponents will consider issues around dynamics associated with landholder wells and will explore if there's a role for GISERA to do work with other pieces of research occurring.

Action 2: The proponents will adjust the proposal to identify any synergies with other relevant research agencies, such as the Centre for Coal Seam Gas.

2B Project Proposal – Telling the story

The RAC provided the following comments on the 'Telling the story':

Member 14

- Proposal has come out of work done previously on agricultural impacts and the notion around gas farm enterprises.
- Decisions farmers are making also need to take into account the fact that there's wells on their land.
- The project has the ability to provide wider benefits than only the Surat Basin.
- Proposal is designed around phases.

Member 11

- Are the Gasfields Commission involved with this? Anything in that arena should talk with the Commission.
- You mentioned surface water hydrology but are there any links to the people who do hydrology and modelling for water allocation management?

Member 14

- The project will need to ensure the relevant engagement has occurred and continues to occur and will provide regular updates for the relevant stakeholders.
- This project proposal has come out of previous GISERA agricultural projects.
- In a sense the technique is not new but it's the analytics that's yielded the breakthrough.
- This project could provide a mapping tool that is potentially useful across regions where landscape is shared between agriculture and the gas industry.

Member 3

- It would be helpful to consider bringing the output into what Agforce are already doing – especially if you could provide mapping tools as a shape file that landholders could walk away with and utilise again.

Member 14

- The proposal aims to run the engagement through agricultural shows and representation at AgQuip and Agforce could lead to significant uptake through this. Researchers underplaying potential also want to get value proposition established and proven before consider wider applications.

Member 3

- Endorsed the project.
- As Agforce use Phoenix mapping data you should talk to the Agforce developers to ensure the formats used are useful for landholders. Brendan Skerman is the contact.

Member 7

- Endorsed the project.
- Talk to Noel Brinsmead from Agforce regarding the engagement you discussed with Agforce.

Member 14

- I'll recommend this proposal take into account your points and after adjustment be sent to the Management Committee for approval.

Outcome: The RAC agreed that following revision of the project order document, endorsement of the RAC via email would be sought to submit the proposal to the Management Committee for final approval.

Following the above discussion, it was resolved that:

Action 3: The proponent will identify in the proposal how engagement with the gas commission will occur during the research work.

Action 4: The proponent will consult with Agforce regarding the end user capability relevant to mapping tools to ensure formats used are useful for landholders.

Action 5: The proponent will ensure that Agforce representatives are engaged regarding leveraging agricultural shows to promote the outputs of the research.

2C Project Proposal – Constraining groundwater flow rates in the Surat Basin through environmental tracer and hydrochemical data

The RAC provided the following comments on the ‘Constraining groundwater flow rates in the Surat Basin through environmental tracer fate and hydrochemical data’:

Member 14

- A significant amount of work has been done previously in groundwater modelling in the region.
- Those projects provide increasing clarity in relation to the Surat Basin groundwater resource and potential impacts on groundwater dynamics.
- From GISERA work there have been questions around complexity of flow paths in some adjacent aquifers that have emerged, from both measurement and modelling.
- This proposal tries to resolve some of those questions by using particular types of tracers.
- This proposal originated from my instructions, following the external stakeholder survey, to develop a synthesis proposal to target the most important questions associated with the previous work undertaken.
- The proposal is comprehensive and doesn’t provide all the information around what will be done due to efforts to keep it within the template size.

Member 11

- The proposal appears to be developing in isolation.
- It mentions recharge work which offers a chance to collaborate with UQ but am not sure that’s occurring.
- We’ve gone to great lengths to build a regional groundwater flow model to incorporate recent gas company drilling.
- We’ve updated the groundwater database so that’s now improved.
- We should reconcile work that’s done to build into this work.
- Otherwise the project is endorsed but it shouldn’t develop in isolation.
- Keith Phillipson is the relevant contact for your proponent and Dhananjay Singh is the other contact.

Member 14

- There is scope for the project proponent to adjust the proposal and address your points made as we don’t want the work developing in isolation.

Member 19

- I wasn’t clear on the objectives of the project from what was presented.
- Appreciating that it isn’t straightforward, I still didn’t get a clear sense of where they wanted to go and how they’d get there.

Member 14

- The knowledge gained around the previous reinjection work has been used as the basis for this proposal.

Member 13

- Aspects of the proposal appear to not complement each other.

Member 14

- The proposal may be reflecting individual contributions to the proposal rather than a coordinated response to an issue.
- I'll suggest the proponents contact the relevant UQ representatives and take into account their comments.
- The proponents should also ensure the objectives in the proposal be made clearer and the concerns around the proposal being developed in isolation are addressed.
- I recommend the proposal is then re-submitted and looked at again out of session.

Outcome: The RAC agreed that following revision of the project order document, the proposal be re-submitted to the RAC out of session to review the updates. If all feedback is addressed, email approval of the proposal could then be provided before submission to the Management Committee for final approval.

Following the above discussion, it was resolved that:

Action 6: The proponents will engage with relevant external contacts, including UQ representatives, to address concerns that the proposal in its current form has developed in isolation.

Action 7: The proponents will re-write the proposal to ensure individual contributions are reflected as a coordinated response and that the objectives are more clearly communicated.

2D Project Proposal – Community Functioning and Wellbeing Survey 2

The RAC provided the following comments on the 'Community Functioning and Wellbeing Survey 2':

Member 14

- This proposal builds from GISERA socio-economic survey work completed earlier this year that demonstrated and quantified a number of dynamics.
- It proposes to explore changes in demographics and income in the region by repeating the original survey.
- Previous results have been presented to community forums around Australia as well as helping inform and advise policy development.
- As GISERA expands, the results of the research will be presented and shared in NSW to utilise QLD learnings.
- Feedback from community forums has shown an interest in repeating the survey a few times to understand impacts as CSG moves through the life-cycles of construction to operations.
- Information generated from surveys can inform decisions and choices by better understanding a region's social dynamics as it moves forward to operation phase.

Member 3

- Concerned about consultation fatigue although those impacted by CSG are inclined to speak up as they feel disconnected.
- Past community study was well received and to undertake it again would help keep people involved.
- The previous success will help overcome any engagement fatigue as people want the information and want to be involved.
- Endorsed the project.

Member 14

- Feedback from community forums is that the previous work was well received and the quality of the sampling methodology was first-rate.

Member 13

- Can it be understood if companies are still surveying communities and how frequently? If the frequency isn't high that would help with implementing this.
- Previous surveys may have been requirements of the Coordinator-General or a company operating requirement.
- It's an advantage if this is undertaken independently of industry and if the results are released publicly.
- Appeared to be dismissive remarks in the proposal about similar research undertaken overseas. It would be disappointing to dismiss overseas learnings.

Member 14

- Agree it's important not to dismiss overseas research
- There's a need to consider the relevance and the context of overseas research also as conditions may potentially differ.
- It sounds like there is agreement from participants for this proposal.
- We can state in the actions that the proposal needs to consider engagement fatigue and industry survey requirements as well as a consideration of relevant overseas research. With those changes the proposal can then go to the Management Committee.

Outcome: The RAC agreed that following further clarification and revision of the project order document, endorsement of the RAC was given to submit the proposal to the Management Committee for final approval.

Following the above discussion, it was resolved that:

Action 8: The proponents will clarify the extent that relevant CSG companies in the region are currently surveying the community in relation to industry impacts and whether that will lead to potential survey fatigue should this proposal be implemented.

Action 9: The proponents will incorporate into the project order document the need to review relevant research work that is external to CSIRO, including international research.

2E Project Proposal – Whole of life cycle greenhouse gas assessment of the exploitation of the Surat Basin gas reserve: global benefits and risks

The RAC provided the following comments on the ‘Whole of life cycle greenhouse gas assessment of the exploitation of the Surat Basin gas reserve: global benefits and risks’:

Member 14

- As a life-cycle analysis, this will provide information to local communities and more broadly communities beyond the boundary of gas development region.
- When surveying stakeholders in this particular gas development region, issues such as water have been identified as a high priority. Issues such as GHG benefits don’t receive as much focus compared to when the surveys and questions are focused on the Brisbane metropolitan area or South East Australia. So this project expands the receiving audience beyond the boundary of this gas production area into regions where issues around GHG emissions and savings are having a major determination of the wider communities’ acceptance or non-acceptance of the unconventional gas industry.
- I’m getting questioned about these issues from community sessions in different parts of Australia
- The project undertakes an analysis looking at the process of extraction and generation and understanding where GHG emissions are occurring and attempting to provide a definitive statement in terms of an Australian specific situation in relation to potential benefits of GHG emissions associated with gas production of electricity.

Member 3

- How does it work when the gas goes overseas and the benefits therefore accrue overseas in relation to electricity generation?

Member 14

- The proposal looks at overall GHG benefits. It doesn’t extend to the attribution of where the GHG benefits sit in term of which countries. That’s an area under a degree of flux. This project will look at those issues of downstream production but not at accounting the savings in national GHG accounts.

Member 3

- Based on that, it appears there’s a shortfall in the study.

Member 20

- I was also unsure of the geographical boundaries. If you’re incorporating LNG production and shipping there is some additional parts of the life cycle analysis that should be part of the research so there’s a need to define the scope better. Not clear if it’s just within Australia and if so it should quarantine the approach for Australia.

Member 14

- I assume it would incorporate gas treated through trains at Curtis Island and exported and combusted overseas for electricity generation so it would consider emissions associated with production, shipping and eventual electricity generation. The proposal looks at overall GHG benefits.

Member 20

- Some of the gas would be quarantined for Australia so is it referring to just that portion of gas from the fields or the entire life-cycle, which is overseas too? It should consider a larger proportion of gas rather than a smaller proportion.

Member 14

- I believe it also includes an international element as a large majority of the gas ends up overseas. If it is just domestic it would reduce the value of this project. I will take that comment back to define the scope and reiterate that it must be an international study.

Member 13

- I believe it must also include an international element.
- There's no mention of anyone else's GHG analysis work for onshore gas development.
- I'd like to see other models considered in the current proposal. If it's a decent model and if the technology is changing then it would be good to use the model to work through scenarios on how things could be different.

Member 19

- Will there be a reference to what the situation would be like without CSG for the pre-existing GHG uses?

Member 14

- I assume that incremental would be calculated but that's implicit in this study. We want to make that explicit.
- Based on these questions and given the importance of this piece of work I'd like to suggest the proposal is updated and circulated for an out of session acceptance, via email. Comments to the updated proposal can be sent in reply email. There would be no need to reconvene unless there's a major issue with the revised proposal.

Members 13 and Member 20

- Endorsed suggestion.

Outcome: The RAC agreed that following revision of the project order document, the proposal be re-submitted to the RAC out of session to review the updates. If all feedback is addressed, email approval of the proposal could then be provided before submission to the Management Committee for final approval.

Following the above discussion, it was resolved that:

Action 10: The proponent needs to better define the scope of the project, ensuring the scope is broadened to be an international study.

Action 11: The proponent needs to highlight in the proposal that other relevant external GHG analysis work for onshore gas development, including other models, will be reviewed and incorporated into the research where applicable.

Action 12: The proponent needs to ensure the proposal explicitly states the research will consider the incremental calculation of pre-CSG versus the introduction of gas.

2F Project Proposal – Radionuclides in coal seam gas produced waters in Australia

The RAC provided the following comments on the ‘Radionuclides in coal seam gas produced waters in Australia’:

Member 14

- Previous stakeholder surveys highlighted concerns regarding water issues, focusing on the constituents in the produced water. There is also broader interest in understanding the potential for various constituents to cause contamination.
- Rising interest in understanding the various chemicals in drilling and hydraulic fracturing fluids and the potential for geogenics to be produced for concentration of radioisotopes to occur. Previous GISERA projects in this area have not looked at radioisotopes.
- This proposal only makes sense when considering it in a wider context. Not only Surat but also the Bowen Basin and Gunnedah Basin.
- The proposal starts with Surat but extends beyond to take the data provided to us by Origin and come out with a considered understanding of what the potential is for issues in this area both in the Surat and beyond.

Member 19

- It doesn't appear to be a problem for the Surat Basin but it does appear there's political pressure to look at this. Perhaps to address this, a desktop study on existing data is firstly completed. Based on those results it is then considered whether a further analysis should move ahead? This would be a gate process.

Member 14

- The presence of norms is not an issue. The problem, however is we need to develop a set of methods and a process for applying this more widely and this would be an aspect of this particular work.
- We need to apply those to a data set which requires energy, effort and resources. Knowing that for Surat alone won't come up with a significant outcome. I'm happy to put a stage gate in between the review and the compilation of the database but if we move to a statistical analysis and interpretation we must be doing so with knowledge that the development of

the methodology here will be important for its application later, beyond the Surat Basin.

Member 19

- I see that but the remit of our focus isn't national at this stage.

Member 14

- Funding for GISERA in NSW will have the ability to build on the methodology and application that happens in this study.

Member 3

- I don't think it's purely a NSW problem.

Member 19

- I agree but I believe the project should be collating all the data and understanding what the questions are that need to be answered before proceeding through the next stage. I would endorse that approach.

Member 11

- Agree also that it needs a stage gate.

Member 14

- Current proposal has 3 tasks with associated milestones. Those tasks include firstly the compilation of the database. That would take information and data from Origin and QGC and establish the database and set it up so it could be interrogated. That would be the first point.

Member 13

- How is that database different from the groundwater data that UQ is collating?

Member 19

- It comes from different sources. It sits outside the UQ work as its operational sampling so it's complementary. It's not a duplication of what UQ are doing.

Member 14

- The size of this proposed database wouldn't be as large as the UQ groundwater atlas. Then the next task is a statistical analysis and interpretation. Then the last task is the final report.
- A stage gate could be put between task 1 and task 2.
- We can change the first task to a compilation of the database and definition of questions arising from an initial examination of the data and the second task to still be analysis and interpretation and then decide whether to move to that based on the compiled data and defined questions.

Member 19

- Endorsed the suggestion.

Member 3

- Note there was a study undertaken previously with respect to CSG and radionuclides that may be relevant for consideration. I can send it to you.

Member 14

- I'll note that and point the researcher to it to have a look at.
- Comments will be provided back to proponent, particularly to insert a stage gate
- I suggest that amendment be made and then the proposal goes straight to the Management Committee.

Outcome: The RAC agreed that following revision of the project order document, endorsement of the RAC was given to submit the proposal to the Management Committee for final approval.

Following the above discussion, it was resolved that:

Action 13: The proponent will incorporate inclusion of a stage gate between task one and task two.

Action 14: Member 3 to forward the GISERA Director the relevant Healthy Headwaters report relating to CSG and radionuclides in water for forwarding to the project proponent.

3 Other business

No matters were raised.

NEXT MEETING

The next meeting of the Research Advisory Committee is yet to be scheduled. It is anticipated that a meeting will occur once further proposals are established.

MEETING CLOSURE

The GISERA Director closed the meeting at 2:28pm

Minutes submitted by: **The acting GISERA Secretariat**

Minutes approved by: **The GISERA Director**