



















CLEAN ENERGY FUTURE LEGISLATION

AUGUST 2011

Introduction

This submission is made by the Minerals Council of Australia in conjunction with the Australian Coal Association, the Australian Uranium Association, the Chamber of Mines and Energy Western Australia, the Queensland Resources Council, the New South Wales Minerals Council, the Minerals Council of Australia (Victorian Division), the Tasmanian Minerals Council, the South Australia Chamber of Mines and Energy and the Minerals Council of Australia (Northern Territory Division).

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Summary Points

The Australian minerals sector <u>opposes</u> the passage of the proposed Clean Energy Future legislation.

- The proposed scheme will:
 - o reduce growth in employment, real wages and productivity, and
 - harm the competitiveness of Australia's most efficient export and import competing industries, and
 - o produce no environmental dividend.
- The minerals sector is disappointed that the Government has ruled out any changes to the legislation other than minor technical amendments.
 - This concern is accentuated by the serious shortcomings of the flawed 'consultation process' that preceded the 10 July package.
- The legislation should be withdrawn, and replaced by a genuine, open and transparent review of all carbon policy options.
 - o Such a review was promised by the Gillard Government but not delivered.

Seven reasons why the CEF policy approach is flawed

- I. World's biggest carbon tax: The scheme will generate carbon tax revenue of around \$A391 per Australian in its first year. That compares with tax revenue generated by the European Union's emissions trading scheme of just \$A1.53 p.a. since its commencement in 2005.
 - Between January 2005 and 30 June 2011, the EU's ETS raised \$A4.96 billion in tax revenue. Over the first 6 and half years the proposed Australian scheme will raise approximately \$A71 billion.
- 2. <u>Going it alone:</u> The proposed carbon pricing scheme will impose the world's first economy-wide carbon tax at a time when other nations are moving away from climate policy action.
 - Since June 2010, the United States, Canada and Japan have dumped or postponed carbon pricing schemes. Australia's emissions performance, since 1990 and more recently has been better than many nations. In 2010, Australia's emissions fell by 0.6 per cent, while emissions in China's grew by 10.4 per cent and by 3.9 per cent in the US.² Offers made by China and India as part of stalled global negotiations will see their emissions grow by 496 and 350 per cent by 2020 respectively (on 1990 levels).

¹ See Climate Change Minister Combet's 16 August statement that 'the package is the package'.

² See Department of Climate Change and Energy Efficiency, Quarterly Update of Australia's National Greenhouse Gas Inventory, March Quarter, 2011. BP Statistical review of Energy, June 2011. Energy Information Administration, U.S. Energy-Related carbon Dioxide Emissions 2010, 18 August 2011.

- 3. A tax on competitiveness: Australia's export and import-competing sectors will face the highest carbon costs in the world.
 - More than 80 per cent of Australia's merchandise exports will face the full brunt of carbon costs from the outset of the scheme. Australia's minerals sector will face carbon costs of an estimated \$25 billion by 2020, with only 10 per cent of minerals exports, by value, receiving assistance under programs designed to safeguard international competitiveness.
- 4. Economic cost but no environmental impact: Analysis of Treasury modelling shows the carbon pricing scheme will reduce national income by \$1 trillion by 2050.³ Growth in real wages and productivity will slow. The Government claims that the scheme (including purchase of international permits) will reduce projected emissions by 160 million tonnes. Separate estimates show that China will be producing 49 million tonnes of CO_{2e} by 2020 every day.⁴
 - In other words, in 2020, China will replace Australia's emissions reductions in less than 4 days.
- 5. <u>Hidden tax on fuel:</u> Analysis of taxation statistics shows that the proposed carbon tax equivalent reduction in the Fuel Credit Scheme will impose a <u>direct cost</u> on more than 60,000 businesses, not just 400-500 'big polluters' as claimed by the Government.
 - Starting at 6.2 cents per litre in 2012-3, the effective carbon tax on fuel will rise as the carbon tax increases by 5 per cent per annum until 2015, and then rise even further under the emissions trading scheme.
- 6. Flaws in the Clean Energy Future legislative package: The legislative package fails key Multi-Party Committee on Climate Change principles and commitments in 6 key areas including:
 - <u>least cost abatement</u>, by limiting the *amount*, *type* and *cost* of international permits, as well as access to international permits during the fixed price phase.
 - <u>investment certainty</u>, the delays in determining annual caps and a 2020 target will prevent prudent planning, while the absence of certainty of assistance (from the Jobs and Competitiveness Program⁵) will mitigate against sensible planning for affected firms.

⁴ See Australian Government, Strong Growth, Low Pollution: Modelling a Carbon Price, July 2011. p.151

³ See Senate Scrutiny of New Taxes Committee, Hearing Transcript, August 10, p.61.

⁵ The Jobs and Competitiveness Program is the new description for the scheme known as the Emissions Intensive Trade Exposed (EITE) program under the Carbon Pollution Reduction Scheme (CPRS).

- flexibility, by failing to align the scheme with international developments, not least by imposing the world's highest carbon costs on Australian businesses ahead of their international competitors.
- budget neutrality, by converting an environmental measure into a revenue raising exercise, and by seeking to 'pick winners' through a range of multi-billion dollar schemes confined to arbitrarily selected technologies.
- energy security, by providing an inadequate and arbitrary transitional assistance scheme to the power generation sector, by failing to remove the distortions created by the Renewable Energy Target, adding new complementary measures and funding schemes that discriminate between clean energy technologies.
- international competitiveness, by failing to adopt a scheme design providing a measured transition to a carbon-constrained world, by failing to align Australia's approach to international competitiveness safeguards with approaches adopted or planned in comparable schemes abroad, by failing to provide transitional assistance to a wide range of trade exposed sectors, by providing inadequate assistance to a sub-set of Australia's trade exposed industry and failing to provide adequate guarantees of continued support to those firms.
- 7. Taxation treatment: There are a number of flaws in the taxation aspects of the proposed carbon pricing scheme including its failure to achieve least cost abatement. In addition:
 - some income tax rules have been modified for the purposes of this proposal so they are inconsistent with standard accounting accrual principles and valuation practices
 - the fuel tax breaches the long-standing taxation policy principle that tax should not be applied to business inputs.

The Australian minerals sector proposes a better alternative; a new approach that does not impose costs on exporters ahead of international competitors.

- Australia should align its approach with other nations and adopt a phased approach to the introduction of auctioning of permits.
- All other international schemes are based on a model where trade exposed sectors are safeguarded from carbon costs during lengthy transitional periods.

1. Out of Step: Australia's scheme will be the world's biggest carbon tax.

Key points

Australia's scheme will raise more tax in its first 7 months than the EU's ETS generated in its first 6 and a half years.

The Government cites a US regional scheme as comparable action - the carbon price in that scheme is \$1.80, compared with the opening carbon tax of \$23 in Australia's scheme.

By 2020, the Australian scheme will raise an estimated \$105 billion in carbon taxes, including nearly \$16.5 billion in fuel taxes.

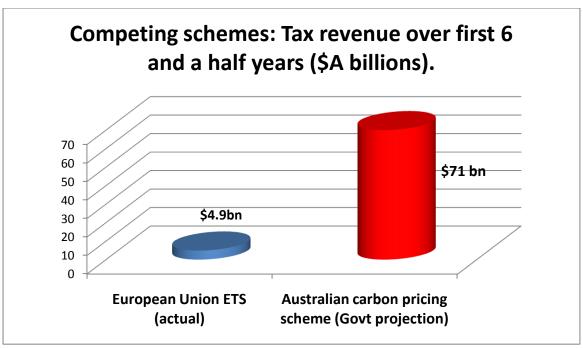
The proposed scheme is <u>out of step</u> with schemes in place or being developed around the world.

 It is the world's most punitive carbon pricing scheme, including the highest carbon price, the weakest protections for trade competitiveness and design flaws that flatly contradict the stated commitment to least cost abatement.

Australia's scheme will raise much more tax than the EU's carbon trading scheme.

- **EU:** Newly updated data compiled by the Centre of International Economics shows that in the 6 and a half years to June 30, 2011, the EU's ETS raised 3.674 billion Euros or \$A4.9 billion.
- Australia: Based on the Gillard Government's own projections, over its first 6 and a half years, Australia's new carbon pricing scheme will raise around <u>\$A71 billion</u>.⁷
 - Despite producing <u>one-tenth of the EU's emissions</u>, Australia faces <u>a tax</u> take 14 times larger than the EU.

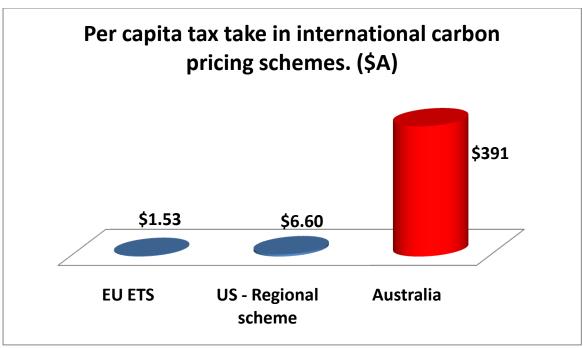
⁶ Centre of International Economics, *Notes on revenue from the sale of emissions permits; RGGI and EU ETS*, July 2011. ⁷ Revenue from first 6.5 years of Australian scheme estimated at \$70.9 billion.



Source: Centre of International Economics. Based on Australian Government projections of carbon prices and fuel tax receipts.

Tax revenue on a per capita basis...

- **EU:** On a per capita basis, the EU ETS has raised tax revenue of **\$A1.53** per person per annum since 2005. (Based on EU population of 500 million).
- Regional Greenhouse Gas Initiative (Regional trading scheme in **Northeast US):** According to analysis by the Centre of International Economics, tax revenue from the RGGI from its inception in 2009 to June 30, 2011 totalled **\$US886.4** million or **\$A825** million (based on exchange rate of **\$A1** = \$0.9308USD).
 - o Tax revenue from RGGI in AUD On a per capita basis, the RGGI scheme which covers 10 North Eastern states in the US has raised tax revenue of **\$A6.60** (based on combined RGGI states' population of 50 million).
- Australia: The Australian Government has signalled that in its first year, the tax take from the Australian carbon pricing scheme (including carbon taxes and associated fuel tax measures) will be \$8.6 billion.
 - That equates to a per capita tax take of \$A391 (based on Australian population of 22 million).



Source: Centre of International Economics, Australian Government.

Australian carbon pricing scheme projected revenues 2012-21 (\$millions)

	Carbon price	Permit revenues	Fuel credit change	Aviation and other excise	Total carbon tax take	Cumulative tax take (\$millions)
2012-3	\$23	7740	570	290	8600	
2013-4	\$24.15	8140	620	320	9080	\$17,680
2014-5	\$25.40	8590	1180	320	10090	\$27,770
2015-6	\$29.00	9807	1282	330	11419	\$39,189
2016-7	\$30.45	10297	1461	341	12099	\$51,288
2017-8	\$31.97	10812	1666	352	12830	\$64,118
2018-9	\$33.57	11353	1898	363	13614	\$77,732
2019-20	\$35.25	11921	2163	374	14458	\$92,190
2020-21	\$37	10733	2463	386	13582	\$105,772
		\$89,393	\$13,303	\$3,076	\$105,772	

Notes: Carbon prices based on Treasury modelling. Permit trajectory drawn from Clean Energy Future publication, then held flat until 2019-20. Fuel taxes growth based on the same per annum increase used in Government fiscal projections for forward estimates.

2. <u>Going it alone</u>: Australia is no laggard and other nations are resisting climate policy action.

Key points

Since 1990, Australia's emissions intensity per \$ of GDP has improved faster than most other nations, including the EU and US.

Australia has also done better than most other major economies in restraining actual emissions since 1990. Unlike many developed nations, it will meet its Kyoto targets.

Coal consumption is increasing in other nations but falling in Australia.

In 2010, emissions in Australia *fell* by 0.6 per cent, while emissions in China *grew* by 10.4 per cent and 3.9 per cent in the US. The increase in China and US emissions alone was double Australia's total emissions in 2010.

Australia's emissions savings by 2020 will be dwarfed by growth elsewhere. For example, Treasury estimates suggest that by 2020 China will be emitting 49 million tonnes of CO_{2e} every day, consuming Australia's 'saved' emissions of 160 million tonnes in less than 4 days.

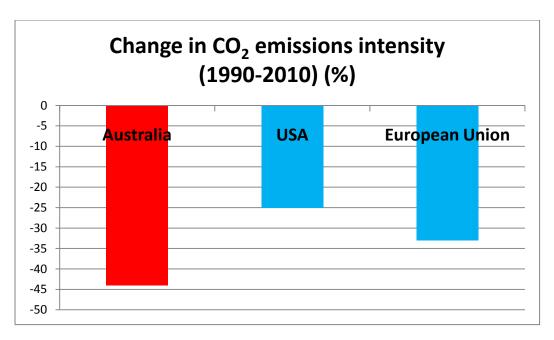
Since 1990, Australia's 'carbon productivity' has improved at a faster rate than many developed nations, including the EU and US.

- By the Kyoto Protocol's target period (2008 to 2012) Australia's greenhouse gas emissions per \$billion of real GDP will have <u>declined by 44 per cent since 1990</u>.
 - This far outstrips the 31 per cent improvement in the EU and 25 per cent in the US.9
- Under Australia's offer of a 5 per cent reduction in emissions by 2020, Australia's emission intensity will <u>fall by 45 per cent between 2005 and 2020</u>.

⁸ Department of Climate Change, 2007: Tracking to the Kyoto and 2020, February 2008. p.15.

⁹ See http://www.pewclimate.org/international/EU.

¹⁰ Warwick J Kibbin, Adele Morris and Peter J Wilcoxen, 'Comparing Climate Commitments: A Model-based Analysis of the Copenhagen Accord', *Discussion Paper 10-35*. June 2010.



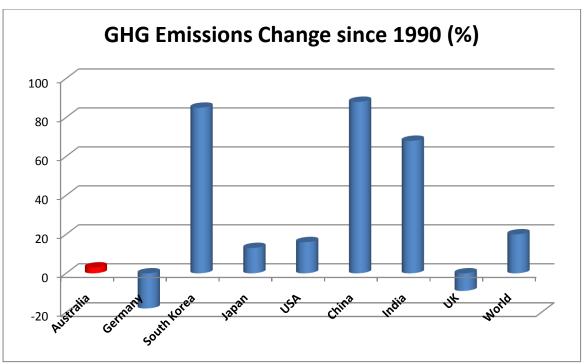
Australia has performed better than most major developed and developing nations in restraining GHG emissions since 1990.

- Government claims that other nations are acting more aggressively than Australia is not reflected in their actual performance in constraining emissions. In fact, the record suggests the opposite.
- The only nations to have performed better include Germany and the United Kingdom, both of whom benefited from the choice of 1990 as a base year.
 - Germany's emissions fell sharply after unification and the collapse of the East German economy while 1990 also broadly coincided with liberalisation in the UK energy market and the related shift to reliance on North Sea gas.

Change in Greenhouse Gas Emissions since 1990: Key nations

Country	GHG Emissions change since 1990
Australia	3 per cent increase.
Canada	27 per cent increase.
Japan	13 per cent increase.
Spain	34 per cent increase.
New Zealand	23 per cent increase.
United States	16 per cent increase.
China	88 per cent increase.
South Korea	85 per cent increase.
India	68 per cent increase.
Germany	18 per cent decrease.
United Kingdom	9 per cent decrease.
World	20 per cent increase.

Sources include Climate Analysis Indicators Tool (CAIT) Version 8.0, World Resources Institute, the Institute for 21st Century Energy, the Australian Department of Climate Change and Energy Efficiency, and the New Zealand Ministry of the Environment. Data includes latest available GHG data for each nation (including land use and land use change). The data for New Zealand does not include land use and land use change.



Sources include Climate Analysis Indicators Tool (CAIT) Version 8.0, World Resources Institute, the Institute for 21st Century Energy and the Australian Department of Climate Change and Energy Efficiency.

Australia's greenhouse gas emissions are falling, but growing strongly in other major economies

- New data reveals that Australia's greenhouse gas emissions actually fell by 0.6 per cent in the 12 months to March 2011
 - Australia's emissions fell to 542 million tonnes CO_{2e} in the 12 months to March 2011, according to the newly released quarterly update of Australia's National Greenhouse Gas Inventory.

By contrast, greenhouse gas emissions in China and the United States grew strongly.

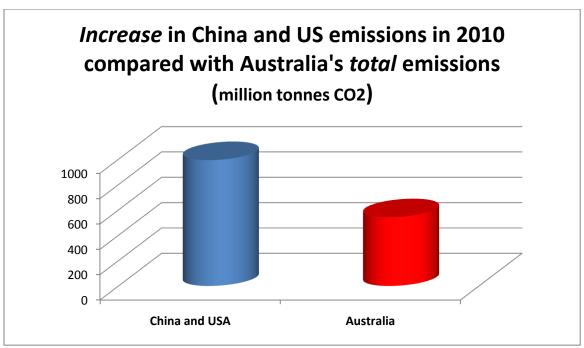
- China's emissions grew by 10.4 per cent (or 780 million tonnes) to reach 8.33 billion tonnes of CO₂ in 2010.¹²
- United States energy-related CO₂ emissions grew by 213 million tonnes in 2010.¹³

In 2010, the <u>increase</u> in China's and US emissions – 993 million tonnes CO_{2e} - was nearly double Australia's <u>entire</u> annual emissions.

¹¹ Department of Climate Change and Energy Efficiency, Quarterly Update of Australia's National Greenhouse Gas Inventory, March Quarter, 2011.

¹² BP Statistical review of Energy, June 2011 cited in Reuters, 'Global CO₂ emissions rose over 10 per cent in 2010 – BP, 8 June, 2011.

¹³ Energy Information Administration, U.S. Energy-Related Carbon Dioxide Emissions 2010, 18 August 2011.



Sources: Department of Climate Change and Energy Efficiency, BP Statistical Review of Energy, (US) Energy Information Administration.

The proposed carbon pricing scheme will impose the world's first economy-wide carbon tax at a time when other nations are moving <u>away</u> from climate policy action.

- Since June 2010, the US, Canada and Japan have dumped or postponed carbon pricing schemes.
- Where action is underway, carbon pricing has been phased in to prevent carbon leakage.
 - Free (or virtually free) allocation of all permits is a common feature of emissions trading schemes being implemented or planned around the world, including in the EU, regional US schemes and Korea.
- Developing nations' emissions are continuing to grow exponentially. China's Copenhagen 'offer' would see its CO_{2e} emissions <u>rise</u> by 496 per cent by 2020 (on 1990 levels), ¹⁴ while India's offer will allow its emissions to <u>grow</u> by 350 per cent by 2020 (on 1990 levels). ¹⁵

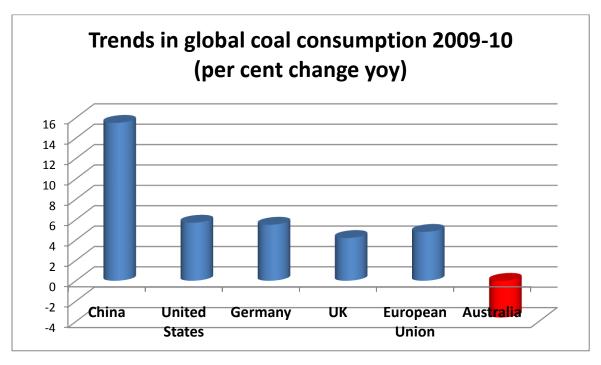
Coal consumption is increasing in other nations, while contracting in Australia.

 Total coal consumption reached record levels in 2010, with 5 nations (China, US, Russia, India and Japan) accounting for 77 per cent of global coal use.¹⁶

¹⁴ Warwick J Kibbin, Adele Morris and Peter J Wilcoxen, 'Comparing Climate Commitments: A Model-based Analysis of the Copenhagen Accord', *Discussion Paper 10-35*. June 2010
¹⁵ Ibid

¹⁶ International Energy Agency, Coal Information 2011, August 2011

- The <u>increase</u> in China's consumption of coal (thermal and coking) in 2010 was greater than Australia's <u>total</u> production of coal.
 - China's consumption of coal grew by 15 per cent or 435.4 million tonnes.
 Australia's production of coal in 2010 was 420.3 million tonnes.
- China's production of coal has increased by 150 per cent since 2000, and it now accounts for 51.1 per cent of world coal production.
- In 2010, coal consumption:
 - o increased by 5.7 per cent in the US
 - increased by 4.8 per cent in the EU
 - o increased by 15.1 per cent in China
 - increased by 4.2 per cent in the United Kingdom, and by 5.5 per cent in Germany, and
 - o **fell** by 3.6 per cent in Australia.



Source: IEA.

Despite Government claims of action by China, Treasury forecasts indicate that China's emissions will grow exponentially over the period to 2020.

- In 2008, the Australian Treasury predicted that baseline GHG emissions in China will reach 16.1 billion tonnes of CO_{2e} by 2020.¹⁷
 - Since 2008, the Australian Government has repeatedly claimed that China is taking a leadership role in acting to reduce its emissions.
- But in the modelling released on 10 July 2011, the Australian Treasury revised its 2008 baseline estimate predicting that GHG emissions in China will now reach 17.9 billion tonnes of CO_{2e} by 2020.¹⁸
 - It means that in <u>less than 3 years Treasury has increased its</u>
 <u>assessment of China's projected 2020 emissions by 1.8 billion</u>
 <u>tonnes of CO_{2e}</u> that is more than 3 times Australia's current total (2009) emissions.¹⁹

¹⁷ Australian Government, Australia's Low Pollution Future, October 2008. p.31.

¹⁸ Australian Government, Strong Growth, Low Pollution: Modelling a Carbon Price, July 2011. p.151

¹⁹ Department of Climate Change and Energy Efficiency, National Greenhouse Gas Inventory 2009, May 2011. p.8.

3. <u>Economic damage</u>: The carbon pricing scheme will damage exports.

Key Points

The Jobs and Competitiveness Program is vastly inferior to competitiveness safeguards contained in other schemes, especially the EU ETS.

Coal has been arbitrarily and unfairly excluded from assistance under the JCP scheme.

Not a single Top 4 overseas competitor/producer of the 13 key minerals commodities proposes to impose a comparable carbon cost.

The minerals sector faces a carbon tax liability of \$25 to \$30 billion by 2020-21.

The proposed Jobs and Competitiveness Program fails to mitigate the loss of competitiveness of Australian exporters and import-competing industries.

- Under the JCP, more than 80 per cent of Australian exports will enter global markets saddled with carbon costs not faced by international competitors.
- Most of Australia's key competitors have no plans to adopt comparable carbon pricing.
 - Where schemes have been adopted (or proposed), free allocation of virtually all permits is a common feature.
- Many Australian businesses have limited or no opportunity to reduce their emissions liability
 - This is especially the case in regional and remote areas where alternative energy sources are neither available nor practicable in the short to medium term.
- The Government complacently assumes that increasing costs structures in Australian export and import competing industries will not lead to a loss of market share.
 - Recent experience suggests otherwise.

The minerals sector will face carbon costs nearing \$30 billion by 2020.

 Only 10 per cent of minerals sector exports will receive transitional safeguards to protect their competitiveness.

The carbon costs for just 3 minerals commodities could exceed \$25 billion over the period to 2020.

- Over the period 2012-21, the likely liability for the coal sector will be more than \$18 billion.
 - Even under the proposed 'assistance' scheme for the coal sector, Australian producers will face net carbon costs of an estimated \$16.9 billion by 2021.

Carbon Tax (on fugitive emissions)	\$14.6 billion
Increase in fuel excise (direct and indirect impacts assuming it is fully passed on by rail/road transporters to coal companies)	\$ 1.7 billion
Increase in electricity cost (assuming 80% pass through)	\$ 1.9 billion
Total gross impost in first 10 years	\$18.2 billion
Coal industry assistance	\$ 1.3 billion
Total net impost in first 10 years	\$16.9 billion

- o If the 2020 target is *more* ambitious than 5 per cent (as the Greens insist) the coal sector's cumulative carbon costs will exceed \$20 billion.
- An indicative cumulative carbon cost through to 2020 for the gold sector is more than \$2 billion.
 - If a higher (15 per cent) target is embraced the cumulative carbon costs will surge to \$3.3 billion.
- An indicative cumulative carbon cost through to 2020 for the nickel sector is \$1.34 billion.
 - If a higher (15 per cent) target is embraced the cumulative carbon costs will surge to \$2 billion.

The principal beneficiaries of the carbon pricing scheme will be Australia's competitors in global commodities markets.

- Most of Australia's competitors across major commodities are developing nations that have no plans to introduce a comparable carbon price (see table).
- Not a single Top 4 competitor/producer in any of the 13 key minerals commodities has a functioning carbon pricing scheme. (In the sole case of Poland, emissions from coal mining are exempted from the EU ETS).

Australia's competitors in exports and production of key commodities*

Iron ore	Brazil	India	South Africa	Canada
Thermal coal	Indonesia	Russia	South Africa	Colombia
Met. coal	USA	Canada	Russia	Poland
Copper	Chile	Peru	Indonesia	Canada
Gold	China	USA	Russia	South Africa
Aluminium	China	Russia	Canada	USA
Nickel	Russia	Indonesia	Canada	Philippines
Zinc	China	Peru	USA	India
Lead	China	USA	Peru	Mexico
Manganese	China	South Africa	Kazakhstan	India
Silver	Peru	Mexico	China	Bolivia
Tin	China	Indonesia	Peru	Bolivia
Uranium	Kazakhstan	Canada	Namibia	Russia

Source: ABARES, Australian Commodity Statistics 2010.

Data for aluminium, nickel, zinc, lead, manganese, silver, tin and uranium is based on 2009 production statistics.

Nickel, zinc, lead, silver and tin are mine production statistics.

Data for gold is based on production and drawn from GFMS Gold Survey 2011.

In addition to its broad policy shortcomings, the JCP scheme has at least 5 basic flaws, including but not limited to:

- First, the legislation arbitrarily excludes coal from receiving assistance despite the fact the sector meets all objective criteria
 - O No other sector is discriminated against in this way.
- Second, the terms of the JCP will be laid down in regulations rather than guaranteed in legislation
 - This is unsatisfactory in a reform cited as the most substantial economic reform in a generation.
- Third, for firms eligible for assistance, the legislation fails to guarantee assistance beyond 5 years
 - This is inadequate given the importance of a stable investment outlook, and the temptations that a future Government may suddenly and arbitrarily reduce industry support for revenue raising (or other) reasons.

^{*}Data for Iron ore, coal and copper concentrate are based on 2009 export statistics.

- Fourth, the terms of assistance are inferior to the former Carbon Pollution Reduction Scheme (CPRS)
 - The 'pause' on the decay of assistance contained in the CPRS model is not replicated in the Clean Energy Future legislation.
- Fifth, there are significant ambiguities in the provisions related to the assessment of whether relevant trading partners have adopted comparable policy constraints
 - This raises the prospect of a sector's assistance being withdrawn even if a substantial share of global trade in that sector is not subject to a comparable carbon constraint.

4. Economic cost but no environment gain: Fewer jobs, lower wages and productivity growth, but higher global emissions.

Key Points

Even flawed Treasury modelling concedes that real wages and productivity growth will grow more slowly under carbon pricing.

Treasury modelling also reveals that Australia's economy will be \$1 trillion smaller by 2050 as a result of carbon pricing.

Despite the cost, the projected emissions <u>savings</u> will be dwarfed by <u>increases</u> in other nations.

The carbon pricing scheme will have a substantial negative impact on output and employment in export and import-competing industries.

- Analysis of Treasury modelling shows the carbon pricing scheme will reduce national income by approximately \$1 trillion by 2050.²⁰
- Modelling previously undertaken for State and Territory Governments revealed that a CPRS-style carbon pricing scheme would reduce forecast employment by 126,000 by 2020,²¹ with the most significant impact in regional and rural areas.
- Separate work undertaken by Concept Economics showed that output and investment in the minerals sector would fall by between 12 and 41 per cent.
 - The modelling found that this would result in a reduction of forecast employment in the minerals industry of 23,500 by 2020, increasing to 63,000 fewer jobs by 2030.²²

Even with its rosy assumptions, the 2011 Treasury modelling highlights that as national output falls, the only way to maintain similar levels of employment is for real wages growth to fall (see box).

 $^{^{20}}$ See Senate Scrutiny of New Taxes Committee, Hearing Transcript, August 10, p.61.

²¹ Access Economics, 'Report No.2: Impacts on Disadvantaged Regions', Report prepared for the Council for the Australian Federation Secretariat, May 2009, p.iii.

²² Concept Economics, 'The Employment Effects in the Australian Minerals Industry from the Proposed Carbon Pollution Reduction Scheme in Australia', Report prepared for the Minerals Council of Australia, May 2009.

"Real wages will grow more slowly as a result of carbon pricing."

Meghan Quinn, Australian Treasury, Evidence to Senate hearing, 10 August 2011.

Economic impact.

- Treasury modelling in 2008 found that a CPRS-style scheme would produce 'up to 10 years' of 'temporary unemployment,'23 a substantial contraction of investment in key export sectors, and 'reduce growth in aggregate productivity'.24
- The 2011 modelling update has confirmed that real wages growth will slow as will aggregate productivity (see box below).

"Productivity growth will be slower with the introduction of carbon pricing."

Meghan Quinn, Australian Treasury, Evidence to Senate hearing, 10 August 2011.

Treasury has modelled what a future world based on what other countries <u>say</u>, not what they <u>do</u>.

"...we take governments at their word when they make international pledges and pledges to their electorates that those reductions will be achieved."

Meghan Quinn, Australian Treasury, Evidence to Senate hearing, 10 August 2011.

• But based on the record of the 'binding' Kyoto Protocol, many nations are unlikely to meet the 'non-binding' commitments made at Copenhagen and Cancun.

Country	GHG Emissions change since 1990	Relationship to Kyoto target.
Australia	3 per cent increase	Will meet target of emissions at 108 per cent of 1990 levels. ²⁵
Canada	27 per cent increase	Will not meet Kyoto target (of 6 per cent reduction). ²⁶
Japan	8 per cent increase	Will not meet Kyoto target of 6 per cent reduction.
New Zealand	26 per cent increase	Will not meet Kyoto target of zero increase in emissions.
United States	16 per cent increase	Will not meet original Kyoto target (of 6 per cent fall). 27
EU-15	1.5 per cent decrease	EU confident that it will meet target of 8 per cent reduction. ²⁸

²³ Australian Government, Australia's Low Pollution Future: the Economics of Climate Change Mitigation, October 2008, p.151.

²⁵ Department of Climate Change, National Greenhouse Gas Inventory: Accounting for the Kyoto Target, December quarter 2010, p.6.

[.] ²⁴ Ibid.

²⁶ Garnaut Climate Change Review, *Draft Report*, July 2008. p277.

²⁷ US signed, but did not ratify the Kyoto Protocol.

²⁸ European Environment Agency, Greenhouse Gas Emissions Trends and Projections in Europe 2007, 2007.

The projected emissions <u>savings</u> from the carbon pricing scheme will be dwarfed by <u>increases</u> in other nations.

- The Gillard Government claims the carbon pricing scheme will 'save' 160 million tonnes of CO_{2e} by 2020.
- In 2020, on Treasury (baseline) estimates, China will be producing 49 million tonnes of CO_{2e} by 2020 every day.²⁹
- In other words, in 2021, China will replace Australia's projected emissions reductions (57 million tonnes) in just over one day
 - o and Australia's projected emissions savings (including purchase of international permits) in less than 4 days.

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²⁹ See Australian Government, Strong Growth, Low Pollution: Modelling a Carbon Price, July 2011. p.151

5. <u>Carbon tax on fuel</u>: Direct costs on at least 60,000 businesses in 2012 and 100,000 by 2014.

Key Points

The Gillard Government wrongly claims that its carbon price will directly affect only 500 'big polluters'.

ATO data shows that the carbon price on fuel will directly impact 60,000 individual businesses from Day 1, and at least 100,000 businesses from 2014.

The fuel tax will apply to some sectors but not others, creating investment misallocation.

The impost reverses a longstanding principle not to impose tax on business inputs. (See also Section 7)

The Gillard Government repeatedly claims that only 500 'big polluters' will be subject to the new carbon price.

- For example, in the Regulation Impact Statement on the Clean Energy Future package, the Department of Finance states that:
 - "The Government does not know of any small businesses who would be directly liable under the carbon price..."

But the Gillard Government's own legislation (the Fuel Tax Legislation Amendment (Clean Energy) Bill) will:

• "...provide an effective carbon price on business through the fuel tax system."

There is no threshold in 'carbon pollution' that must be reached before this tax applies to individual businesses, small, medium and large.

- In other words, the tax's impact will **not** be confined to 'big polluters'.
- And the tax is a major impact in the first 3 years alone, Government estimates show that the carbon price on fuel will raise \$3.3 billion.³²

³⁰ Department of Finance, Australia's Plan for a Clean Energy Future: Regulation Impact Statement, p.123.

³¹ Department of Climate Change and Energy Efficiency, Exposure Draft of the Clean Energy Bill 2011: Commentary on Provisions, 28 July 2011. p.23

³² Department of Climate Change and Energy Efficiency, Securing a Clean Energy Future: The Australian Government's Climate Change Plan, pp.131-135.

Based on Australian Tax Office data, the carbon price on fuel will apply to more than 60,000 businesses,³³ among them tens of thousands of small businesses, including:

- 22,500 construction businesses
- 5,350 manufacturing businesses
- 5,305 businesses in the retail and wholesale trades
- thousands of tourism operators, including accommodation and food service businesses
- 1,500 mining operations
- several hospitals and large health care providers
- 775 education and training sector bodies.

This number of affected businesses will increase to more than 100,000 on 1 July 2014.

• When the road freight sector, including tens of thousands of owner drivers, will be liable for the carbon tax on fuel.³⁴

The application of the fuel tax arrangements is completely arbitrary.

- The tax applies immediately to rail and off-road use, but not to passenger motor vehicles, or to use in the agricultural sector.
 - There is no evidence that fuel use in covered sectors is more price elastic than in non-covered sectors.
 - There is no evidence that alternative technologies are more available in covered sectors than in non-covered sectors.

The impact on businesses – like mining – that are based in regional and remote areas will be disproportionate.

• In remote mining operations there is simply no practical alternative to fuel use for power generation and plant operation.

The impost reverses a longstanding principle not to impose tax on business inputs.

 For more detailed discussion on policy concerns with the fuel tax see Section 7 (Taxation issues).

³³ ATO data cited in Australian National Audit Office (ANAO), Report No.49: Fuel Tax Credit Scheme, 21 June 2011.

³⁴ Ihid

6. Flaws in the package: Legislation contains a raft of policy and implementation flaws.

Key Points

The legislative package fails to deliver on several key MPCCC principles.

The scheme will fail to deliver least cost abatement.

It will fail to deliver certainty for investors.

It does not have the flexibility to adjust to international circumstances nor achieve budget neutrality.

It threatens to put energy security at risk.

The scheme will undermine the competitiveness of Australia's key export sectors.

1. The legislative package fails the MPCCC principle of <u>least cost abatement</u>.

- The MPCCC stated that 'a mechanism to price carbon should harness the most cost-effective pollution reduction options'.
- The legislative package fails this test in several ways, thus unnecessarily increasing the cost of the carbon pricing scheme to Australian businesses (and households):
 - First, the <u>arbitrary approach to the coverage of sectors</u> (exclusion of certain transport fuels, emissions from some agricultural activities) will have 2 impacts:
 - It will impose a higher burden on 'covered sectors' 60 per cent of economy will be responsible for 100 per cent of emissions reductions.
 - This approach contradicts the Gillard Government's stated commitment to least cost abatement, because uncovered sectors may be able to offer cheaper abatement.
 - Second, the legislative package proposes <u>a limit of 5 per cent purchases</u> of credits from 'carbon farming' during the fixed price phase of the scheme.

- An artificial limit on such purchases is contrary to the notion of least cost abatement.
- Third, the <u>approach to international linking contradicts the principle</u> of least cost abatement in 4 ways
 - by <u>prohibiting access</u> to international permits during the fixed price phase
 - by imposing limits on the <u>amount</u> of international permits that an individual firm can purchase
 - by imposing artificial limits on the <u>type</u> of international permits that firms can purchase, and
 - by ensuring that any international permits purchased below the floor price (opens at \$15) will <u>face additional charges</u>.
- 2. On the MPCCC principle of investment certainty, the legislative package fails to 'provide businesses with the confidence needed to undertake long-term investments in low emissions technology and infrastructure'.
 - The legislative package fails this test on 3 fronts:
 - First, package provides <u>no certainty on key factors that will influence</u>
 <u>the carbon price</u> under the flexible price phase
 - under the legislation, the post-2015 caps (for the flexible price phase)
 will be set by regulation not legislation, with the first caps and
 trajectory not set until 2014
 - but the lack of clarity on whether Australia will be taking on a 5, 15 or even 25 per cent emissions reduction target for 2020 (against 2000 levels) will create significant uncertainty about the level of the carbon price once the 'fixed' price phase ends.
 - Second, in the event of a future deadlock on scheme caps, a severe
 'default' trajectory will apply
 - but the proposed linear approach is severe, effectively requiring 'covered sectors' to achieve all the abatement necessary for Australia to meet its annual caps and medium term targets.

- Third, the Jobs and Competitiveness Program (JCP) provides <u>no guarantee</u> of assistance beyond an initial 5 year period
 - this uncertainty is not assisted by a range of Productivity Commission reviews – 3 within the period 2014 to 2018 – with lengthy and arguably contradictory terms of reference.
- 3. The proposed scheme fails the MPCCC principle of flexibility, namely that a mechanism 'should be sufficiently flexible to respond to changing international circumstances'.
 - The legislation (and scheme design) fails to take account of the patchy and uncertain international environment.
 - Only 60 firms out of tens of thousands of exporters and hundreds of thousands of import competing businesses will receive relief from additional costs imposed on them ahead of their international competitors.

4. The carbon pricing scheme fails to deliver the MPCCC <u>principle of budget</u> <u>neutrality</u>.

- With a deficit of \$3.6 billion over the forward estimates, the carbon pricing scheme fails to meet the commitment that 'a carbon price mechanism and associated assistance measures should be budget-neutral'.
- Billions of dollars in additional complementary measures will impose additional direct and indirect costs, and distort investment behaviour.
- The new cost outlays are additional to the Renewable Energy Target which has been characterised as equivalent as a \$20 billion subsidy to the renewable sector.

5. Contrary to MPCCC principles, the proposed approach will reduce, not enhance <u>energy security.</u>

- The inadequate scale of the transitional assistance scheme to the power generation sector, the arbitrary application of the scheme, and the distortions created by the Renewable Energy Target and other complementary measures will create a more unstable investment environment, and produce unnecessarily higher costs in the power sector.
- Instead of the carbon price providing the primary driver on investment in the sector, investment will be distorted by regulatory quotas (the Renewable Energy Target), an approach to resource allocation based on 'picking winners' (Clean Energy Finance

Corporation) the arbitrary exclusion of clean energy technologies from such measures (exclusion of Carbon Capture and Storage from grants schemes) and the outright refusal to contemplate all clean energy options (nuclear energy).

6. The scheme will undermine the international competitiveness of Australia's export and import-competing sectors

- by failing to provide transitional assistance to a wide range of trade exposed sectors
 - o only 60 Australian firms are classified as 'trade exposed'. Only 10 per cent of minerals exports, by value, will receive assistance under the JCP.
- by providing inadequate assistance to a sub-set of Australia trade exposed industry and failing to provide adequate guarantees of continued support to those firms
 - o assistance is set out in regulation not legislation, is only guaranteed for 5 years, is subject to several Productivity Commission reviews, and inferior to that provided under the former CPRS.
- more broadly by failing to align Australia's approach to international competitiveness safeguards with approaches adopted or planned in comparable schemes abroad.

7. <u>Taxation issues</u>: Policy and implementation concerns.

Key points

The proposed approach undermines both the goal of reducing Australia's carbon emissions in an effective manner and the well-established principles of market-based emissions trading schemes – that is, to encourage least cost abatement in the most efficient manner for the individual enterprise.

In addition, some income tax rules have been modified for the purposes of this proposal so they are inconsistent with standard accounting accrual principles and valuation practices.

This section of the submission deals with income tax, GST and fuel tax credit approaches.

Income Taxation - rolling balance method and permits not held for resale

- The Bill proposes to allow an income tax deduction for expenditure incurred on the purchase of a permit and to include any proceeds from the sale of a permit in assessable income. The cost of acquiring a permit would be deductible at the time when the permit is acquired. If the permit were banked, the effect of the deduction would be deferred until the time the permit is surrendered or sold. Any proceeds received on the sale of a permit would be treated as assessable income.
- The rolling balance method has been identified by Government as the method for ensuring an income tax deduction for permit expenditure is allowed in the year when the permit is sold or surrendered. Under this method, the cost of a permit is tax deductible when the permit is acquired, the proceeds from selling the permit would be assessable and any difference in the value of permits held at the beginning and end of the income year would be reflected in the taxable income. The rolling balance method principles are similar to the trading stock provisions.
- The Clean Energy Bill 2011 proposes that companies can base their assessment of emissions for a financial year either on the previous year's National Greenhouse and Energy Reporting (NGER) Act reported emissions, or using a reasonable estimate.
 - The minerals sector supports this proposed treatment (rather than simply requiring a current year estimate).
- The minerals sector notes that the Government is modifying the trading stock provisions to meet a particular circumstance. For mining companies (and many other taxpayers), permits typically will be acquired to meet emissions obligations and

unlike trading stock are generally not expected to be acquired for the purpose of sale.

- In a typical case, a taxpayer may acquire permits throughout the financial year to offset emissions generated throughout the year, and the rolling balance method would defer the ability to deduct these outgoings until any permits not surrendered in the financial year period are subsequently surrendered during the following financial year (during the "true-up" phase).
 - This timing mismatch is contrary to the general principles of the accruals method of accounting, as used by all businesses to recognise costs that are referrable to the year of income.
- Based on this principle, the following table would provide a legitimate outcome.
 Hence taxpayers that are not in the business of trading in permits would be entitled to claim an income tax deduction for the accrual and purchase of permits acquired to meet emission obligations on an incurred basis as per ordinary taxation principles.

Scheme	Current year purchase and/or accrual of permits for \$100 of emissions obligations	Tax deduction per draft law	Recommended tax deduction
I.Three year fixed carbon price	\$100	\$75 (& \$25 in the following year)	\$100
2. Flexible emissions trading scheme	\$100	Nil (& \$100 in the following year)	\$100

- In this particular case, the final resolution of the financial years permit's acquittal and surrender is up to 7 months after the end of the financial year. This appears to explain why the Government has decided to modify standard accrual accounting rules for the trading stock rules in the way it has and the minerals sector understands why this approach might be taken.
 - Nonetheless, there is a potential lag created between the financial year for which the permit applies and the actual final surrender in the following financial year. This increased complexity adds to the case for a review of the penalty provisions the Bill seeks to establish (see below).

Permits held for resale - trading stock valuation election methods

The Bill further departs from standard practices in its proposed valuation methods, namely:

- The proposed taxation amendments are aimed at establishing "a rolling balance method of accounting for registered emissions units, similar to that for trading stock". Trading stock provisions have been in place for many years and work efficiently. Unfortunately, the Bill introduces a series of restrictions which undermine the flexibility taxpayers need to manage their affairs efficiently, and take away from the simplicity of adopting existing trading stock valuation rules.
- Restrictions on a taxpayer's ability to elect different cost valuation methods and the
 arbitrary freezing of those decisions over many years are unwarranted and should be
 re-written to reflect normal trading stock arrangements. While the mineral sector
 appreciates the desire of the Government to limit the opportunities for so-called tax
 arbitrage, in reality the acquisition, holding and disposal of permits acquired for
 resale under a rolling balance method is no different to the ownership of trading
 stock. Measures regulating the tax treatment of trading stock and permits acquired
 for resale should be consistent with application of existing trading stock valuation
 rules.

Penalties

- The penalty regimes applied during the fixed term period are too harsh, and should not apply to a taxpayer who makes a genuine attempt at meeting its obligations. The 130 per cent and 200 per cent non-deductible penalties should only apply to any taxpayers who blatantly disregard their obligations.
- The permit surrender rules are broadly based on company tax rules. Consistent with this, we recommend that the penalty provisions also follow company tax rules under which general interest charge is applied where genuine permit surrenders are outside a 15% variance (being the tolerance applied to Pay As You Go Australian company tax instalments).
- The penalty provisions of the income tax regime should otherwise apply, replacing the proposed flat 130% and 200% penalties with:
 - o 25% penalty for no reasonable care;
 - o 50% for recklessness; and
 - o 75% for intentional disregard.

Income tax treatment of allocated permits

- The Bill provides correctly for allocated permits to be valued at nil for income tax purposes. However, the Bill also restricts any ability for companies to claim a tax deduction for legitimate costs in relation to acquiring, holding and disposal of these permits.
 - This adds unnecessary costs and will require companies to separately account for what should be an integrated approach to managing greenhouse gas emissions.

GST treatment

- The minerals sector welcomes the Government's decision to change the GST treatment of permits to GST-free as recommended by industry in the past.
- We note, though, that derivatives will still be subject to GST. The Government has stated that it is keen to develop deep secondary markets to help provide certainty to participants and GST on those transactions would appear to be an extra compliance requirement for what are business-to-business transactions with no revenue implications.

Fuel tax

- The Government's planned changes to fuel taxation are contrary to both sound taxation policy and to the principles that underpin the use of a market mechanism to encourage least cost abatement.
 - It is poor policy to target a particular fuel source or indeed industry in an arbitrary manner (noting that agriculture, fishing and forestry are exempt and thus does not meet the equity principle of taxation). As well as distorting economic activity, it does not allow the business to manage its emissions as a facility.
- The Government's policy fails to take account of the basic purpose of the fuel tax credit system and appears driven by the false premise that such credits represents a "subsidy" to fossil fuel. As Treasury correctly noted in its submission to the Group of 20 nations on the issue of fuel subsidies, there are "no inefficient fossil fuel subsidies in Australia".³⁵
- Diesel fuel, in particular, is an essential component of minerals industry production used in transport and electricity generation in remote mine sites. Indeed there are some sites where there is no alternative to diesel in other words, where gas

³⁵ Senate Standing Committee on Economics, Answers to Questions on Notice, Budget Estimates, 1-3 June, 2010. BET 38.

- pipelines or alternative energy sources such as large wind or solar arrays for supplementary power cannot be used for environmental or practical reasons.
- As a tax on business input, a fuel tax excise directly raises costs across the entire
 operation and causes business to adopt less efficient business practices. Indeed, taxes
 on business inputs generate bigger problems if they are introduced closer to the
 start of the production process as they distort all subsequent decisions by
 downstream industries.
 - This is counterproductive in industries where demand is typically very price elastic – that is, in export industries.

Breach of principle of no taxation on business inputs

- A major principle underlying the reform of Australia's tax system under the "A New Tax System" (ANTS) package was the recognition that taxing business inputs (through the wholesale sales tax, excise or other 'hidden' taxes) is highly inefficient. Intermediate inputs are goods or services which, although they can otherwise be sold for final consumption in their own right, are used by firms in the production of other goods and services. Examples include diesel, electricity, telephone calls and motor vehicles.
- Economic theory argues against applying taxes when the goods are used as inputs in the production of other goods or services because for a given amount of revenue raised the efficiency cost will be higher with a tax on inputs, compared with a tax on final consumption or income.
- This is because a tax on inputs distorts both production and consumption decisions, whereas broad-based taxes on consumption or income only distort the decision to supply labour to the production process hence, it is better to avoid production inefficiency by taxing final consumption directly rather than taxing inputs. This rationale lies behind the rebate of GST to businesses with the availability of input tax credits (ITCs).
- Without such credits, input taxes raise the classic 'taxes on taxes' problem. Taxes imposed on business inputs 'cascade' along the production chain, increasing the effective rate of tax at each stage (just like the embedded Wholesale Sales Tax before it was abolished). As stated by Federal Treasury in its submission to The Fuel Taxation Inquiry, 13 February 2002 (page 16):
 - The ANTS package was designed to address the inefficient allocation of resources resulting from excise on intermediate inputs. This was done by reducing the revenue raising component of excise and substituting it with the

GST. As the GST is only borne on the final consumption of goods and services the incidence is shifted away from intermediate inputs.

- The Productivity Commission comparison of the 'environmental efficacy' of fuel tax arrangements around the world shows that direct taxation of fuel is inefficient and fails the goal of 'least cost abatement'.
 - While Australia's fuel taxes are low compared to some other developed nations, abatement in Australia is expensive and more so in those countries with higher tax rates Australian taxes produce abatement in the range of \$A57-59 a tonne, whereas Germany's higher fuel taxes achieve abatement at \$A113-119 a tonne and those in the UK of \$A130-139 a tonne.

Detailed administrative issues

- The current fuel tax credit accounting arrangements are well-established and should not be modified for the purposes of this policy measure. Industry would therefore expect the existing attribution rules to apply – namely, fuel tax credit is claimed when purchased and any ineligible use adjusted at the time it is identified.
- We also note a potential anomaly for heavy vehicle transport companies in the operation of the credit during the two years when that sector is exempt. Many contractors receive fuel from mining companies for return journeys from mine sites.
- This fuel held by the mining company would now be subject to the carbon equivalent charge and that cost would then be included in cost of fuel for the transport contractor even though they are exempt in the years 2012-13 and 2013-14.

8. <u>Better way</u>: A new approach can prevent the loss of export competitiveness, and achieve better environmental outcomes.

Key Points

A different approach is required to prevent loss of trade competitiveness under carbon pricing.

Australia should follow other nations and adopt a phased approach to the auctioning of permits.

Treatment of fugitive emissions from coal mining should also be consistent with international approaches.

Any carbon pricing scheme adopted in Australia must effectively deal with trade exposed industries.

- It is a simple reality that most of Australia's trade competitors will not have a carbon price in place in the near future.
- Australian industries will therefore be at a substantial competitive disadvantage.

Failing to deal with the trade exposure issue will mean that the environmental integrity of Australia's scheme will be compromised.

- The effect of the policy will not be a reduction in global emissions, but a relocation of where those emissions take place.
- The costs borne by the Australian community will therefore have no environmental benefit.

Australia should follow other nations and adopt a phased approach to the auctioning of permits.

- All international schemes (current or planned) are based on a model where virtually all permits are allocated without charge to the traded sector during a lengthy transitional period.
- Based on the flawed CPRS, the JCP model is overly complex, based on subjective emissions intensity thresholds which fail to take account of a sector's trade exposure, and prone to political interference and horse-trading.

 The CPRS approach arbitrarily excluded Australia's largest export sector (coal), despite the fact that it meets the stated criteria.

The scheme design must recognise that trade exposed firms cannot pass on carbon costs to customers.

• Trade exposed businesses operating in fiercely competitive global markets have no capacity to pass direct or indirect carbon costs on to their customers.

Allocation of permits to trade exposed industries is a simple and practical approach to dealing with the trade exposure issue.

- Complicated activity schemes and definitions are not necessary.
- In the absence of a binding international agreement on greenhouse gas emission reductions, there should be a full or 94.5 per cent allocation of permits to trade exposed firms. This allocation of permits would cover both Scope I (direct) and Scope 2 (indirect electricity, heat or steam) emissions.
 - Under such an approach, all trade exposed sectors would be treated equally

 there would be no arbitrary emissions intensity thresholds or complicated
 formulae for determining eligibility.
- Given the slow progress in global negotiations and to provide clarity and certainty
 for investors, this allocation should be fixed for 5 years, with an independent review
 conducted thereafter to assess progress made by other nations towards binding
 emission reduction commitments.
 - The auctioning of permits to trade exposed firms could be increased as trade competitor nations take on comparable commitments.
- This approach would be consistent with that adopted by the EU ETS since 2005 as well as the approach proposed or being contemplated in Korea and in regional trading schemes in the US.

The treatment of fugitive emissions under Australia's proposed carbon pricing mechanism must be in step with other international jurisdictions.

Appropriate safeguards for trade exposed firms will <u>not</u> reduce the ability of the scheme to achieve its medium term targets.

Providing trade exposed firms with a full or 94.5 per cent allocation of permits will
 <u>not</u> reduce the environmental effectiveness of the proposed scheme. Allocating
 permits without charge will <u>not</u> make a scheme less environmentally rigorous than if
 all permits are auctioned.

 A long recognised and fundamental feature (and advantage) of emissions trading is that the approach to initial allocation does not affect the ultimate outcomes from the scheme³⁶.

Trade exposed firms receiving allocated permits will have strong incentives to reduce emissions.

- Firms will face incentives from two directions. First, they have an incentive to seek
 out and implement lower emissions technologies in order to avoid permit costs in
 the future.
- Second, firms will have an incentive to implement lower emissions technologies in order to reduce emissions and so generate returns from selling permits into the market — in line with the principles of emissions trading.

Importantly, initial full allocation relieves a cash flow constraint on trade exposed firms.

 Given that trade exposed firms cannot pass on permit costs to consumers, initial full allocation will avoid cash flow issues and will ensure that firms retain funds to invest in lower emission technologies.

The design of an Australian carbon pricing scheme faces a simple choice, either....

- Adopt a simple and effective allocation approach for trade exposed industries so as
 to maintain the environmental integrity of the scheme; <u>or</u>
- Deal ineffectively with the trade exposure problem and impose costs on the Australian community without necessarily achieving any environmental benefits.

³⁶ See, for example the seminal work of David Montgomery (1972) 'Markets in Licenses and Efficient Pollution Control Programs', *Journal of Economic Theory*, vol 5, pp395-418.