Social and environmental perspectives of energy resource development

GISERA | Gas Industry Social and Environmental Research Alliance

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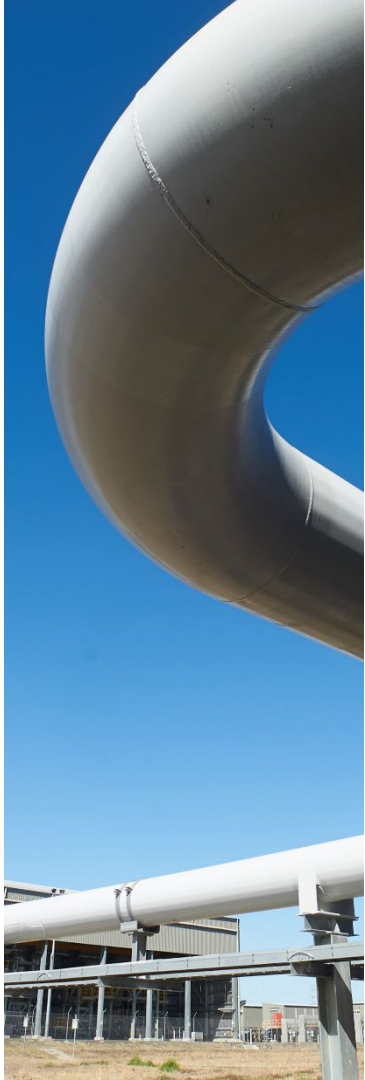
CSIRO | Australia Pacific LNG | QGC | origin | Santos | NSW Government | Australian Government Department of Industry, Science, Energy and Resources | Supported by Government of South Australia | Queensland Government | Northern Territory Government

There is more to energy than technology

- Our ability to control energy is of fundamental importance to our development as a species
- From fire for cooking, heat and forging metals, through to the fossil fuel era that powered the development of modern society.
- Fossil fuel use has lead to climate change. Mining and hydrocarbon extraction also impact the environment and society.
- Are low emissions technologies free from impact? What impacts are we willing to accept to provide the lifestyle we want and that many aspire to?

A bit about me

- Geologist by training
- 6 years digging stuff up
- PhD on 4 cm^3 of rock
- Project manager in eResearch
- Lecturer
- CSIRO
  - Coal mining research
  - Geothermal energy research
  - Impacts of gas development



About CSIRO's GISERA

- The CSIRO's Gas Industry Social and Environmental Research Alliance (GISERA) is a collaboration between CSIRO, government and industry.

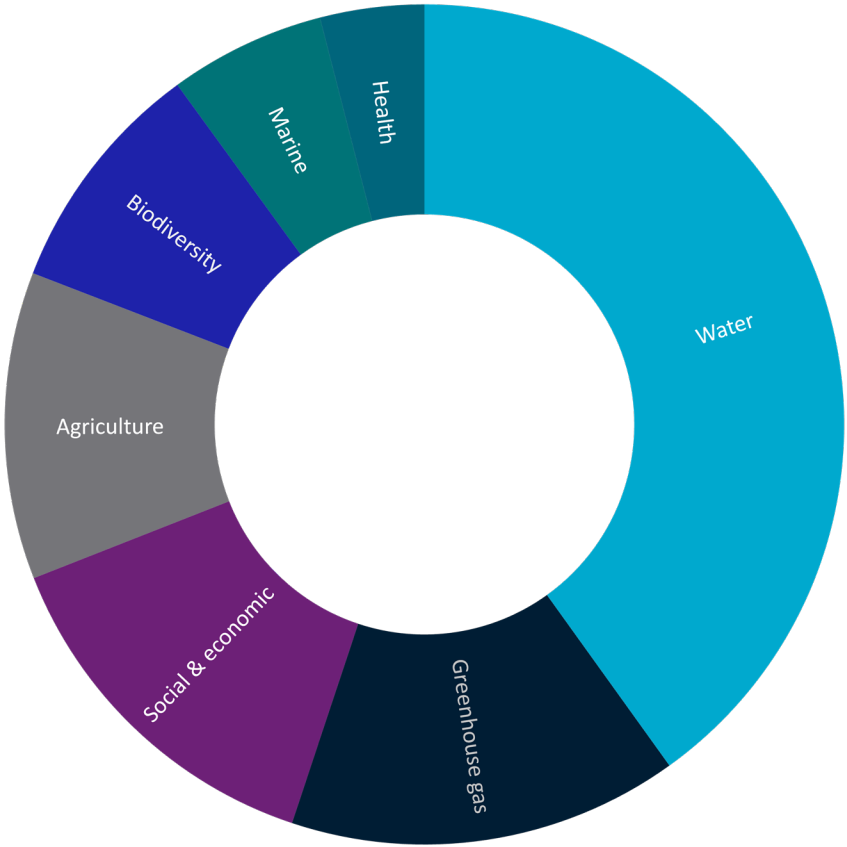
- GISERA was launched in July 2011, with research directed at Queensland's coal seam gas-liquefied natural gas industry. Based on the success of the research programs in Queensland, GISERA has expanded its research into regional NSW, SA, the NT, and WA.

GISERA's Objectives

- carry out research and improve and extend knowledge of social and environmental impacts and opportunities of onshore gas projects for the benefit of the community living in gas development regions, industry and the broader public; and

- inform government, regulators and policy-makers on key issues regarding policy and legislative framework for the gas industry.

Research investment by research subject area (across all regions)



An example – well decommissioning

- Legacy commonly raised by the community
- Examples from other industries and other jurisdictions
- Coal Seam Gas development
  - Many 1000's of wells, co-located with other land users
  - CSG well's decommissioned all the time (exploration wells, poorly performing wells, well integrity issues, water bores)
- Planning for the end from the beginning

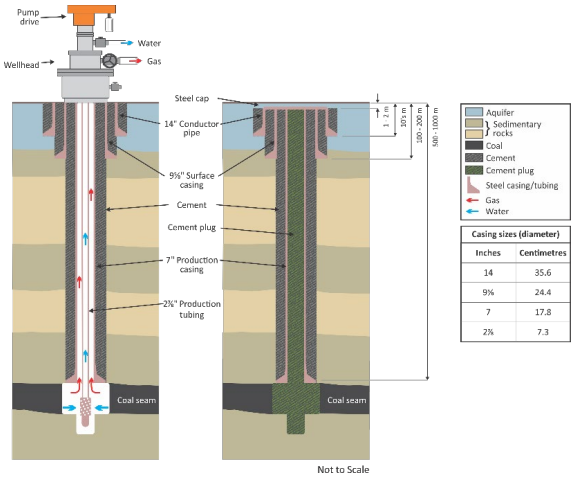
What is well decommissioning

- Planned shut-down and removal from service of infrastructure, including rehabilitation of the site
  - Abandonment of the well
  - Rehabilitation of the surface (including progressive rehabilitation)

Project Overview

- *"What does successful well decommissioning mean?"*

- What are the regulatory requirements?
  - Queensland
  - New South Wales
  - North America
- Three workshops, each involving
  - Industry
  - Regulator
  - Local stakeholders (landholders, local council)



Regulatory framework – Qld and NSW

- Broadly similar, with some procedural variation
- Licencing, environmental and decommissioning conditions/ requirements
  - QLD environmental conditions in an Environmental Authority
  - NSW environmental conditions part of development consent
  - In both jurisdiction these conditions based on an environmental assessment
- Both jurisdictions
  - have a code of practice for well construction and abandonment
  - have financial assurance that scales with the size of development and allows for progressive rehabilitation
  - place significant weight on the landholder's views

Workshops

- Three workshops
  - Camden, Macarthur Region, New South Wales – Production winding down
  - Chinchilla, Queensland – Production at high levels
  - Narrabri, New South Wales – Proposed development
- Workshop structure
  - A brief overview followed by facilitated discussion
  - Participants from industry, regulator and local stakeholders (landholders, local council).

Workshop outcomes

Alignment

- Broad consensus that the outcome of successful well decommissioning is that there should be no legacy issues arising from the abandoned well or well pad, in perpetuity

Misalignment

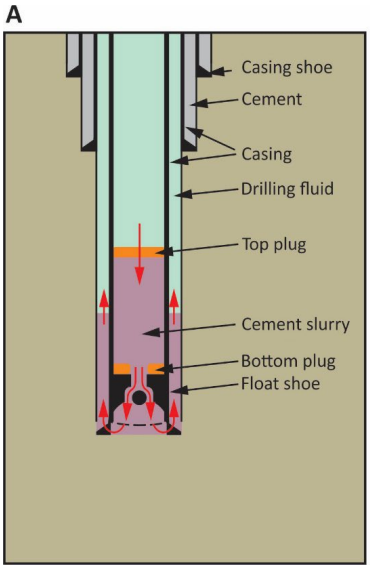
- Industry and regulator have a high degree of confidence that this can be achieved
- Broader community less confident

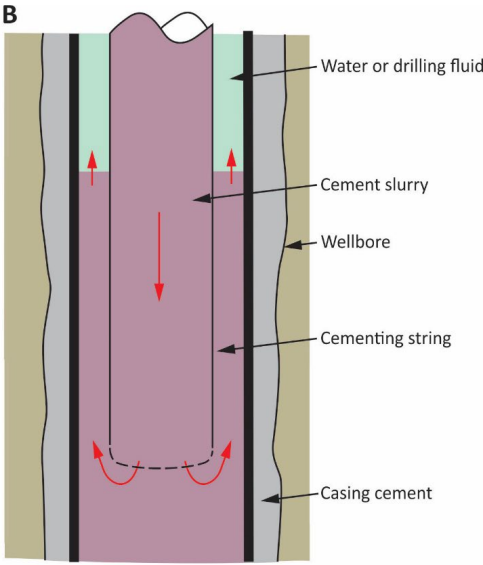
Codes of practice

- Industry and regulator have a high degree of confidence in the code of practice in each state, and rely on it strongly
- The broader community does not share this confidence
  - Technical nature of the codes of practice
  - Evidence that the codes of practice are being followed
  - How would you know if you haven't been back to check?

But concrete cracks!

- My cement is not your concrete



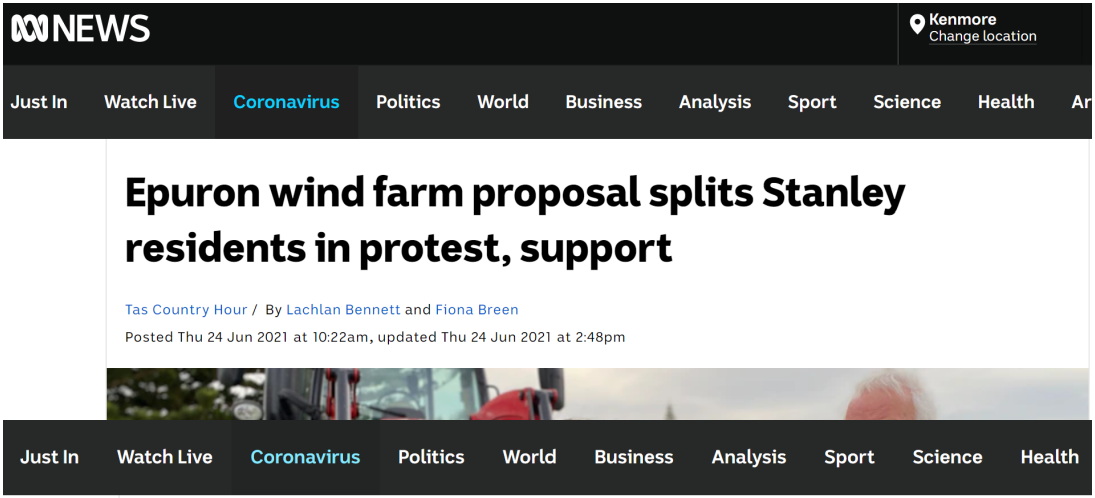


Options to consider

- More accessible information from government and industry on the well abandonment regulation and processes to improve broader public understanding
  - factsheets on regulation, engineering process and legacy
  - plain language summaries of well completion and decommissioning reports
- Better process for handling public enquiries
- A program of monitoring abandoned wells by government and industry, with publicly-available results

The energy transition

Everyone loves renewables?



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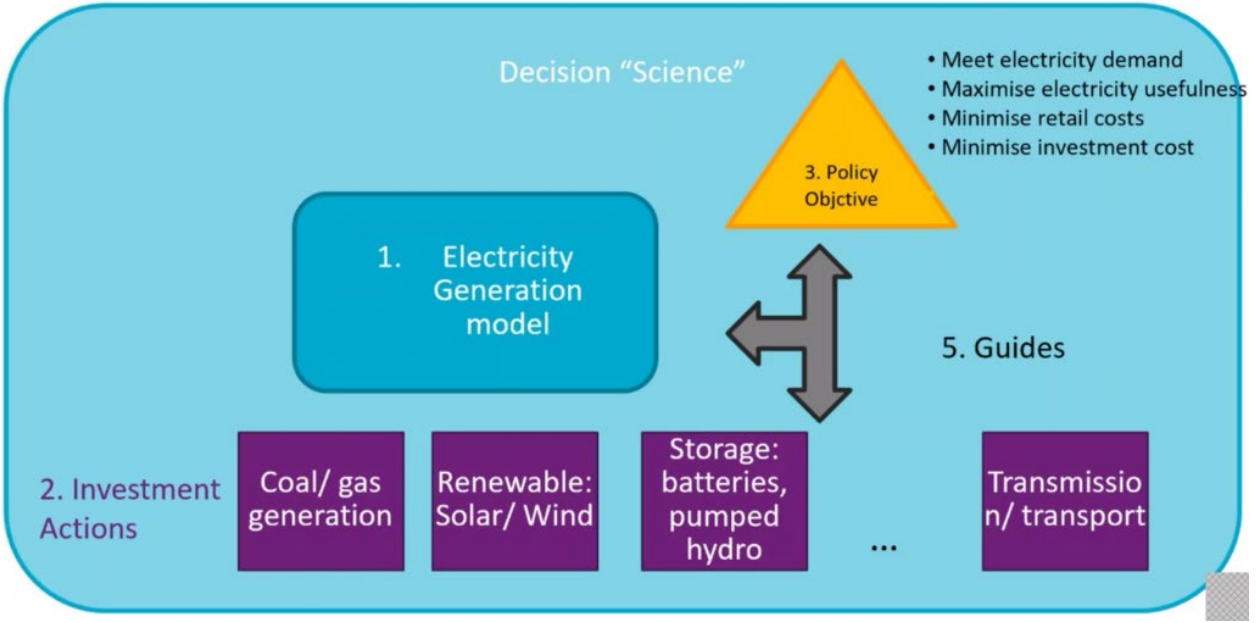
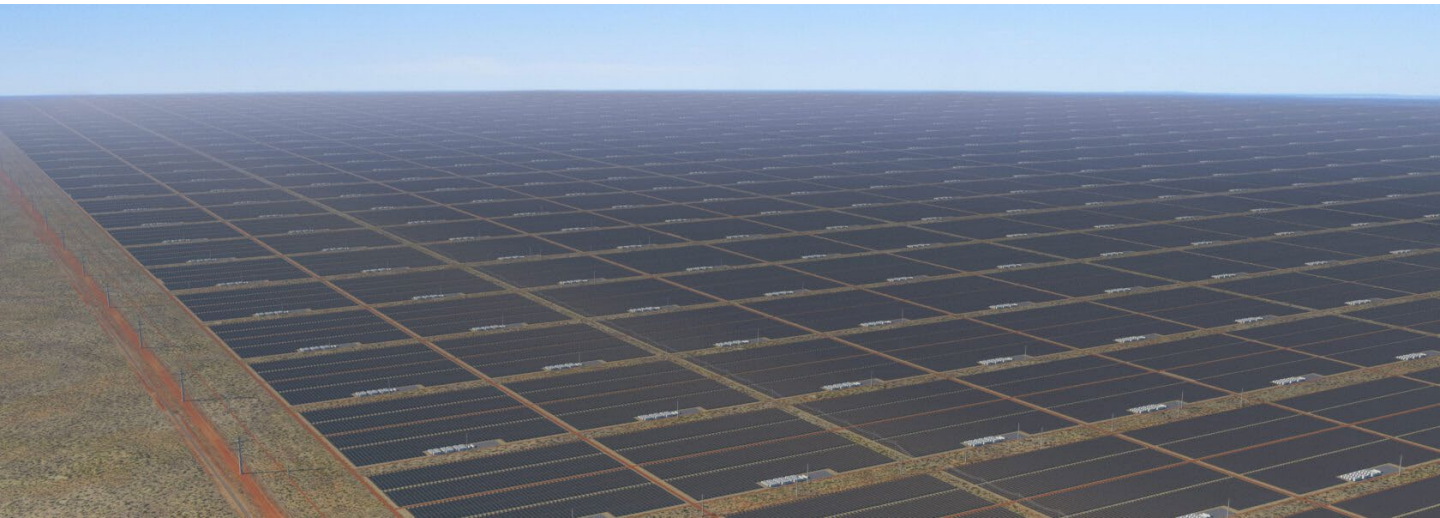
- Context
- Values
- Ideals
- Ethics



Brinsmead, 2022

Take away messages

- How might the technology you are working on be perceived?
- What impacts may your technology have on people and the broader environment?
- What can we do now to minimise those long term impacts?



Thank you

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