

GISERA research in NSW

Narrabri Community Consultative Committee

Damian Barrett29 November 2016

ENERGY BUSINESS UNIT www.csiro.au



















Energy demand



- 502,960 PJ
- 17,360 PJ
- 5,772 PJ
- Gas 21% Aust. energy needs
- Largest gas exporter
- (Largest coal exporter)
- ~50% < GHGs



















CSG: Challenges & opportunities

- Not distributed evenly in space & time or among stakeholders
- Uncertainty creates tension and public discontent
- Science to improve predictions of distribution of challenges & opportunities
- Inform decision making, inject information into debate & reduce tension

GISERA seeks to develop

- Integrated, regional, systems-based research portfolio
- Provide gas industry/community evidence based knowledge
- Underpin decision making to maximize benefits & minimize costs

Benefits

- New knowledge & reduced uncertainties for relevant stakeholders
- Foster collaboration by industry, communities, government, universities
- Synthesize data & knowledge at a regional scale
- Provide non-exclusive & mutual leverage opportunities



Key environmental & social questions



- Does CSG affect quality/quantity of water?
- What are impacts on farm production, productivity and amenity?
- What is CSG contributing to regional greenhouse gas & global climate change?
- What are costs/benefits for communities?
- What are impacts on regional flora/fauna?
- Does CSG development make people sick or affect ecosystems?
- Decommissioning issues?



GISERA's research portfolio

- Agriculture: identifying landscape/development configurations that maximise co-benefits
- Water: understanding risks associated with extraction & use of groundwater
- Biodiversity: understanding & minimising impacts of development on regional ecological function
- Marine: understanding vulnerable components of the marine ecosystem to minimise or offset impacts
- Socio-economic: informing & supporting change to enhance regional & community benefit
- Greenhouse footprint: identifying sources and profiling the region
- Health: understanding exposure pathways and associated risks



GISERA governance

Members of the NSW RRAC

40%

Professor Alison Sheridan - Head of School of Business, University of New England

Mr Jack Warnock -Lower Namoi Cotton Growers' Association and Managing Director Warnock Agronomics Pty Ltd

Mr Ken Flower -General Manager, North West Local Land Services

Mrs Annette Turner
- President, Country
Women's Association
of NSW



20%

Neale House -Manager, Environment and Water, Santos

Mr Aaron Clifton -NSW Environment Manager, Gas
Operations, AGL

INDUSTRY

20% 20% Dr Peter Wallbrink -Mr Jock Laurie -Research Director -NSW Land and Basin Management Water Commissioner Outcomes, Land and **NSW Department** Water, CSIRO of Industry Dr Michael Braunack Dr Philip Wright -- Research Team Chief Scientific Officer, Leader, Agriculture. NSW Department of Primary Industries CSIRO m **CSIRO** GOVERNMENT GISERA NSW Research Advisory Committee

- Contains 2/10 industry members
- Can identify, develop, approve or stop projects
- Ensures research priorities are independent
- Ensure research is transparent
- Oversees conduct
- Internal documentation completely visible (www.gisera.org.au)
- Reports publicly available following CSIRO peer-review

• GISERA Research Management Committee

- Composition: CSIRO, APLNG, QGC
- Oversees day-to-day operations
- Financial governance
- Milestone sign-off



NSW GISERA total budget

Group	Contributor	Payment type	GISERA – NSW
Industry		Membership	\$900,000
Government	Federal Government NSW Government	Grant Grant	\$1,500,000 \$1,500,000
CSIRO	CSIRO	In-kind	\$1,500,000
TOTAL (from 2016 – 2018)			\$5,400,000



Constructing the NSW research portfolio

Projects approved

THEME	TOPIC
Water	Impacts of CSG depressurization on Great Artesian Basin flux: conceptual model refinement, uncertainty analysis and hypothesis testing
Greenhouse	Regional Methane Emissions in NSW CSG Basins
Economic	Analysing economic and demographic trajectories in NSW regions experiencing CSG development
Social	Social baseline assessment of the Narrabri region of NSW in relation to CSG development



Constructing the NSW research portfolio

1. AWARENESS

- a) Stakeholder survey & engagement
- b) Stakeholder questions



2. RANK

Rank research topics according to relative importance and value



3. REVIEW

Review current knowledge and completed work in the selected areas



4. IDENTIFY

- a) request new research ideas from CSIRO staff and stakeholders
 - b) consider resource capacity



7. APPROVE

NSW Regional
Research
Advisory
Committee
(RRAC) review
proposals
(Project Orders)



6. PROPOSE

Researchers
draft research
proposals
(Project Orders)
discussing
research aims,
methods and
expected
outputs



5. SELECT

Rank project ideas based on research criteria, capacity and ability to meet KPIs



Constructing the NSW research portfolio

Projects approved & pending by NSW RRAC

Subject Area	Title	
Groundwater	Assessment of water quality risk to farmers' bores and spatial design of groundwater monitoring networks for early detection of groundwater quality impacts in the Narrabri Gas Project area	
Groundwater	Improving the representation of the impact of coal seam gas extraction in groundwater flow models for the Namoi region	
Groundwater	Water contamination risk assessment tool for borehole delamination and hydraulic fracturing activity in unconventional gas extraction	
Agricultural	Landscape values in the Namoi*	
Decommissioning	Decommissioning Pathways for CSG Projects	
Social	Building a Learning Community*	
Economic	Using gas to meet NSW energy needs and GHG targets*	
Health	Human health effects of Coal Seam Gas Activity: Review and Study Design	



Thank you

Damian Barrett
Deputy Director Energy Flagship

- t +61 2 6246 5856
- e Damian.Barrett@csiro.au
- w www.csiro.au

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www.csiro.au

