



ACA BRIEFING ON CLIMATE CHANGE AND CARBON CAPTURE AND STORAGE (CCS)

KEY ISSUES

1. Climate change is a global issue not just an Australian issue.

- *Reducing greenhouse gas emissions in Australia will need to be part of a broader concerted global action on climate change if the world is to meet reduction targets for atmospheric stabilisation.*
- *It is not in Australia's interests to act in isolation. This is because independent action by Australia to reduce greenhouse gas emissions substantially, in itself, would deliver barely discernible climate benefits but could be nationally very costly.*
- *But it is not in Australia's interests to free ride either. Facilitating transition to an impending lower emissions economy is a strong rationale for independent action, but it is contingent on the imminent emergence of an extensive international response.*

2. Energy is linked to climate change.

- *There are an estimated 1.6 Billion people globally who still do not have access to electricity, fossil fuels are a low cost, abundant source of energy.*
- *Fossil fuels must be part of a response to addressing climate change*
- *The International Energy Agency projects that global electricity demand will double by 2030 and that the share of coal-fired power will increase from 40 to 45 per cent. Coal's share of global energy emissions will also increase from 41 per cent in 2005 to 45 per cent in 2030. China and India will continue to account for most of that growth.*

3. Australia must have a balanced and comprehensive climate change policy response

- *Ensure our ongoing energy security in Australia*
- *Ensure ongoing economic growth and maintain industry's' international competitiveness*
- *Ensure we actually reduce our greenhouse gas emissions and not be responsible for carbon leakage to other nations.*

4. Managing climate change will incur costs to both households and industry.

- *Australian household through electricity, petrol and food*
- *Australian industry through increased costs of operating*

5. Technology is going to be a critical part of addressing climate change.

- *The way we produce, utilise and consume energy is on the verge of a new revolution.*
- *There is no "silver bullet", the IPCC Third Assessment Report (TAR) indicates that no single technology option will provide all of the emission reductions needed to achieve stabilization, but a portfolio of mitigation measures will be needed.*
- *Without the development of low emissions technologies the only option for making very substantial reductions in emissions will be to reduce economic activity, clearly a very expensive outcome.*
- *The development of low emissions technologies will significantly lower the cost of abatement. To facilitate this Australia needs a **National Low Emissions Technology Strategy**, covering all prospective low emissions technologies from research phase through to demonstration and commercialisation, as an essential element of Australia's climate change response*

6. Government policy needs to be transparent, long term and provide certainty to industry.

- *Without confidence in the rules investors won't invest in low emission technologies.*
- *Industry needs to have transparency, certainty and confidence in government policy in order to respond in a timely and comprehensive way.*




7. Emissions trading and other carbon constraints will only be effective in reducing global emissions if they are linked to global action.

- *We must find a way to transition to a low carbon economy and also empower developing nations to make the same transition at a time when their economies and energy needs are soaring.*

SORTING OUT THE FACTS FROM THE FICTION

CARBON CAPTURE AND STORAGE

	FACT	FICTION
<i>CCS is an unproven technology and won't be commercially available until 2030</i>		x
<ul style="list-style-type: none"> • Statoil Hydro has been safely storing a million tonnes of CO₂ per annum for more than 12 years under the North Sea with no leakage. • There are numerous projects today that are collecting and/or injecting carbon dioxide into underground geological structures (many of these are associated with enhanced oil recovery) and many more projects will become operational during the next 10 years. • In Australia demonstrations of CCS technologies are happening now with more due to come online before 2015, including: <ul style="list-style-type: none"> ○ Post combustion capture pilot plants for capture will be operational this year with a large scale plant with storage operational by 2015, ○ Otway pilot storage project was operational 2008, ○ Oxyfuel capture with storage will be operational in 2010 and ○ Coal gasification Stage 1 plant with pilot storage will be operational by 2012 with the Stage 2 commercial scale plant with full storage operational by 2017. 	✓	
<i>Governments should not invest in CCS and it's too costly and leakage rates would cancel out any climate benefit.</i>		x
<ul style="list-style-type: none"> • The cost of doing nothing will be far greater. • CCS technologies will still need to compete on their commercial merits with other available power generation technologies in the market on cost, availability and reliability. • Initial estimates indicate the current cost of capturing and storing carbon dioxide from a stationary industrial source today would range between \$30 and \$35 Megawatt hours (MWh) for pre-combustion applications and between \$35 and \$45/MWh for post combustion depending on whether black or brown coal is used and where the geological storage location is sited. (Source: CO2CRC) • Given the base-power generation costs from these different technologies this would result in overall increases in the cost of generation from a geosequestration-enabled power plant today of between \$35-45/ MWh. (Source: CO2CRC) • Current research at CO2CRC, and other groups around the world, is aiming to reduce this cost increase to between \$15 and \$20/MWh.* • There is no basis to suggest that CCS projects will leak, the oil and gas industry has been utilising similar technology and geologies for decades. 	✓	
<i>Carbon capture and storage is a scam. It is the ultimate coal industry pipe dream,</i>		x
<ul style="list-style-type: none"> • The International Governmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA) both recognise that carbon capture and storage technology has a vital role to play in reducing global greenhouse gas emissions. • CCS is not a “coal technology” it can be applied to other fossil fuels such as oil and gas fired power generation and LNG and oil production and can potentially be applied to other industrial processes such as cement and chemical production. 	✓	
<i>Futile investments in CCS threaten to starve existing clean renewable energy initiatives and energy saving efforts of much-needed funds to ensure that dangerous climate change is prevented.</i>		x
<ul style="list-style-type: none"> • Halting power generation from coal and gas in Australia poses a real threat to Australia's energy security. • The coal industry supports a role for renewable energy in Australia's energy mix. However 	✓	

<p>we will need all sources of energy including gas + CCS and coal + CCS if we are to meet our growing energy demand and reduce emissions in the future.</p> <ul style="list-style-type: none"> • In Australia, State and Federal Governments spend billions for the development and deployment of renewable energy through the following initiatives: <ul style="list-style-type: none"> ○ <i>Mandatory Renewable Energy Target</i> ○ <i>Rudd Government's \$500m Renewable Energy Fund</i> ○ <i>Expanded Renewable Energy Target</i> ○ <i>Solar Cities Program</i> ○ <i>Renewable Energy Equity Fund</i> ○ <i>Renewable Remote Power Generation Program</i> ○ <i>Low Emissions Technology and Abatement</i> ○ <i>Renewable Energy Rebates for photovoltaics, solar hot water systems, solar panels and renewable energy in remote areas.</i> 		
<p>The coal industry receives massive fossil fuel subsidies from Government.</p>		
<ul style="list-style-type: none"> • The coal industry receives no special direct payments as part of its core business other than those such as the fuel tax credit scheme and the R&D Tax Concession which are non-exclusive and available across all industry sectors. <ul style="list-style-type: none"> ○ The Report commissioned by Greenpeace last year into fossil fuel subsidies demonstrates a basic lack of understanding about one of Australia's largest industries. The majority of the estimated 'subsidies' in that report relate to unpriced greenhouse gas emissions not direct subsidies as implied in the report. • The coal industry <ul style="list-style-type: none"> ○ directly employs over 30,000 Australians and a further 100,000 indirectly; ○ will provide over \$1.8 billion in royalties to State Governments in 2007/08. ○ has committed over \$1 billion to support demonstration of low emission coal technologies including carbon capture and storage via the COAL21 Fund. The Fund is a voluntary industry levy on saleable coal production in Australia and is the first Fund of its kind in the world. ○ underpins the security, reliability and comparatively low-cost of Australia's coal-based electricity supply (over 80 %) which supports the competitiveness of a significant proportion of Australian industry and provides affordable power for Australian households; ○ exploration activity currently valued at over \$190 million in 2007; ○ commissions many major projects. Those projects currently under construction, committed or under consideration are projected to provide additional employment of over 20,000 Australians and involve around \$23 billion in new investment in Australia. 		
<p>The increased energy requirements of CCS would effectively wipe out the power plant efficiency gains of the last 50 years.</p> <p>For every four CCS-equipped coal-fired power plants, a fifth would be needed to make up the energy shortfall.</p>		
<ul style="list-style-type: none"> • Available technology captures about 85–95% of the CO₂ processed in a capture plant. A power plant equipped with a CCS system (with access to geological or ocean storage) would need roughly 10–40% more energy than a plant of equivalent output without CCS, of which most is for capture and compression. For secure storage, the net result is that a power plant with CCS could reduce CO₂ emissions to the atmosphere by approximately 80–90% compared to a plant without CCS (<i>MIT Study – The Future of Coal</i>) • Research studies are being undertaken around the world to determine how to reduce the energy usage and reduce the cost of CCS systems. 	