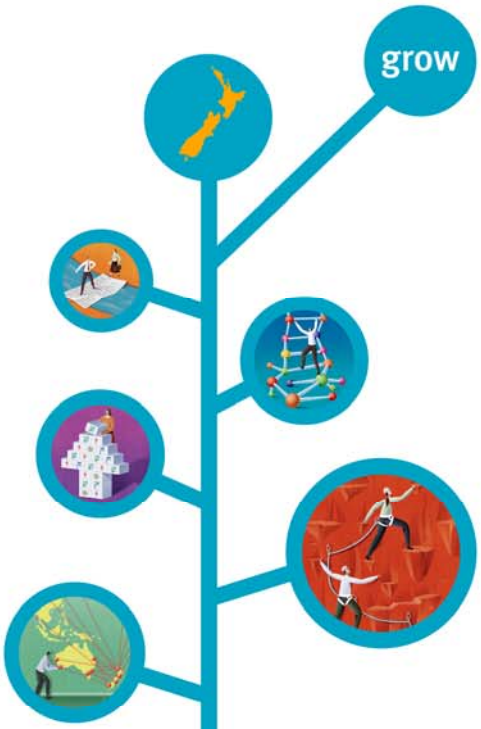

Carbon Capture and Storage

Summary of CCS in New Zealand

April 2009

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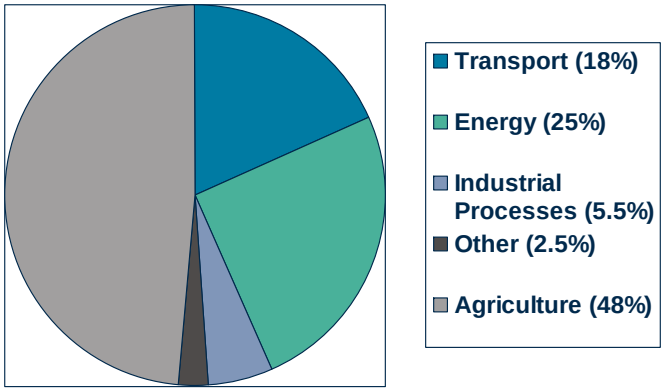
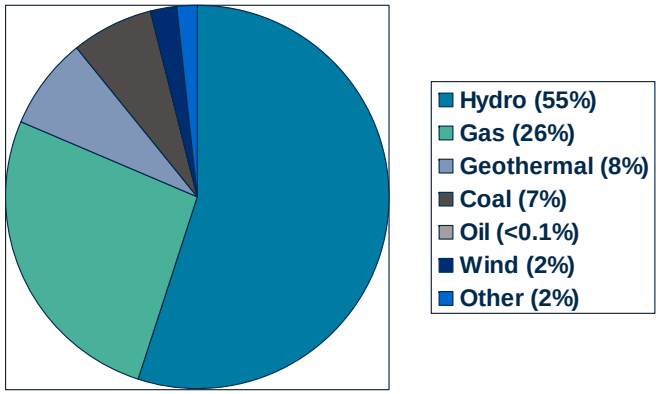
Current context: does NZ need CCS?

NZ GHG emissions (2005)



Electricity Generation (2007)



The Government Approach: the long-term view

- The government's long term goal is to keep all energy options open for NZ

- Future energy options with CCS could include:
  - Gas?
  - Geothermal?
  - Coal for electricity production?
  - Coal to liquid plant using lignite?

~ And perhaps also potentially non-energy CO2 emitters (eg steel/concrete/pulp and paper…)?

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First priorities for CCS

- To enable CCS from a regulatory and legal perspective

- To understand NZ's capacity to store CO_2

- To support global uptake of CCS

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Current NZ CCS Activities

Two working groups are in place to enable CCS in NZ:

CCS Research Steering Group (RSG)

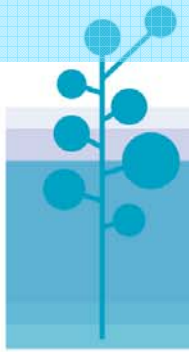
The RSG is an Industry-Government partnership, overseeing research and technical CCS aspects

NZ CCS Policy Group

The Policy Group consists of a range of Government agencies and is responsible for designing the legal framework for CCS, as well as for planning comprehensive engagement on CCS.

Analysing Existing Legislation

Current New Zealand Statutes	Capture of CO_2	Transport of CO_2	Injection of CO_2	Pre Closure Phase	Post Closure Phase	Long Term
Resource Management Act	✓	✓	✓	?	?	?
Crown Minerals Act	✗	✗	?	?	✗	✗
Gas Act	✗	✗	✗	✗	✗	✗
Oceans Legislation	?	✓	?	?	?	?



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Capture of CO2

- The RMA already applies to all environmental effects of any activity

BUT

- The CMA and Gas Act currently do not apply for CO2 or CCS

Transport of CO2

•The RMA governs environmental effects (onshore and offshore to 12nm)
•Oceans legislation will apply outside 12nm
•The RMA covers pipeline construction standards

➢issues include purity of CO2 and moisture content

•But Gas Act regulations covering the transport of gases do not apply as CO2currently doesn't meet the definition of a gas

Injection of CO2

- The RMA continues to govern environmental effects (including accidental discharges)
- Oceans Legislation –applies outside 12nm
- The CMA is about extraction →or maybe injection too?

➢ The CCS policy group is investigating whether the CMA covers allocation of geological storage spaces

Pre Closure Phase

= End of injection to site sign-off

- The Resource Management Act applies
– potentially up to a 35 year period

- Oceans legislation outside 12nm applies

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Post Closure Phase

= Establishing the CO2 is behaving as predicted

• It is not clear whether any existing legislation applies

• The Resource Management Act begins to reach the end of its existing relevance

• Effective monitoring of the behaviour of the stored CO2 will be crucial.

Long term storage

Any existing legal precedent for liability is not designed with the long-term timescales required by CCS. Specifically:

- Monitoring and verification will be required indefinitely
- The total emissions sequestered will need to be confirmed and accounted for (UNFCCC/ETS will need to take this into account)
- A central data repository will be required
- We are looking to international precedents, and will be an active member of international fora to ensure access to best-practice

We're interested in your views…

See MED's CCS web material at
www.med.govt.nz/ccs

Or email us at ccs@med.govt.nz

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