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Invest Victoria

MELBOURNE

AUSTRALIA

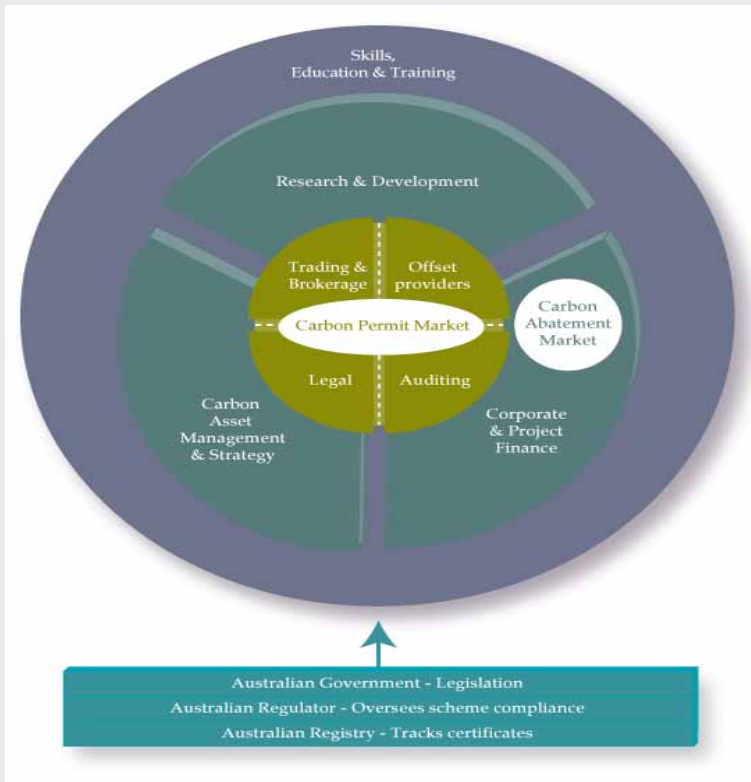
Clean Coal in Victoria

Clean Coal – one part of the solution

Clean coal is part of a *portfolio approach* to climate change mitigation

- No silver bullet for climate change
- Balanced portfolio approach is required
- All technologies and approaches are part of the solution
 - Clean coal is one of these parts

Melbourne – Carbon Market Hub



- Victoria has led innovation and reforms in energy and environmental markets
- Melbourne is the centre of Australia's energy markets and is its industrial base
- Melbourne already has a large number of businesses operating in the Carbon Market Services sector
- Home to the Australian Energy Market Operator (AEMO)

Carbon Market Opportunities

- Victorian Renewable Energy Target (VRET)
- Victorian Energy Efficiency Target (VEET)
- Emissions trading
- Rated as worlds most competitive retail energy market
 - Coal trade
 - Coal to Liquids (CTL)

Commercialisation Challenges

Project Financing:

- Capex and Opex
- Risk allocation and insurance

Capability

Capability to act:

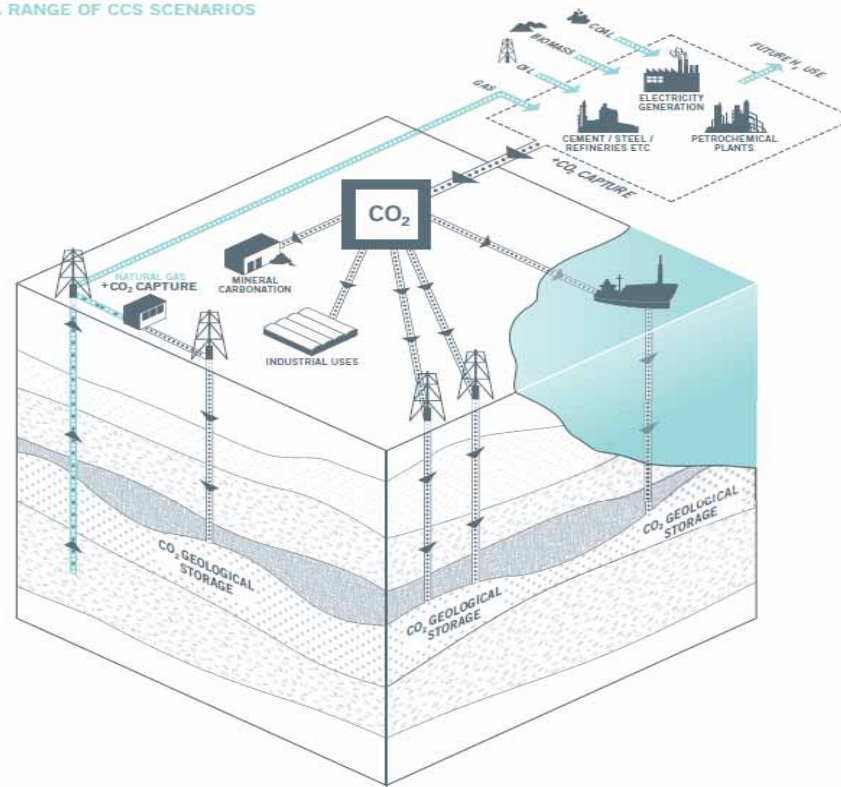
- Social license to operate

Skills:

- Technology based
- Public Policy
- Project delivery

Carbon Capture and Storage

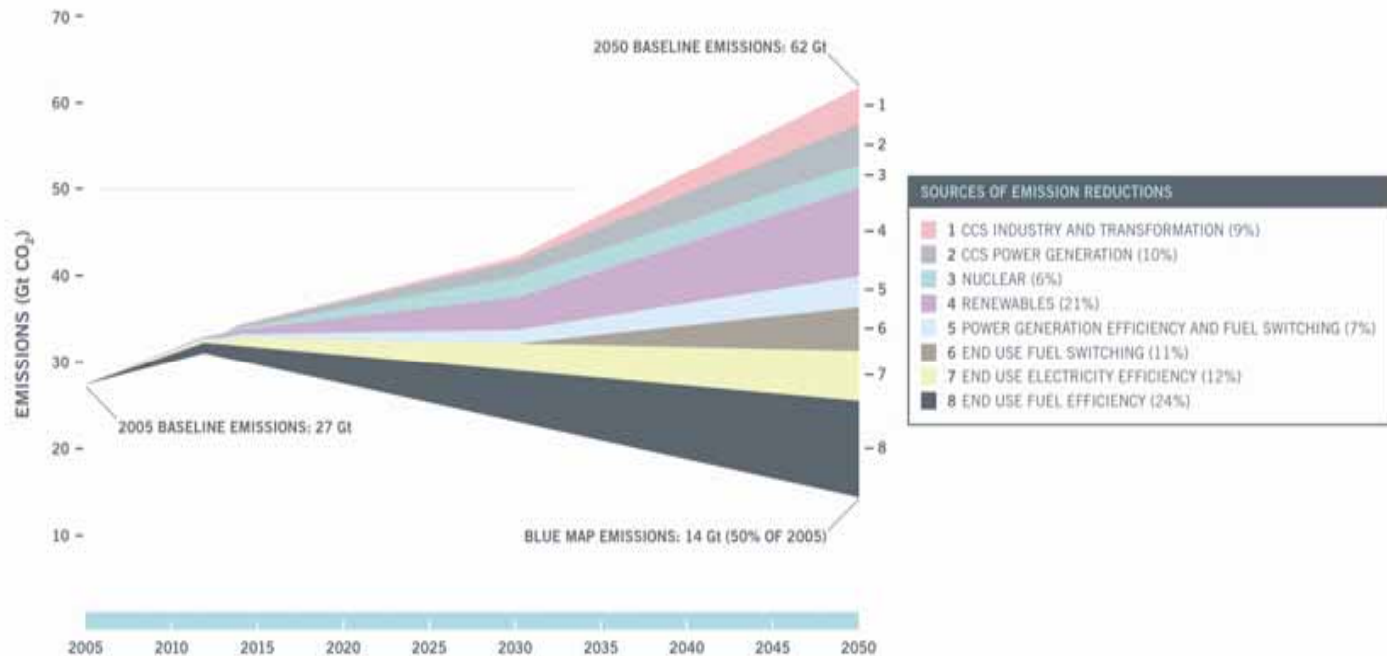
FIGURE 2 - A RANGE OF CCS SCENARIOS



AFTER CO2CRC.

CCS – an important role to play

CCS expected to deliver around 20% of necessary CO₂ reductions by 2050



IEA BLUE MAP SCENARIO: THIS SCENARIO IS CONSISTENT WITH STABILISING CO₂ CONCENTRATIONS AT 450PPM, WITH AN ASSOCIATED GLOBAL RISE IN TEMPERATURE OF TWO TO THREE DEGREES CELSIUS, BUT ONLY IF THE REDUCTION IN ENERGY-RELATED CO₂ EMISSIONS IS COMBINED WITH DEEP CUTS OF GREENHOUSE GAS EMISSIONS FROM NON-ENERGY SOURCES. SOURCE: INTERNATIONAL ENERGY AGENCY 2006, ENERGY TECHNOLOGY PERSPECTIVES: SCENARIOS AND STRATEGIES TO 2050.

Victorian Coal – the real & substantial challenge

Victoria's coal constitutes one of the **world's great energy resources:**

- Holds more energy than North West Shelf gas reserves
- Second largest brown coal reserves in the world – 500 year's worth
- Provides more than 90% of Victoria's electricity needs
- Is inexpensive to mine as it is close to the surface
- Has a very low impurity level

But...

More than 50% of Victoria's emissions come from brown coal electricity generation



Positioning Victoria as a leader in clean coal

Energy Technology Innovation Strategy:

- Victoria has committed more than \$380 million to advance pre-commercial low emission energy technologies in clean coal and renewables

World leading CCS project in Victoria:

- The Otway Carbon Capture and Storage project is the **5th largest** project of its kind in the world 100,000 tonnes of CO₂ to be injected and stored

Australian Government Flagship Funding:

- Solar Flagships - \$1.6 bn
- CCS Flagships - \$2.4 bn

Positioning Victoria as a leader in clean coal

Providing legislative and regulatory clarity:

- First state in Australia to initiate legislative clarity
- Greenhouse Gas Geological Sequestration Act 2008

Brown Coal Innovation Australia:

- Announced August 2009
- \$16m to establish BCIA and fund new research

Clean Coal Victoria

- \$12m to lead the sustainable development of Victoria's brown coal

Positioning Victoria as a leader in clean coal

Leveraging off and integrating with Federal initiatives:

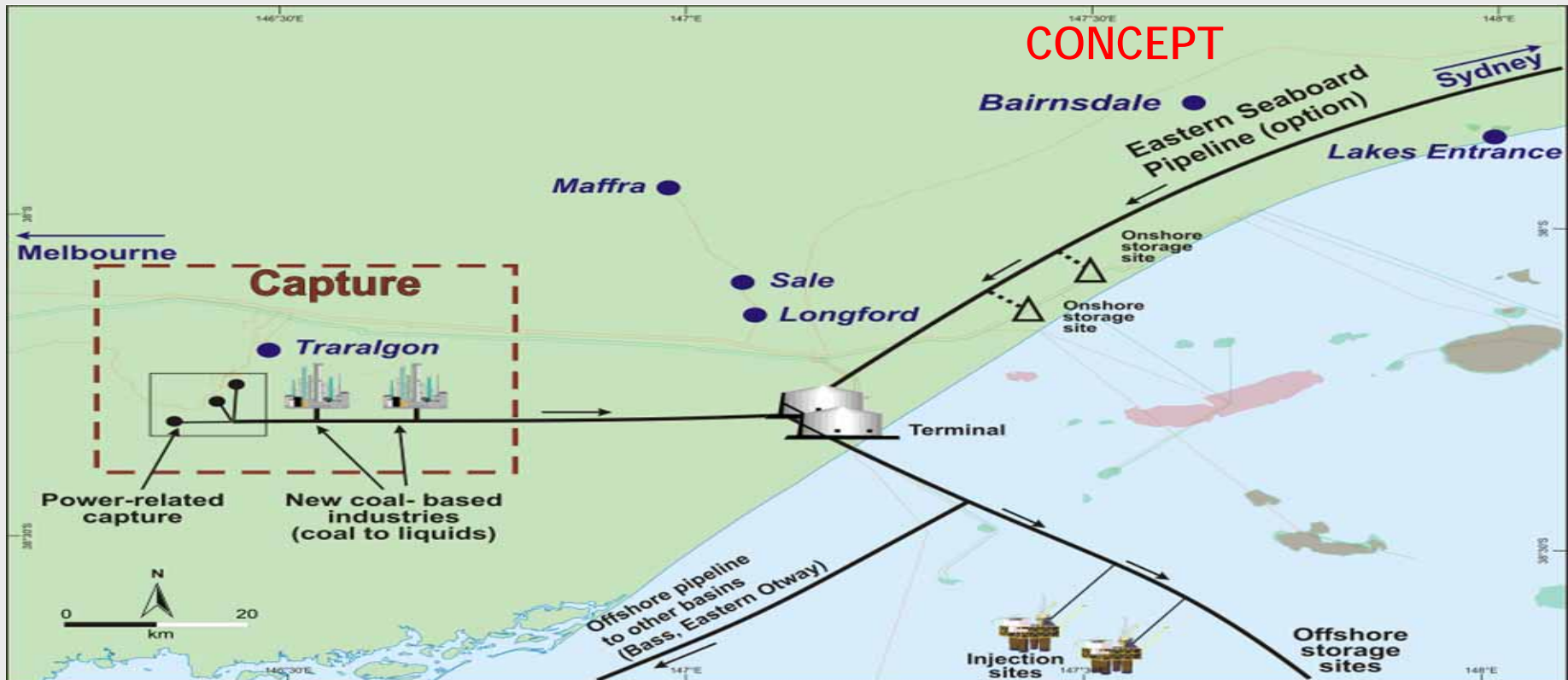
- Global Carbon Capture and Storage Institute
- Carbon Storage Taskforce

International Collaboration:

- MoU with Manitoba (Canada)
- MoU North Rhine Westphalia (Germany)
- MoU Clinton Foundation



Conceptual View of the Victorian CCS Network



World class investment location

- Robust and stable investment environment – the Victorian economy's average **growth rate** for the past ten years is **3.2%**, higher than the global and OECD average
- Victoria as an 'innovation economy'
- Actively working with the Commonwealth in developing a carbon price – CPRS
- Melbourne's Carbon Market capabilities



Victoria – Clean Coal Opportunities

Clean Coal is part of the solution.

Victoria is positioning itself as a leader in clean coal development:

- World leading projects and funding programs
- R&D and international collaboration
- Long term, staged approach for CCS development
- Supportive investment environment

Thank you

If you are serious about cleantech investment – we want to talk to you.

Come and see us on the Victorian Government stand, or please see:



www.investvictoria.com

